PHASE I ARCHAEOLOGICAL SURVEY AND PHASE II EVALUATION OF SITES 21CA771, 772, 773, AND 774 FOR CSAH 77 RECONSTRUCTION IN CASS COUNTY, MN

State Project Number: 011-677-013

Federal Project Number: SPR CR15(001)

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MN OSA License Numbers: 14-038, 14-069, and 14-071

Authorized and Sponsored by:
Minnesota Department of Transportation
and the Federal Highway Administration

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MANAGEMENT SUMMARY

The Cass County Highway Department is planning 4.1 miles of road reconstruction and trail construction along County State Aid Highway (CSAH) 77 (Interlachen Road) in Cass County from Sandy Point Road to CSAH 78 in T135N R29W Sections 16, 17, 20, 29, and 32 (State Project 011-677-013). The project is funded by the Federal Highway Administration through Minnesota Department of Transportation (MnDOT) State Aid for Local Transportation.

Florin Cultural Resources Services, LLC was retained by MnDOT to conduct a Phase I archaeological survey for the project and Phase II evaluations of four sites (21CA771, 21CA772, 21CA773, and 21CA774) that were identified during the survey.

The project area is located in Archaeological Region 4w – Central Lakes Deciduous West. The survey corridor, centered on the existing CSAH 77 centerline, was 30 meters wide (100 feet) in the rural sections and 20 meters wide (66 feet) in the urban sections. The archaeological survey area included 39.8 acres. The landscape in the project area is a wooded rolling outwash plain along the west side of Gull Lake.

Fieldwork was conducted from September 2 to November 21, 2014. Frank Florin was the principal investigator. The Phase I and II archaeological field methods included pedestrian survey, shovel tests, and excavation units (XUs). Five new precontact sites were identified and evaluated (21CA771, 21CA772, 21CA773, 21CA774, and 21CA775). The Phase I archaeological survey and Phase II evaluations for the project are complete. It is the opinion of FCRS that no historic properties eligible for or listed on the NRHP will be affected by this project.

21CA771 is an Initial Woodland habitation site with Brainerd ware ceramics, lithic debris, fire-cracked rocks (FCR), and a retouched flake. Phase II evaluation included five (1-x-1 meter) XUs and close-interval shovel tests. The artifact density is very low, and portions of the site were disturbed from buried utilities and previous road construction. Under Criterion D, site 21CA771 lacks the potential to provide important information on the precontact period because it has a sparse and limited artifact assemblage and lacks integrity. The site is recommended not eligible for listing on the National Register of Historic Places (NRHP).

21CA772 is a Terminal Woodland and Middle/Late Archaic habitation site. Artifacts recovered include a cache of 37 netsinkers, Ogechie ceramics with trailed line decoration, three small Terminal Woodland projectile points, a Table Rock (Late Archaic) point, stone tools, FCR, and faunal material. Phase II evaluation included close-interval shovel tests, 17 1-x-1 meter XUs, and seven 1-x-0.5 meter XUs excavation units. The artifact density varied from low to moderate, and the cultural deposits were relatively undisturbed, although there was mixing and overlap of site components. Charred residue from an Ogechie ceramic sherd dated to 760 +/- 30 RCYBP (cal. 730 to 665 BP). The Middle/Late Archaic component includes a Table Rock projectile point, four faunal samples dating to ca. 5800 RCYBP (cal. 6700 BP), and one faunal sample dating to ca. 4950 RCYBP (cal. 5670 BP). The research potential of the site is low because of 1) the low artifact density in many areas, particularly the north half of the site; 2) the lack of vertically or horizontally discrete components; 3) absence of features; and 4) the information potential was exhausted by the Phase II testing for the portion of the site within the APE. Under Criterion D, site 21CA772 lacks the potential to provide important information on the precontact period because of a lack of integrity and research potential. The site is recommended not eligible for listing on the NRHP.

Site 21CA773 is a large, precontact artifact scatter and habitation. A Late Archaic occupation was defined from an earthen oven feature that dated to ca. 3900 RCYBP (cal. 4500 BP). Given the large size of the site and the abundant precontact occupations in the area, there were probably multiple ephemeral precontact occupations extending over thousands of years. However, the age and cultural affiliation of the other precontact occupations are unknown because of the absence of diagnostic artifacts or dateable materials. Artifact density in general was very low and consisted mostly of lithic debris. Other artifact types included FCR, cores, stone tools, and faunal material. Phase II evaluation included close-interval shovel tests and twelve 1-x-1 meter XUs. Under Criterion D, site 21CA773 lacks the potential to provide important information on the precontact period because it has a sparse and limited artifact assemblage and lacks integrity because of the absence of discrete components. The site is recommended not eligible for listing on the NRHP.

21CA774 is a large, precontact artifact scatter and habitation. An Initial Woodland component was identified based on Brainerd ware ceramics, and a Terminal Woodland component was defined from a small projectile point and an earthen oven feature that dated to ca. 1190 RCYBP (cal. 1100 BP). Given the large size of the site and the abundant precontact occupations in the area, there were probably multiple ephemeral precontact occupations extending over thousands of years. However, the age and cultural affiliation of the other precontact occupations are unknown because of the absence of diagnostic artifacts or dateable materials. Artifact density in general was very low and consisted mostly of lithic debris. Other artifact types included FCR, ceramics, cores, stone tools, and faunal material. Phase II evaluation included close-interval shovel tests and 23 1-x-1 meter XUs. Under Criterion D, site 21CA774 lacks the potential to provide important information on the precontact period because it has a sparse and limited artifact assemblage and lacks integrity because of the absence of discrete components, except in a few very small areas. The site is recommended not eligible for listing on the NRHP.

Site 21CA775 is a small, sparse precontact lithic scatter. No diagnostic artifacts were recovered, and the cultural context and age is unknown. Under Criterion D, site 21CA775 lacks the potential to provide important information on the precontact period because it has a sparse and limited artifact assemblage. The site is recommended not eligible for listing on the NRHP.

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1.1 Overview

The Cass County Highway Department is planning 4.1 miles of road reconstruction and trail construction along County State Aid Highway (CSAH) 77 (Interlachen Road) in Cass County from Sandy Point Road to CSAH 78 in T135N R29W Sections 16, 17, 20, 29, and 32 (State Project 011-677-013). The project is funded by the Federal Highway Administration through Minnesota Department of Transportation (MnDOT) State Aid for Local Transportation.

Florin Cultural Resources Services, LLC was retained by MnDOT to conduct a Phase I archaeological survey for the project and Phase II evaluation of five sites (21CA771, 21CA772, 21CA773, 21CA774, and 21CA775), which were identified during the survey. Fieldwork was conducted from September 2 to November 21, 2014.

1.2 Project Setting

The project is located approximately four miles southwest of Nisswa and eleven miles northwest of Brainerd and Baxter, Minnesota. The project is on a rolling outwash plain on the northwest side of Gull Lake along CSAH 77. The area contains a mixture of wooded recreational land, private residences on wooded lots, and a few businesses.

1.3 Project Area and Area of Potential Effect

The project area is located in T135N R29W Sections 16, 17, 20, 29, and 32 in Cass County (Figures 1 and 2). The archaeological survey corridor along CSAH 77 was 4.1 miles long, with the south end of the project at Sandy Point Road and the north end at CSAH 78.

The survey corridor, centered on the existing CSAH 77 centerline, was 30 meters wide (100 feet) in the rural sections and 20 meters wide (66 feet) in the urban sections. The rural section is 1.7 miles long and extends across the south portion of the project area from Sandy Point Road to the northern intersection of Pebble Beach Road and CSAH 77. The urban section is 2.4 miles long and extends across the northern portion of the project area from the northern intersection of Pebble Beach Road and CSAH 77 to CSAH 78. The archaeological survey included 39.8 acres.

The Area of Potential Effect (APE) for the project is the archaeological survey corridor limits, extending to one meter below surface. There is no archaeological potential for intact cultural deposits below about 80 cm, based on the glacial-age soils in the project area. The UTM coordinates along CSAH 77 for the survey area are the following: E395800 N5145630 for the south end and E396355 N5151345 for the north end (1983 Datum, UTM Zone 15). Land ownership included state owned right-of-way along CSAH 77 and privately owned lands adjacent to the ROW that were being acquired for the project.

1.4 Curation

Copies of project documentation are on file at the FCRS office in Boyceville, Wisconsin. Project documentation and artifacts will be curated at the Minnesota Historical Society (MHS).

1.5 Permit and License

The Phase I archaeological survey was conducted under Minnesota Office of State Archaeologist (OSA) permit 14-038. Phase II evaluations at all the sites were conducted under OSA permits 14-069 and 14-071. A copy of the permits is in Appendix A.

1.6 Dating Format

Dates in this report are presented in two formats: 1) by their conventional radiocarbon age (uncalibrated) and 2) as calibrated to actual calendar years. The conventional radiocarbon age (measured radiocarbon age corrected for isotopic fractionation) is presented in the format of "RCYBP" (radiocarbon years before present; with "present" by convention being AD 1950). The use of "RCYBP" dates allows for the consistent comparison of dates from sites in previous reports, as this format has been the standard. Radiocarbon dates from older reports may not have been corrected for isotopic fractionation, but this correction is typically small. Dates calibrated to actual calendar years use the convention "cal BP" (for example cal. 8000 BP) to distinguish them from uncalibrated dates (RCYBP).

For various technical reasons, radiocarbon years are not equal to calendar years, and therefore calibration is necessary to assess the actual age of a sample. Radiocarbon years are converted to calendar years by a process called calibration. This process is based on dating samples with a precisely known age, such as wood that can be dated to a calendar year by tree-ring counts. These dates reveal systematic variations between radiocarbon years and calendar years, and allow the statistical estimation of actual calendar age for any given radiocarbon date. Generally speaking, conventional dates back to about 3000 RCYBP will be close to the actual calendar (calibrated) age, but beyond that the calendar age becomes progressively older than the radiocarbon age. A date of 2000 RCYBP, for example, indicates an age of close to 2,000 calendar years ago, while a date of 10,000 RCYBP indicates a calendar age (calibrated date) of closer to 11,500 years ago.

1.7 Personnel for Lab and Report Tasks

Frank Florin authored all sections of this report, except where noted otherwise. He was also the lab supervisor and conducted the lithic artifact analysis. Beth Wergin was the lab manager, and she cataloged artifacts, prepared data tables, and drafted the wall profile illustrations for the report. James Lindbeck conducted background research, edited the report, and authored the Culture History section and portions of the Environmental Background and Literature Search sections of the report. Kent Bakken wrote the section on Lithic Raw Material Resource Base. Mike Bradford assisted with the FCR analysis and artifact data entry. Zooarchaeologist, Katherine Stevenson, at the Mississippi Valley Archaeology Center (MVAC) was retained to conduct the faunal analysis. Connie Arzigian of MVAC conducted the botanical analysis.

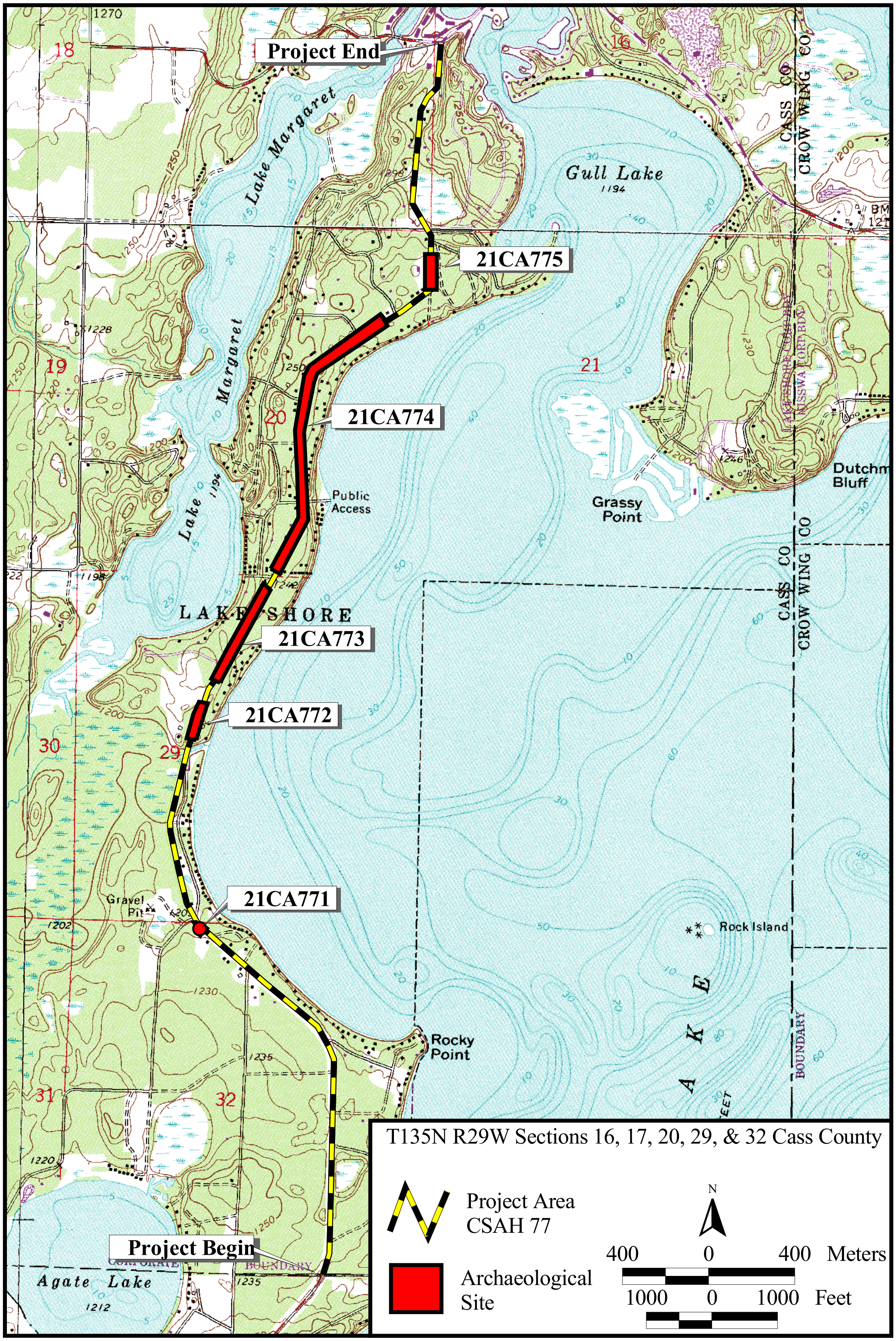


Figure 1. Location of CSAH 77 Project Area and Archaeological Sites on USGS 7.5' Quadrangles.

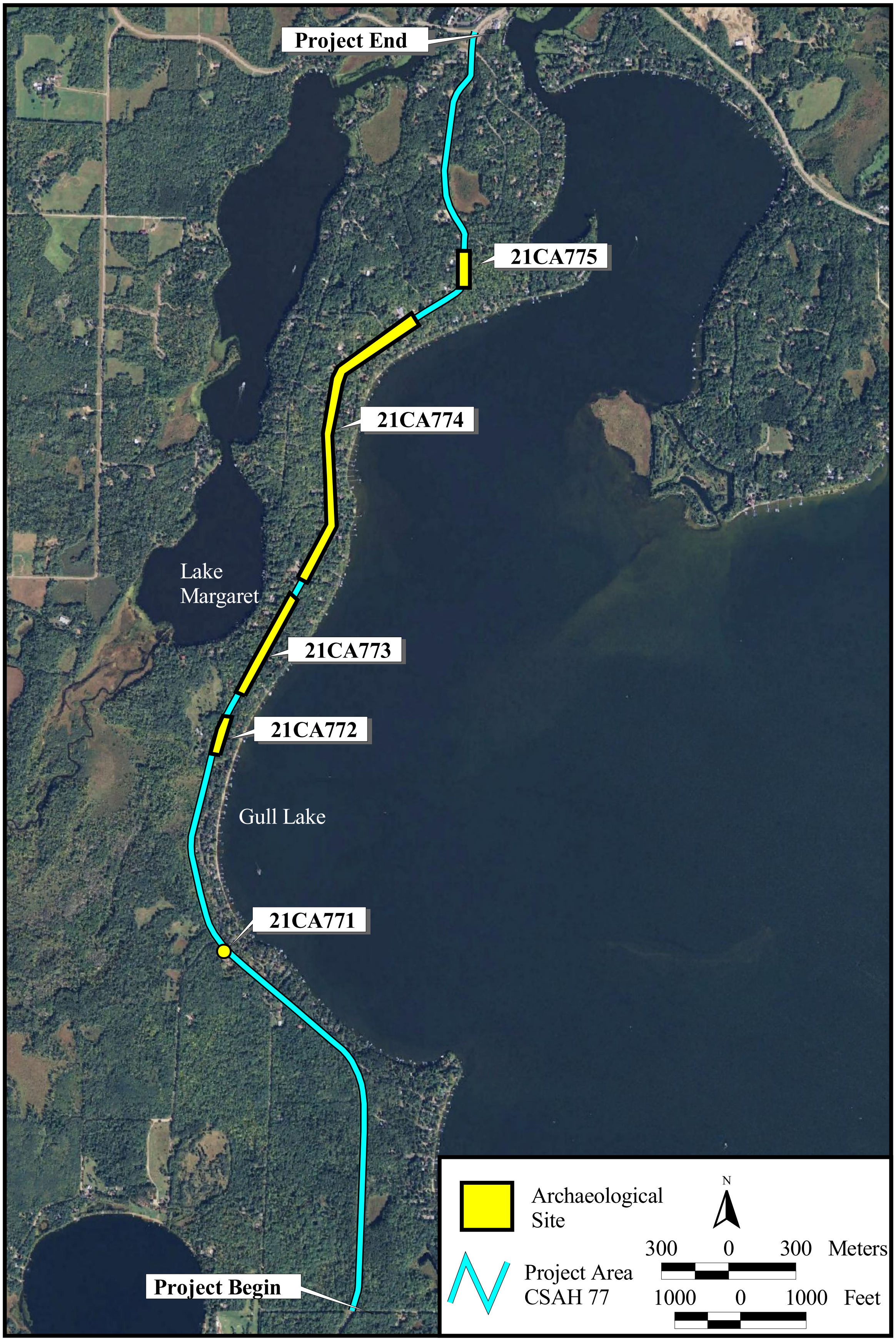


Figure 2. Location of CSAH 77 Survey Area and Archaeology Sites on Air Imagery.

2. RESEARCH DESIGN

2.1 Objectives

There are several objectives of the Phase I archaeological survey and Phase II site evaluations: 1) to aid project sponsors in complying with Section 106 of the National Historic Preservation Act and 36 CFR 800: Protection of Historic Properties; 2) to identify archaeological sites and assess their eligibility for listing on the National Register of Historic Places (NRHP); 3) to aid in project planning; and 4) to produce a report documenting the archaeological investigations.

2.2 Aspects of the Research Design

The research design was developed to meet project objectives, and it adhered to the research and field method guidelines established by the Minnesota Historic Preservation Office (MnHPO), OSA, and MnDOT. These methods, which included a literature search, fieldwork, analysis of data, and production of a technical report, are summarized below and discussed in greater detail in the following sections.

The literature search provided information on previous investigations, previously recorded sites, potential cultural resources depicted on historic maps, and the environmental setting.

Archaeological fieldwork included pedestrian survey, shovel tests, and excavation units (XUs). Pedestrian survey was used to identify artifacts or archaeological remains that were present on the ground surface. Shovel tests were used to identify artifacts that were present below the ground surface, characterize soils at the survey areas and archaeological sites, and provide information on the horizontal and vertical provenience of artifacts. XUs were used to recover artifacts, provide detailed information on artifact provenience and cultural stratigraphy, identify cultural features, assess site integrity, and provide exposures of soil profiles at the sites. Specific details of the field methods are presented in Section 3.

The analysis of artifacts was conducted using current methods appropriate to each artifact class. The analysis was oriented towards identifying specific attributes that would provide useful information for interpreting the function and historic context of the site. Specific analytical methods for each artifact class are discussed in detail in Section 4.

The report documents the results of research, fieldwork, and artifact analysis and provides interpretations of the data and recommendations for the sites and project.

2.3 Eligibility Criteria and Historic Contexts

Recommendations for the NRHP eligibility of sites identified for this project are based on the National Register Criteria in 36 CFR Part 60.1 guidelines established by the National Park Service (1991) and Minnesota contexts for the Archaic period, Woodland period, and lithic scatters (Anfinson 1994; Arzigian 2008; Dobbs 1988; Gibbon and Anfinson 2008). Archaeological sites that retain integrity may be eligible for the National Register under the following criterion:

A. if they are associated with events that have made a significant contribution to the broad patterns of our history; or

B. if they are associated with the lives of persons significant in our past; or

C. if they embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. if they have yielded, or may be likely to yield, information important in prehistory or history.

Integrity is comprised of seven aspects that include: location, design, setting, materials, workmanship, feeling, and association. Several of these aspects must be possessed for a property to retain sufficient integrity for listing on the NRHP. The three aspects of integrity that are specifically relevant to archaeological sites are location, materials, and association. NRHP Criteria A, B, and C do not apply to the precontact sites identified for this project. The precontact components and sites were evaluated for their NRHP eligibility under Criterion D.

Specific historic contexts for the precontact period in Minnesota have been developed to summarize the extent of knowledge for each context and provide a framework to aid in determining whether a site has the potential to yield information that is considered important to local and regional prehistory. These contexts propose specific research questions and themes that are specifically relevant to each context. In order for the sites to be eligible for the NRHP under Criterion D, they must retain integrity and contain the potential to provide information on relevant research questions and themes that are applicable to the specific historic contexts present at the sites. These historic contexts are discussed in detail below.

2.3.1 Archaic Period Contexts

Two sites date to the Middle and Late Archaic periods. Site 21CA772 had a Table Rock point, four radiocarbon dates of ca. 5800 RCYBP (cal. 6700 BP), and another date of ca. 4950 RCYBP (cal. 5670 BP). Site 21CA773 had a radiocarbon date of ca. 3900 RCYBP (cal. 4500 BP). Historic contexts and basic research questions for the Middle and Late Archaic periods have been developed and are presented together here because of the overlapping and similar research themes (Anfinson 1997; Dobbs 1988; Gibbon and Anfinson 2008). The very sparse and limited knowledge of this period requires addressing basic research questions about this culturally and environmentally dynamic period. Based on a review of Archaic contexts, several basic research questions are proposed for the sites.

<u>Basic Research Themes and Questions</u>

- What are the ages of the components at the site, and how do they fit within the established chronology of the region?
- What specific complexes are present at the site, and how do these complexes relate to previously defined complexes in the region?
- What are the functions of the various components at the site and what activities occurred at the site?
- What are the diagnostic artifact types (especially spear and dart points) from the components at the site, and are they similar to named types elsewhere or are there unique types in Minnesota or regional variants of named types in the state?

- What are the contents of the artifact assemblages from the components? Are specific kinds of artifacts, features, and site types associated with these assemblages?

- What were the lifeways, subsistence strategies, and settlement patterns during the Archaic period in the region? How did they change through time? To what extent were they similar or dissimilar to contemporary lifeways in adjacent areas?

- What internal developments, changes, and adaptations occurred during the Archaic period and how do these relate to environmental changes occurring at that time?

- What types of lithic technology were employed?

- What is the pattern of lithic material use and is there evidence for interaction and trade with other cultural groups from the Plains or Woodlands? How were exotic raw materials (e.g., stone) procured?

- What is the geomorphic context of the components, and what site-specific environmental changes have occurred with respect to alluviation, soil formation, and site formation processes?

2.3.2 Woodland Period Contexts

Sites 21CA771, 21CA772, and 21CA774 have components from the Initial and Terminal Woodland periods. Historic contexts for the Woodland period were initially developed by Dobbs (1988). Updated contexts have been prepared for the National Register of Historic Places Multiple Property Documentation Form (Arzigian 2008). Specific Woodland tradition research themes for the Brainerd and Psinomani components at sites 21CA771, 21CA772, and 21CA774 are presented in the following sections. Primary statewide Woodland Tradition research themes that are relevant to the sites are presented below (Arzigian 2008).

Primary Statewide Woodland Research Themes

- *Chronology*
  A fundamental need for understanding Minnesota's Woodland complexes is an adequate chronology, including absolute dates for the full span of each complex, but particularly for the beginning and end, as well as charting important changes within the complex.

- *Technology and Material Culture*
  Besides identifying diagnostic artifacts, the full range of material culture for each complex needs to be described. In addition to artifacts typically considered diagnostic, such as rim sherds and projectile points, can other region- or complex-specific cultural items be identified, such as unique pottery designs, bone tools, or patterns of raw material use?

- *Ceramics*
  Ceramics provide the most sensitive chronological and regional marker for a complex, but many of the typologies are inadequate or outdated. There is a need for refining and updating existing ceramic typologies, developing a better understanding of spatial distribution and regional and temporal variations for ceramics, and conducting detailed attribute analysis. Changes through time and across regions need to be explored. Comparisons also are needed between ceramic types used in Minnesota and those used in nearby regions (for example, how are Late Woodland corded ceramics in the southern part of the state related to the corded-

ware horizon found across the Midwest?). Variability within many types of ceramics seems to be great but is also poorly understood. Single-component sites or separable components within stratified sites are needed to identify the range of contemporary ceramic types and varieties and how they change through time. Attribute analysis could generate a database of ceramic characteristics that could be analyzed statistically and modeled in GIS.

Ceramic manufacturing processes and vessel function are in general also poorly known. More detailed technological study of ceramics (e.g., paste, temper) could improve understanding, as could thin-section analysis, X-ray florescence, and diffraction, which can help to identify mineralogical and elemental composition and differentiate locally made vs. imported pottery.

- *Lithics*
  Much more information is needed on the full range of Woodland lithic artifacts, both tools and manufacturing debris, and the raw materials used, both local and exotic. Lithic typologies need to be refined and their associations with cultural complexes verified. Trait comparison to Archaic, Middle Woodland, and Plains types is essential for distinguishing the points from those of other periods and regions, or for confirming that they are all part of a homogeneous complex. Any temporal changes or specific geographic distributions would be useful.

  Lithic tools and debris need to be studied in terms of function, lithic reduction sequences, tool manufacturing, raw material selection, and changes through time in all of these. Can raw material debris profiles be developed to characterize these sites, and possibly to date them even if ceramics are not present? Single-component sites or multicomponent sites with a horizontally or vertically separate component are needed for this research.

  More work is needed on the accurate identification of specific lithic sources, and on documentation of changes in the use of particular raw materials through time and space, and for different tool types. Existing collections might then need to be reexamined, and implications drawn for understanding trade and interaction with other regions. Additional data could help to answer questions related to lithic technology and raw-material acquisition and how those might have changed through time.

  Further analysis is needed to identify any differences in lithic assemblages (tools, raw materials, etc.) between sites associated with mound construction and other habitation sites, between complexes in different areas, and between sites with different activities represented. What was the effect of the bow and arrow on the rest of the technological tool kit and on hunting practices, settlement, etc.? Where and when was bipolar core technology used?

- *Subsistence*
  More detailed information on subsistence is needed for all Woodland complexes in Minnesota. Additional sites with larger samples of subsistence remains are needed from a variety of habitats. Systematic fine-scale recovery from Woodland sites is needed, including flotation to recover plant and animal remains, fine lithic debris, and other small artifacts. Also needed are specialized analyses of these remains, not just superficial analyses such as sorting fauna by class (e.g., fish vs. mammal).

  Interpreting the variety of faunal taxa in terms of habitat selection and seasonal availability will be essential to understanding the whole Woodland seasonal round. Extractive strategies must be examined at the site, local area, and regional scales, including changes through time.

Patterns will need to be considered with regard to both variable exploitative strategy and taphonomic changes, such as changes in patterns of transport, processing, and/or disposal of animals, and the final deposition of their remains.

Floral analyses need to include wood charcoal as a reflection of both the environment and cultural practices, as well as recovery and identification of macroplant remains such as seeds and nuts, and phytolith and pollen studies. Ceramics can be analyzed for evidence of phytoliths and pollen. Infrared spectrometry and gas chromatography can investigate cooking residues and fatty acids from products cooked in vessels, to identify how the vessels were used and what foods were consumed. The role of wild rice in precontact cultures is a crucial question. When was wild rice first used, and when did it become a prominent part of the economy? How did the use of other resources change? Are there special precontact features used to process wild rice? If so, can they be clearly identified, and can they be distinguished from postcontact ricing features? What cultivated plants were used by Woodland tradition populations in Minnesota? How did the northern limits of corn agriculture change through time? When did corn first appear in various regions? How did people exploit different resources as part of the broader annual round?

In addition to wild rice, where, when, and how were important specialized resources exploited, such as bison or sturgeon? Were sturgeon fisheries occupied for large parts of the year, or only for short periods? What was the nature of bison hunting in various regions, how did it relate to overall way of life, and how did it change through time (including in relation to environmental changes)? Were groups making use of seasonal bison hunts? Which groups, and at what times? Did some groups travel from one region to another as part of a large-scale seasonal round? Was there exchange of bison meat and products, and if so, with whom and in return for what?

- *Geographic Distribution*
  The boundaries and geographic distribution of individual complexes are poorly known, and the bases on which they were defined are often not explicit.

- *Modeling (i.e., Mn/Model)*
  Modeling could identify locations along rivers (such as trade routes) that share the characteristics of a complex, to target future field investigations. GIS can be used for site catchment analysis to suggest what resources might have been exploited at individual sites, and how this compares between sites across regions. Site function within the complex's settlement system can be suggested, and multiple alternative explanations for site location and site function proposed and evaluated. How were ecotones exploited? In particular, what were the effects of the prairie/forest ecotone (and possible changes in this ecotone) on subsistence and settlement systems and movement of peoples across the ecotone? Did some areas, such as ecotonal areas, serve as central points, or trading or culture hubs? Were there regions that were transitional between a number of distinct complexes, and that would have made exposure to or intermarriage with other cultural groups more likely? Evidence of distribution of ceramics or raw materials between different groups might document such patterns of interaction.

  What effects did human subsistence and settlement systems have on the environment, including the prairie/forest ecotone? Were people using fires to maintain ecotonal and prairie habitats? Is there evidence of extensive areas of burning (such as in cores obtained from lakes or rivers)? Or evidence of natural resources that are dependent on fire, such as varieties of wood, plants, or animals?

- *Regional Interaction*
  Research is needed into the full range of interregional interactions within and between peoples of contemporary cultures or complexes, as well as the relationships that helped to shape changes in cultures through time.

- *Defining the Complexes*
  Finally, after evaluation of the research themes, the definition of each complex needs to be refined. Additional dating and understanding of the regional distribution and changes through time, as well as the relationships to other complexes and other regional populations, will facilitate development of meaningful archaeological phases.

2.3.3 Brainerd Complex: Early Woodland in Central and Northern Minnesota, 1000 B.C.–A.D. 400

Sites 21CA771 and 21CA774 yielded Brainerd ceramics. Arzigian (2008:19) summarizes the Brainerd complex as follows:

> The Brainerd complex is identified by Brainerd ceramics that have two distinct types of surface treatment, net impressions or horizontal cord marking, and might represent the earliest pottery in central and northern Minnesota. The temporal placement of Brainerd ware is controversial, with a series of radiometric dates on ceramic residues giving distinctly older dates than previously expected. Associated projectile points include stemmed and side-notched points that are similar to Oxbow, McKean complex, and Pelican Lake styles and show similarities to preceding Archaic points and to northern Plains Woodland types. Raw materials reflect use of both local and western sources, and additional distinctive lithics include scrapers and rectangular chisels or wedges.
>
> Other aspects of the complex are poorly known. Little subsistence information exists, except for phytoliths recovered from residues on sherds, and faunal and floral remains from a few sites with separable components. These materials reflect hunting of medium-sized and large mammals and collection of a wide range of plant foods, including starchy seeds, fruits, and nuts. The underlying adaptation has been proposed to be basically Archaic, with the addition of pottery. Burials occur either in mounds or as nonmound burials. Hohman-Caine and Goltz (1995a) have proposed the name Elk Lake for the complex associated with the makers of Brainerd ceramics.

Specific research questions proposed by Arzigian (2008) for the Brainerd complex are summarized below.

- *Chronology*
  The primary question to be resolved with Brainerd is dating - Is Brainerd really as old as the dates on ceramic residues suggest? If so, it becomes one of the earliest Woodland manifestations in the Midwest and takes on critical importance for our understanding of the transition between the Archaic and Woodland traditions. However, the existing dates are problematic. The earliest are significantly older than those associated with other Early Woodland ceramics, but the latest dates extend into the Middle Woodland period, producing a range of over 1,500 years for a ceramic type that shows only minimal changes during this

period. Careful evaluation of the residue dates should be undertaken, as has been done recently for some residue dates from New York, Pennsylvania, Michigan, Wisconsin, and Kentucky (Hart and Lovis 2007). The “reservoir effect” should be specifically evaluated to see whether residues have been affected either by local groundwater or by fish from those waters that have incorporated old carbon. Both possibilities have been suggested by Mulholland et al. (1997:61), Gonsior et al. (1999:6.37), and others, although Hart and Lovis found no effect in their samples. Are residue dates affected by the geographic source of the residue? Areas such as northeastern Minnesota with granites, igneous rocks, and non-calcareous till might be less likely to generate groundwater with old carbon than areas with limestone bedrock or calcareous till. Plotting the geographic distribution of the dates to see how they cluster might reveal patterns associated with bedrock or parent material. Alternatively, was there contamination from the ceramic paste in the pot if residues were removed with some paste adhering to or incorporated into residues in the cooking process? Multiple additional dates are needed from single-component sites (or from confirmed Brainerd features) from both residue and non-residue samples, to confirm dating, to confirm the very long time frame reported for the complex, and to further test the hypothesis that there is a significant difference between residue and standard charcoal dates. The range of dates from an apparently single-component site should be examined to test the reliability of dates. Finally, any evidence of stratigraphy needs to be carefully examined in light of the new dates to see if more refined interpretations can be generated.

- *The Brainerd Complex Beyond Ceramics*
  Most Brainerd pottery seems to occur at sites that also have other ceramic wares, making it difficult to determine the nature of the Brainerd complex beyond its ceramics. Are there changes in lithic tools, raw material usage, or lithic debris profiles during this period? What subsistence strategies are operating? How do they differ from Archaic sites? Single-component sites or spatially separable components at multicomponent sites are needed to evaluate the rest of the complex.

- *Ceramics*
  If Brainerd is actually as early as the dates indicate, then some differences in technology should be apparent between the Brainerd sherds and others at a site, beyond differences in decorative technique and surface treatment. Even if the same local clay sources were used, some manufacturing differences should exist, particularly if Brainerd is the earliest pottery and people were just learning what to do with the clay. Hohman-Caine and Goltz (1995a) emphasize Brainerd’s distinctiveness in their description of paste and manufacturing techniques, which they see as different from those of later ceramics. Thin-section analysis, spectrographic analysis of temper and paste characteristics, and study of other unique signatures of ceramics (clay source, temper types, firing temperatures, etc.) might be useful for comparing Brainerd with other sherds from the same sites, as well as comparing Brainerd sherds from multiple sites. If a widespread, consistent manufacturing pattern existed, there should be greater similarity within the Brainerd sherds, and greater differences between Brainerd and those of later non-Brainerd occupations. If Brainerd and later sherds within one site are more similar, this would suggest more contemporaneity of Brainerd with other later pottery types.

2.3.4 Psinomani Complex: Late [Terminal] Woodland, Protohistoric, and Early Historic in Northern and Central Minnesota, A.D. 1100–1750

Site 21CA772 yielded Ogechie ceramics that are associated with the Psinomani complex, which Arzigian (2008:126) summarizes as follows:

> "The Psinomani complex represents Late [Terminal] Woodland, Protohistoric, and Early Historic in northern and central Minnesota, A.D. 1100–1750. It is the most recent precontact archaeological complex in central and northern Minnesota, following the Central Minnesota Transitional Woodland and Blackduck-Kathio complexes. Peoples associated with the Psinomani complex entered into the protohistoric and early historic era as Siouan-speaking cultures. "Psinomani" is an archaeological complex, not a ceramic series, and it is not coterminous with its most characteristic ceramic ware, Sandy Lake. Although most components assigned to this complex contain Sandy Lake ware, there are some that lack this pottery. Located north of the limits of successful corn agriculture, the Psinomani complex is named for the Dakota word for "wild rice gatherers." At Mille Lacs, one of the major concentrations of Psinomani sites, the complex has been linked to the historic Mdewakanton Dakota. Psinomani material culture is marked by small triangular points, Sandy Lake grit- and shell-tempered ceramics and, in some areas, Ogechie ceramics, a locally made variant of Orr phase Oneota pottery.
>
> The Psinomani complex shows interaction (movement of people, goods, ideas, or a combination of these and other processes) with neighboring cultures, including Oneota farming communities to the south and east and Plains Village peoples to the west, crossing the prairie-forest ecotone. Psinomani peoples gathered wild rice, hunted bison and other mammals, and utilized fish and other resources from lakes and rivers. The Psinomani subsistence/settlement system might have made use of large areas of forest, ecotone, and prairie, with trade or other connections to the west for seasonal bison hunts and into North Dakota for Knife River flint and other resources. Sites along lakes such as Mille Lacs were seasonally occupied for the wild rice harvest and might have been occupied full time by at least some of the population. Although Psinomani peoples might have traded for corn at some sites, there is no evidence that they grew corn or stored it in the deep storage pits typical of Oneota or Plains Village sites. Psinomani peoples buried their dead in nonmound contexts and also in mounds, including as intrusive burials, as late as the seventeenth century; both primary flexed and primary disarticulated burials are present."

Specific research questions proposed by Arzigian (2008) for the Psinomani complex are summarized below.

- *Origins of Psinomani*
  The origins of the Psinomani complex and Sandy Lake ceramics are poorly understood. From current research it looks as though Psinomani overlaps at least Blackduck, but the nature of this transition or replacement is still unclear and is in need of further study. Additional radiometric dates are needed in tight association with both early Psinomani components and later components of the other complexes. As Anfinson and Dobbs (1994) have asked, "Does the appearance of Sandy Lake and the disappearance of antecedent cultures and/or ceramic types represent succession or evolution of different archaeological cultures, or does this represent displacement of one population group by another?" Do these ceramics really represent a movement of new people into the area, replacing the Rainy River Late

Woodland/Blackduck people or living beside them? If there was a movement into an area, then presumably the lithics on these initial Psinomani sites might represent a profile more similar to that of another area. With time, one might expect Psinomani sites to become more similar to the earlier pattern, if the earlier Rainy River and Blackduck lithics were largely of local origin. The same could apply to the pottery. Physical methods such as neutron activation analysis might show a trend through time in Psinomani pottery in a given area, reflecting a reduction in the number of vessels brought with the group vs. those made from local clays.

- *Relationships Between Psinomani and Neighboring Complexes*
  Psinomani emerged within the period of post- Mississippian influence in Minnesota, including both Oneota and the Middle Missouri tradition of Plains Village cultures. What are the chronological parameters and relationships of these cultures in Minnesota? Was Psinomani a function of Mississippian influence? At sites such as Mooney, Sandy Lake pottery and Plains Village wares overlap. Does this pattern indicate two contemporaneous groups of people interacting, one culture evolving into the other, or one community making multiple ceramic wares? What kinds of Psinomani artifacts are found at sites of other complexes, and vice versa? What kinds of resources, people, and ideas were being exchanged? Where were the trade routes (based on exotics and other resources)? What was the relationship between sites in the Red River drainage and those farther east, including at Mille Lacs? Were these sites part of one settlement system, with people moving between the two areas seasonally? Or do they represent two separate cultural systems or ethnic groups? Potential avenues of study include lithic raw material sources, ceramic clays, ceramic decorative motifs, and other ceramic attributes. Movement of corn, wild rice, and bison might be traceable. It is likely that at least some additional Ogechie ceramics exist but have been classified as Oneota or local variants of Oneota. Anfinson and Dobbs (1994) report that a few Sandy Lake sherds have been found at the Bryan site, a Mississippian site in Red Wing. A closer examination of “Oneota” and Plains Village ceramics at sites that also have Sandy Lake pottery could aid in evaluating relationships. Likewise, are any Sandy Lake sherds found at contemporaneous Oneota sites, as is the case at the Plains Village Shea site in eastern North Dakota (Michlovic and Schneider 1993)?

- *Historical Connections*
  Does Psinomani represent proto-Siouan speaking peoples, as suggested by the participants at a Lake Superior Basin Workshop (Participants 1988)? What specific connections can be made with particular Siouan groups? What was the nature of the interactions between Native peoples and early Europeans? What cultural changes did the Dakota undergo during the early postcontact era, including the conflict with the Ojibwe and the final abandonment of the Mille Lacs area? Did access to copper, brass, iron, and other trade items have an effect on Native stone, bone, and ceramic technologies? Given the geographic extent of Psinomani, and more broadly of Sandy Lake ceramics, how does the historical connection vary across the region? Are the people proto-Assinboine, proto–Eastern Dakota, or both, depending on the region under consideration? If the Psinomani at Mille Lacs are connected to the Mdewakanton Dakota, what connections can be made for groups in the Mississippi Headwaters or the Red River valley? DNA studies of human remains from historic and precontact populations might be useful in this regard. In addition, study of early Euro-American contact sites might show what aspects of Psinomani culture were changed by contact.

- *Ceramics*
  There is a need for developing a better understanding of the spatial distribution and regional and temporal variations for Sandy Lake and St. Croix, Onamia, Selkirk, and Blackduck

pottery, along with detailed attribute analysis. The occurrence of different tempers in Sandy Lake pottery needs to be explored for its temporal, regional, technological, and social implications. Likewise, variation in surface treatment needs to be examined. Bakken (1994:71) notes the wide range of variation in cordmarking, including some fine or indistinct patterning that might be confused with fabric impressions, and also wonders whether the type of cordmarking might have chronological significance. What is the relationship to check-stamped ceramics (after Birk 1977a:32)? Is stamped surface treatment exclusive to Sandy Lake? Such research might also allow better attribution of undecorated body sherds to type. Currently, most researchers seem to attribute undecorated, cord-roughened body sherds to Sandy Lake only when the sherds are shell tempered.

- *Dating Houses and Features*
  Another major research topic would involve reanalysis of diagnostic artifacts and their contexts to precisely (or at least better) date potential house structures, different feature types such as jig pits, and other features and to attempt to verify or correct interpretations made to date. Some generalizations about feature types and house structures have been presented, but it is difficult to identify the original archaeological records that led to such interpretations. In at least one case, Elden Johnson (1984:12) clearly noted that there was no definitive archaeological evidence for his argument that a shift from diffuse to focal adaptation was due to a system of drying, parching, and storing wild rice. Yet, this interpretation is often repeated as if it is well documented. The Old Shakopee Bridge site (21ML20) had a series of ricing jigs, but Gibbon (1976) refused to attribute them to a specific occupation and described his tentative attributions as "clearly unsatisfactory" (1976:25). Yet, Gibbon's reluctant suggestions have been repeated as if they were definitive identifications of features and a house structure. Other features at Psinomani sites need to be examined more carefully in terms of both age and function. For example, how old are palisades, and what other evidence of conflict is present? Other key research questions deal with the processing and storage of wild rice. It remains unclear when specialized "ricing jigs" began to be used, how wild rice fit within the rest of the harvesting economy, and what if any changes occurred in the rest of the complex with wild rice processing and exploitation. Contemporary Oneota sites, such as those at La Crosse, Wisconsin, have abundant wild rice along with corn, but no specialized wild rice processing pits have been identified (Arzigian 1989). A comparison of historic Dakota and Ojibwe wild-ricing practices could help identify potential attributes for distinguishing postcontact from precontact features. Are there any storage pits at Psinomani sites, as is the case at Oneota and Plains Village sites? What are the general sizes of pit features that do exist? Can the pits be identified as to function? The historic record might also offer pertinent information—for instance, Johnson (1971b:19) suggested, based on the historic record, that wild rice was stored in the rafters, so that no deep storage pits were needed. The University of Minnesota's site collections from Mille Lacs offer vast amounts of information that have not been fully studied and interpreted. Although many of these sites are stratigraphically mixed, specific features might be datable, along with their associated subsistence remains and artifacts. Until reports of the excavations are completed, much of what has been said remains speculative in nature. A modest effort should be initiated to determine whether the current records and collections remain reasonably intact and if so, whether they can be used productively to write a site report or reports that clearly describe what was excavated and where, describe any features located, and associate artifacts with any features or excavation units.

- *Models of Social Complexity*
  Testing Gibbon's model of increasing social complexity would be a useful area of future research, though it would require information from a large number of sites, not single sites.

To test this model, it would be helpful to compare the types of sites in the central clusters as well as those dispersed between them. Are there differences in size, range of activities, seasonality, structures, features, etc. between sites? How do these compare to earlier Blackduck-Kathio sites in the same region and to contemporary Rainy River Late Woodland sites to the north? If Psinomani reflects a more complex social organization, there should be differences in settlement patterns, interregional and intersite connections, and other facets of the cultures. There should also be evidence of conflict, both between Psinomani communities and with other groups. Such evidence might include fortifications as seen with some Oneota and Plains Village sites. The distribution of exotic and specific local lithic raw materials might help document access to particular resource areas, which might reflect associated villages.

2.3.5 Lithic Scatter Thematic Context

All sites (21CA771, 21CA772, 21CA773, 21CA774, and 21CA775) were evaluated under the Lithic Scatter Thematic Context, as some or all of the sites likely contain components for which specific historic contexts are undetermined because of a lack of diagnostic artifacts and radiocarbon dates. In order for a lithic scatter site to be eligible for the NRHP, it must retain integrity and exhibit one or more of the following characteristics (Anfinson 1994):

- The site must have a demonstrated historic context association.
- The site must contain unusual raw materials.
- The site must be in an unusual regional location.
- The site must suggest an exceptional special use.
- The site must be of an exceptional size (greater than 100,000 square meters).
- The site must have an exceptional density of material (one artifact per square meter or more on the surface; 100 artifacts or more per square meter in formal units).

2.3.6 General Precontact Period Research Themes

All sites (21CA771, 21CA772, 21CA773, 21CA774, and 21CA775) were evaluated under General Precontact Research themes, as some or all of the sites likely contain components for which specific historic contexts are undetermined because of a lack of diagnostic artifacts and radiocarbon dates. General research themes related to nearly all precontact periods in Minnesota are outlined below (Arzigian 2008; Dobbs ca. 1988). These general research themes provide a framework to aid in determining if a site has the potential to yield important historical information. They are of a general nature, given the lack of knowledge for most precontact periods throughout the state. The research themes include the following:

- Site setting, type, and function
- Chronology and temporal relationships
- Site distributions and settlement patterns
- Subsistence and seasonality
- Human ecology and environment
- Lithic raw material procurement
- Lithic technology
- Trade and regional interaction
- Site formation processes
- Internal site structure and behavior

3. Archaeological Field Methods

3.1 Archaeological Field Methods

The Phase I archaeological survey methods adhered to the MnHPO and OSA guidelines for archaeological fieldwork. Specific field methods were discussed with MnDOT prior to conducting fieldwork. The survey design included an archaeological survey for the entire project APE.

3.1.1 Pedestrian Survey

The goal of the pedestrian survey was to identify and record archaeological sites that could be observed on the ground surface. Pedestrian survey was conducted within the entire survey area by walking transects parallel to the roadway in intervals not exceeding five meters. The only areas excluded from pedestrian survey were areas of wetland with standing water. The pedestrian survey was a practical method for identifying certain types of potential archaeological resources that could be observed on the surface, such as pits, earthworks, or historical foundations. No resources were identified during pedestrian survey.

3.1.2 Shovel Tests

Shovel testing was used to identify artifacts and features not visible on the ground surface, characterize soils at survey areas and sites, and provide information on the horizontal and vertical provenience of artifacts at the sites.

Because the survey area has high archaeological site potential, Phase I shovel testing was typically conducted at 15-meter intervals, although the testing interval was adjusted for the numerous driveways that intersect the survey area. Testing was not conducted or the test interval was modified if the survey area was ditched, cut away during previous road construction, a filled wetland, excessively sloping, or had subsurface disturbances. Shovel test transects were placed parallel to the roadway. Shovel tests were numbered consecutively going south to north, with Shovel Test 1E at the south end on the east side of CSAH 77 and Shovel Test 1W at the south end on the west side.

Close-interval shovel testing was conducted at all archaeological sites, typically at five-meter intervals in cardinal directions adjacent to positive shovel tests in order to assess site integrity, limits, and artifact density. Shovel test data was used to guide the placement of excavation units to portions of the site that had the highest potential to yield data for answering important research questions and evaluating the site.

Shovel tests were 35 to 40 cm in diameter and generally dug to 85 cmbs. Soils were typically dug and screened in 20 to 30 cm increments to provide vertical control of artifact provenience. All soil was screened through 1/4-inch hardware mesh. The field crew returned all excavated soil to each shovel test upon completion. All shovel test locations were recorded with a GPS unit.

3.1.3 Excavation Units (XUs)

XUs were typically 1-x-1 meter in size, although some 1-x-0.5 meter units were dug at site 21CA772. XUs were dug and recorded in 10-cm levels below surface (cmbs), except for XUs 1 and 2 at site 21CA773, which were dug below an arbitrary datum established about 10 cm above the surface. Excavation was conducted by shovel skimming in one to two-cm increments. Excavation extended below the primary artifact bearing deposits to culturally sterile soil or to a depth where artifact counts were negligible. In some units, artifacts were found to have a very broad vertical distribution, extending down to 90 cmbs. Artifacts from the deepest levels were likely translocated by natural processes and are not in-situ. The extent and types of soil disturbance were recorded for each level to aid in assessing site integrity. All soil was screened through 1/4-inch hardware mesh. The units were backfilled after excavation was complete.

3.1.4 GPS Data Collection and Site Mapping in ArcView

GPS data was collected with a Trimble GeoExplorer 6000 for all shovel tests and XUs. The data typically has a positional accuracy of 10 to 25 cm after post-processing. This data was then exported as northing and easting UTM coordinates to create maps on topographic and aerial imagery.

3.1.5 Field Documentation

A record of daily activities was recorded in a log that documented fieldwork and relevant information on the survey areas and sites. Project design maps provided by MnDOT were used as a base maps for recording project information. Photographs were taken of archaeological sites, survey areas, and wall profiles of the XUs. A record of the photographs was maintained in a project photo log.

Excavation level forms were maintained for each level of an XU and were filled out after the completion of each level. These forms contained information on excavation methods, soils, artifact counts, disturbances, and other relevant observations.

A soil profile was drawn for representative shovel tests and for each positive shovel test and XU. Soil colors, textures, horizons, and disturbances were recorded on the profile. Soil colors were described using the Munsell system, and the soils were moistened prior to determining color.

4. Archaeological Lab Methods

4.1 Artifact Processing

Artifacts were analyzed and cataloged at the FCRS laboratory in Boyceville, Wisconsin. The precontact period assemblage consisted of ceramics, lithic debris, stone tools, faunal remains, and fire-cracked rock (FCR). Artifact catalog numbers are comprised of a provenience bag number and a specimen number, following the MHS system. The provenience bag number is represented in the catalog database by the column titled “Prov.”, and the specimen number is represented by the column titled “Specimen #”. The artifact catalogs for the sites are contained in Appendix B.

Provenience bag numbers were established by FCRS in the lab and consisted of a unique number assigned to each specific provenience by find spot (FS), shovel test (ST), or excavation unit (XU) by depth (“cmbs” for cm below surface). For example, Prov # 1 would represent Shovel Test 1 (ST 1), 0-20 cmbs, and Prov # 2 would represent ST 1, 20-40 cmbs. The specimen portion of the artifact catalog number is a unique sequential number or number range assigned to artifacts within a specific provenience bag number. Individual artifacts were assigned a single number (e.g., 1.1), while artifacts with similar attributes and size grades were grouped together and assigned a sequential specimen number range based on their count (e.g., 1.2-10). Beginning and ending numbers in the range were recorded in one row of the database with attribute data for related artifacts.

Attribute data recorded in the catalog for each artifact, or group of artifacts, included: site number; provenience bag number; specimen number(s); provenience information; artifact class; artifact descriptions; weight (g); and size grade (in). Additional artifact information was entered in the “Notes” field of the catalog. The descriptive categories that apply to each artifact class are summarized in Table 1. Specific descriptive attributes recorded for each artifact class are discussed in detail in the following artifact sections. All data was entered in a Microsoft® Access 2010 database. Fields left blank in the database indicate that the attribute does not apply or that the attribute is absent.

Table 1. Descriptive Categories for Artifact Classes in the Catalog.

Class	Description 1	Description 2	Description 3	Description 4	Description 5	Description 6	Description 7
Lithic	Debris	Flake type	N/A	N/A	Lithic material	Cortex amount	Heat treatment
Lithic	Tool	Tool category	Tool type	Tool flake type	Lithic material	Cortex amount	Heat treatment
Lithic	Core	Technology	Flake removals	Platform modification	Lithic material	Cortex amount	Heat treatment
Lithic	Fire-cracked rock	FCR type	N/A	N/A	Lithic material	N/A	N/A
Faunal	Class	Element/ Side	Portion	Thermal alteration	Modified	N/A	N/A
Ceramic	Vessel portion	Temper	Surface treatment	Decoration type	Condition	Presence/ Absence of charred residue	N/A
Botanical	Material	Type	Portion	N/A	N/A	N/A	N/A

Gilson standard-testing metal sieves were used for size grading. The following size grades (SG) were used to sort artifacts: $\geq$4.0 inches (SG00); <4.0 to $\geq$2 inches (SG0); <2 to $\geq$1.0 inch (SG1); <1.0 inch to $\geq$0.5 inch (SG2); <0.5 inch to $\geq$0.233 inch (SG3); and <0.233 inch (SG4). The light fraction of flotation samples from Feature 1 was recovered in a 0.0165-inch (#40) mesh screen. The heavy fraction was recovered in a 1/16" mesh screen. Weight was measured to the tenth of a gram with an electronic scale. Artifacts weighing less than 0.05g were given a weight of "0".

4.2 The Lithic Raw Material Resource Base

by Kent Bakken

In terms of Bakken's (2011) regional model, the project survey area is located in the Quartz Subregion of the West Superior Resource Region (Figure 3). The kinds of raw materials available vary considerably across this subregion. In the western parts of the subregion, for example, Tongue River Silica is an important resource, in the eastern parts Animikie Silicates and associated materials are more important, and in the southern parts Fat Rock Quartz was a major toolstone. Raw material sources also vary to some degree. Over large parts of the subregion, glacial till and outwash would serve as the only raw material source. In a few locations, however, especially in the east and also around Little Falls in the south-central part of the subregion, bedrock or lag deposits would also serve as toolstone sources. Unlike some of the other regions and subregions in the state, the Quartz subregion is not defined on the basis of geological coherence or homogeneity. Rather it covers the area where quartz constitutes a large proportion of archaeological assemblages. Much of this is probably Fat Rock Quartz. This hypothesis remains to be tested, as Fat Rock was only recently recognized as a distinguishable raw material, and its distribution and prevalence are still poorly understood.

Because of the heterogeneity of toolstone distributions and types of sources in the Quartz Subregion, examining the geology of the more immediate project area in greater detail is important in understanding the underlying raw material resource base for the sites in the project area. The geological history of the project area is reviewed in the environmental section of this report and is also summarized here, as needed to explain raw material availability.

Central Minnesota, in the general vicinity of the project area, was subject to multiple glacial advances from the east-northeast (Superior lobe), northeast (Rainy lobe), and northwest (Des Moines lobe). Each of these ice lobes, which entered the region from divergent directions, carried a different suite of raw materials into the region, resulting in a complex geographic patchwork of raw material distributions and local variation in the availability of the various raw materials. This complex pattern of raw material distributions in the area is based on the specific till exposed at the surface at a specific location, and the extent to which previous tills were mixed and incorporated into the later tills and outwash, as the earlier tills were overridden by later glacial advances. In total, the suite of raw materials found in this region includes a majority of the raw materials found in the northern two-thirds of Minnesota. This is summarized in Table 2. It should be noted that other materials (e.g., Western River Gravels Group, Knife River Flint) might also occur in the region, although they would be expected to be rare. Local sources for raw materials likely would have included areas where stones were exposed on erosional surfaces, such as lake shores and steams banks and bottoms. The most likely sources are the lakeshores in the immediate project vicinity.

The project area is located in a glaciated part of Minnesota, and bedrock does not crop out in the vicinity. Therefore, glacial till and outwash would have served as the primary toolstone source, supplemented by toolstone that was carried in. The project area is located on glacial outwash of the Rainy lobe, and the nearby area includes mostly Rainy lobe till, but Wadena, Superior and Des Moines lobe tills are all found in the general area (Hobbs 2001; Hobbs and Goebel 1982). In addition, the Wadena lobe appears to contain a mixture of Rainy lobe with older glacial till (Goldstein 1985, 1998). This means that quite a variety of raw materials should have been available within a few tens of miles of the project area. Not all of these materials would have been equally abundant, however. Site data compiled by Bakken (2011) indicate that the most abundant materials would generally have been Tongue River Silica and quartz. A study by Hohman-Caine and Goltz (1995b) produced comparable results. It is not clear how abundant South Agassiz materials (e.g., Swan River Chert, Red River Chert) would have been in local sources, since their importance varies considerably from site to site. West Superior materials (e.g., Gunflint Silica, Jasper Taconite) and Border Lakes Greenstone Group materials (e.g., Knife Lake Siltstone, Lake of the Woods Rhyolite) seem to have been available in modest amounts.

In addition to Tongue River Silica and Fat Rock Quartz, Knife Lake Siltstone was also an important resource in certain contexts (e.g., Caine and Goltz 2002). Each of these materials merits some discussion. It seems that Knife Lake Siltstone (KLS) was especially important in Paleoindian economies. According to a model proposed by Bakken (2011), this is most likely because it was available as large clasts that were useful for producing the kind of large bifaces that were important in the Paleoindian toolkit.

In later periods when large biface production waned, the smaller clasts of Tongue River Silica and Fat Rock Quartz became important resources, and the use of Knife Lake Siltstone declined. Tongue River Silica (TRS) is especially abundant in Wadena lobe sediments. In fact, TRS is more common in the Quartz Subregion than anywhere else in the state, except the Pipestone Resource Region to the southwest and in a narrow band of old till exposed in part of southeastern Minnesota. The geology of this distribution is a bit difficult to unravel, but a few basic points seem clear. TRS originated to the west, roughly in central to west-central North Dakota, and it was redistributed to the east by glacial transport, apparently in large amounts and also in large, sometimes boulder-sized clasts. The time period of this glacial movement of TRS was very early, probably pre-Wisconsinan. Later ice advances incorporated some of this old till, thereby redistributing TRS again. In this latter distribution, TRS tends to be less common and occurs as smaller clasts.

While the general mechanisms of the movement and distribution of TRS from west to east appear straightforward, the specific mechanisms involved in the distribution are unclear. Goldstein (1985, 1998) suggests that the Wadena lobe is a part of the Rainy lobe, which incorporated large amounts of the underlying (and early) Browerville till, which is likely the source of TRS. This is feasible, since the Browerville till is associated with an ice advance from the northwest. However, based on lithology, geologists posit that the ice advance originated in the Winnipeg lowlands and passed through eastern North Dakota (see Goldstein 1998). It is difficult to see how this trajectory would allow for an abundance of TRS in the associated till. In addition, it is difficult to correlate the Browerville till with the old tills exposed in the Pipestone Resource Region and along the eastern margin of the Des Moines lobe in southeastern Minnesota. In reviews of TRS distribution in central Minnesota, Goltz (2002, 2010) postulates an early advance of an ice lobe across the region from sources farther to the west, and geologists are exploring this issue (C. Patterson, personal communication 2011). Without further evidence and study, however, it seems that the details of this bit of geological history remain difficult to resolve.

Fat Rock Quartz (FRQ) would not have been available in the vicinity of the project area. The nearest sources would be near Little Falls to the southeast, in the south-central part of the Quartz Subregion. In and near Little Falls, FRQ is abundant in a variety of secondary contexts along the Mississippi River and its tributaries. There are also limited primary exposures, although these were probably less useful than the secondary sources. In addition, the material was widely distributed to the south by glacial transport. Wendt and Bakken (in press) suggest that FRQ was useful for producing small to medium size bifaces, although reduction probably required specialized techniques. The material was clearly important through central to east-central Minnesota, and it seems likely that much if not most of the quartz found at sites in this part of the state is Fat Rock Quartz. Unfortunately, few raw material inventories to date have distinguished Fat Rock Quartz from polycrystalline quartz, so the true importance of Fat Rock Quartz remains to be determined.

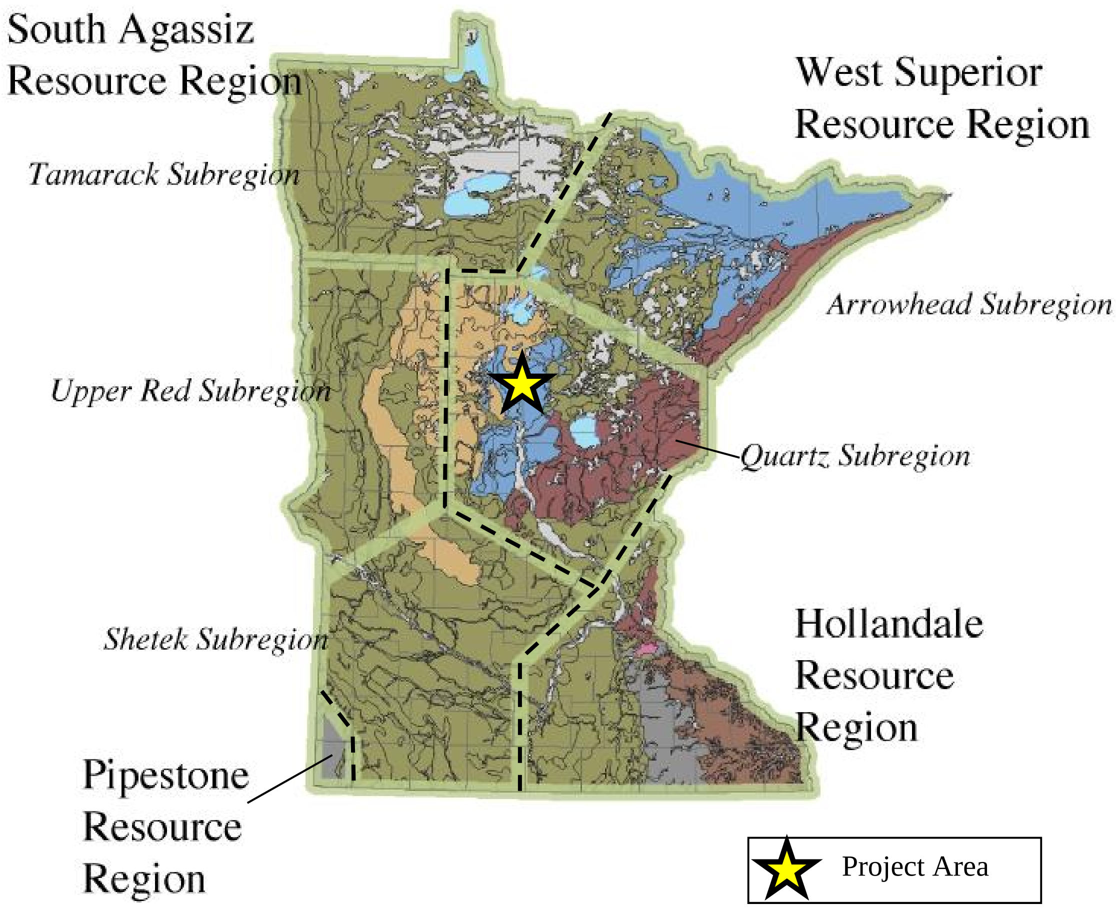


Figure 3. Lithic Resource Regions of Minnesota (adapted from Bakken 2011).

Table 2. Estimated Primary, Secondary, and Minor Lithic Raw Material Status by Region and Subregion (Bakken 2011).

Regions	Primary Raw Materials	Secondary Raw Materials	Minor Raw Materials	Main Exotic Raw Materials
South Agassiz Resource Region				
Tamarack Subregion	Swan River Chert Red River Chert	Border Lakes Greenstone Group	Quartz Tongue River Silica Western River Gravels Group ?	Knife River Flint
Upper Red Subregion	Swan River Chert	Red River Chert Tongue River Silica Quartz	Border Lakes Greenstone Group Western River Gravels Group Knife River Flint	Knife River Flint
Shetek Subregion	Swan River Chert	Tongue River Silica Red River Chert Quartz	Border Lakes Greenstone Group Western River Gravels Group Knife River Flint Fat Rock Quartz Other West Superior materials	Knife River Flint Burlington Chert
West Superior Resource Region				
Arrowhead Subregion	Gunflint Silica Knife Lake Siltstone	Quartz Hudson Bay Lowland Chert Jasper Taconite	Border Lakes Greenstone Group	Knife River Flint
Quartz Subregion	**Knife Lake Siltstone** **Tongue River Silica** **Quartz *(Fat Rock and other)***	**Swan River Chert**	**Lake of the Woods Rhyolite** **Biwabik Silica** **Gunflint Silica** **Jasper Taconite** **Kakabeka Chert** **Hudson Bay Lowland Chert** **Lake Superior Agate**	**Knife River Flint** **Hixton Group** **Burlington Chert**
Pipestone Resource Region				
	Tongue River Silica Gulseth Silica ?	Sioux Quartzite Swan River Chert ? Red River Chert ?	Quartz	Knife River Flint
Hollandale Resource Region				
	Cedar Valley Chert Galena Chert Grand Meadow Chert Prairie du Chien Chert	Shell Rock Chert ?	Quartz Tongue River Silica Swan River Chert Red River Chert	Hixton Group

4.3 Lithic Analysis Methods

The analysis of lithics focused primarily on the identification of raw materials, lithic technologies, and specific types of flakes, tools, and cores. Information on site function, lithic economy, lithic technologies, settlement patterns, and regional interaction may be inferred from this data. Raw material, weight, size grade, and amount of cortex were recorded for all lithics. Lithic debris was examined for macroscopic evidence of modification, such as use-wear or retouch. All lithics were examined using a 10x magnification hand lens, which was useful for identifying micro-flaking, lithic material, and other features not visible without the aid of magnification.

Frank Florin conducted the lithic raw material identifications. He has extensive experience in the raw materials of the region and also utilized sample collections as needed. Published guides to lithic resources of Wisconsin, Minnesota, and the Upper Midwest were also consulted as needed (Bakken 1997, 2011; Gonsior 1992; Morrow 1984, 1994; Morrow and Behm 1986).

4.3.1 Thermal Alteration

Thermal alteration, commonly known as heat treatment, is the intentional alteration of a lithic material to improve its flakability. Heat treatment produces an increase in surface luster, intensifies ripple marks on flake scars, and creates reddish to orangish color in many cherts and other light-colored materials. In some materials, such as Tongue River Silica, Swan River Chert, and Prairie du Chien Chert, the effects of heat treatment are fairly well-documented and can be discerned with a good degree of accuracy. In the current analysis, materials were classified as heat treated if there was significant and noticeable reddish to orangish color and an increase in luster. If these color and texture traits were subdued, then the piece was coded as “probably heat treated”. The effects of heat treatment on some materials are not well known.

In contrast to heat treatment, burning is defined by excessive heating that often compromises the stone’s flakability. Traits of burning include potlid spalls, crazing, and cracks on the artifact’s surface, and often a notable darker color. Burning is interpreted to be unintentional, being caused either by accidental over-heating during the heat treatment process or by discard into a cooking facility.

4.3.2 Lithic Debris

Lithic debris includes flakes, flake fragments, and pieces of shatter that were produced from cobble testing, core reduction, stone tool manufacturing, and stone tool maintenance. The analytical methods used in this report are based on the results of previous lithic studies and experimental replications, which indicate that lithic-reduction stages and technologies can be inferred from diagnostic flake attributes. (Bradbury and Carr 1995; Callahan 1979; Cotterell and Kamminga 1987; Flenniken 1981; Hayden and Hutchings 1989; Inizan et al. 1999; Magne 1985, 1989; Odell 1989; Root 1992, 1997, 2004; Tomka 1989; Yerkes and Kardulias 1993).

The most promising results are derived from studies that consider a combination of several flake attributes from a large sample of lithic debris. The work of Mathew Root (2004) provides the basis for much of the current analysis because of his extensive lithic replicative studies and their relevance to the current project with regards to cultural context, regional location, comparable raw materials, and lithic technologies. The basis of this analytical framework has been used for several large data recovery projects in North Dakota, including Lake Ilo 32DU955A (Ahler et al. 1994), 32RI785 (Root 2001), and Beacon Island 32MN234 (Mitchell and Johnston 2012). Root’s methodology and results are supported by the lithic studies referenced above, which tend to focus on more specific aspects of technology and flake attributes. Similar technological approaches based on flake attributes from replicative studies have been developed in other lithic studies (Callahan 1979; Ozbun 1987; Fleniken 1981; Flenniken et al. 1990; Magne 1985). While Root’s work is primarily oriented to bifacial technologies of Knife River Flint, other studies consulted for this analysis provided information on bipolar and nonbifacial technologies.

Specific flake types and their defining attributes that are used in our lithic analysis are described in Table 3. Flake types include decortication, alternate, bifacial thinning, bifacial shaping, shatter, bipolar, nonbifacial, edge preparation, blade, potlid, unidentified, other size-grade 4 (SG4), and broken flakes.

Flake attributes examined in this analysis include the following morphological and technological characteristics: amount of cortex; presence/absence of percussion bulb; presence/absence of bulbar scar; extent of platform modifications and preparations (grinding, battering, and faceting); platform size; platform angle; number of dorsal flake scars; flake morphology; flake thickness; and size grade. These attributes have been determined to be diagnostic of specific lithic-reduction technologies and stages.

The lithic analysis was accomplished by 1) identifying specific flake attributes; 2) comparing the attributes with those defined for specific flake types; and 3) making a determination as to flake type. The lithic analyst, Frank Florin, has moderate experience in lithic replication and has a comparative collection of flake types comparable to the ones used in this study.

Decortication flakes are indicative of cobble testing and early-stage core reduction, and in this study are linked to nonbifacial technology. Bifacial technology is indicated by bifacial thinning flakes and shaping flakes, alternate flakes, bifacial cores, and bifacial tools. Bipolar flakes and bipolar cores are indicative of bipolar reduction. Nonbifacial technology is indicated by nonbifacial flakes, decortication flakes, tools made on nonbifacial flakes, and nonbifacial cores.

Shatter is most strongly associated with cobble testing, core reduction, and the earlier stages of reduction. Types of lithic debris that are not indicative of specific technologies or reduction-stages include "other size-grade 4" (other SG4) flakes, broken flakes, and unidentified flakes. Some materials, like quartz, which do not have conchoidal fracture properties, are likely to result in greater amounts of nondiagnostic flake types than other materials.

Table 3. Definitions of Technological Flake Types (primarily adapted from Root 2004).

Technological Flake Type	**Definition**
Decortication Flakes	Decortication flakes have most (>50%) of their dorsal surface covered with cortex. They are associated with raw material testing and the early stages of core and tool reduction (Root 2004). These flakes have a large striking platform and a bulb and bulb scars that are nearly always quite pronounced as a result of direct percussion with a hard hammer (Inizan et al. 1999). Other traits of these flakes include: a large flake platform angle (60-90 degree range); whole flakes are typically are SG1 or SG2; typically two or less flake scars on the dorsal surface; and a relatively thick cross-section.
Alternate Flakes	Alternate flakes are produced when beveled edges are created from: 1) squared-off or thick edges, such as those on tabular cobbles; 2) the thick margins of flake blanks (especially at the proximal end); 3) margins with stacked-step terminations; and 4) broken flakes or bifaces. The result is the creation of a bifacial (beveled) edge that prepares it for bifacial thinning or shaping by producing edge angles appropriate for use as platforms (Flenniken et al. 1990; Root 2004). They are thick in relation to their length and width, are triangular in cross section, have a squared edge (often cortical) adjacent to the platform (this is part of the squared edge of the object piece), have single-faceted platforms, and have a skewed orientation in relation to the axis of percussion.

Table 3. Continued.

Technological Flake Type	Definition
Bifacial Thinning Flakes – (early to middle-stage)	These flakes are strongly associated with percussion bifacial thinning (Root 2004). Bifacial thinning flakes without platforms exhibit the following attributes: 1) thin curved long sections; 2) extremely acute lateral and distal edge angles; 3) at least three dorsal flake scars (usually more) that originate from different directions, especially other than the flake itself; 4) 20% or less cortex; and 5) an expanding shape in planview. Flakes with platforms exhibit attributes 1-5 along with 6) a bending initiation and 7) a narrow and faceted striking platform without cortex. Proximal flake fragments that consist mainly of a platform are classified as bifacial thinning flakes if they have the above attributes. Flakes with platforms often have a lip at the intersection of the striking platform and the flake ventral surface (caused by a bending flake initiation), and flakes with distal ends usually have feathered terminations. Soft-hammer percussion with a billet is typically used in the removal of these flakes. The flaking angle is acute, the bulb is diffuse, and there is often abrasion on the overhang (platform) (Inizan et al. 1999).
Bifacial Shaping Flakes by pressure or percussion – (late-stage)	These flakes are usually small, less than < 1/4 inch (SG4), but can be larger (Root 2004). Only flakes SG3 or smaller are classified as bifacial pressure flakes. These are relatively thin with multifaceted and ground platforms. Flakes must retain a platform to be placed in this class. Flakes produced early in the pressure flaking process have multiple scars on their dorsal surfaces and are curved in long section and slightly expanding, or petaloid, in planview. Flakes produced during final bifacial pressure flaking have parallel sides and a single dorsal arris that runs from platform to distal tip. These flakes are generally produced during bifacial pressure flaking. Occasionally, small flakes produced by late-stage percussion bifacial shaping possess the defining attributes of pressure flakes. Whether produced by pressure or percussion, these flakes are associated with final bifacial shaping (stage 5 as defined by Callahan [1979]) and bifacial tool maintenance.
Shatter	Shatter includes angular, cubical, and irregularly shaped chunks that lack the following: bulbs of force, systematic alignment of fracture scars on faces, striking platforms, and points of flake initiation. Interior (ventral) and exterior (dorsal) surfaces and proximal and distal ends cannot be determined on these pieces (Root 2004). Shatter may be the result of poor-quality stone with fractures along bedding planes or other material flaws. Shatter is created by most production technologies but is most strongly associated with cobble testing, core reduction, and earlier stages of reduction.
Bipolar Flakes	These exhibit the following attributes: 1) shattered or pointed platforms with little or no surface area; 2) wedging flake initiations; 3) evidence that force has been applied to both ends of the flake, such as crushing on opposite ends; 4) no bulbs of force (due to wedging initiations); 5) pronounced compression rings from compression-controlled flake propagation; and 6) a generally parallel-sided plan form (Root 2004; see also Flenniken 1981). Flakes classified as bipolar must exhibit most but not all of these attributes. Bipolar flakes do not exhibit positive bulbs of force on opposite ends of the same flake interior surface.
Potlid Flakes	A flake expelled from the surface of a lithic artifact by heat-induced differential expansion when overheated in a fire, as opposed removal by the flintknapping process (Flenniken et al. 1990). The flake has a flat dorsal surface and a convex ventral surface and is shaped somewhat like the inverted lid of a pot.
Unidentified Flakes	These flakes do not fit any of the previously described types.

Table 3. Continued.

Technological Flake Type	Definition
Nonbifacial Flakes	Nonbifacial flakes are size-grade SG1 to SG3 and do not have the defining attributes of bifacial or decortication flakes. Diagnostic traits include 1) simple platforms with minimal platform modifications (often with no facets but up to one or two facets); 2) large platform angles (60-90 degree range); 3) generally less than three dorsal flakes scars that are likely to be unpatterned; and 4) may have bulbar scar on ventral side (Andrefsky 2005; Magne 1985, 1989; Odell 1989, 2003:126; Tomka 1989; Yohe 1998). Platform areas may be partially or wholly obliterated from hard hammer percussion. This flake type is comparable to Root's (2004) "simple flakes". In general, these flakes have relatively thick cross sections, steep lateral edge angles, and straight or slightly curving profiles. The amount of dorsal surface cortex typically ranges from 0 to 50%. This class contains conchoidal flakes that have a bulb of percussion and bending flakes. Included in this type are flakes classified as "interior flakes", which are removed from the interior of the core or cobble, with no cortex on their surface (Fleniken et al. 1990; and Yerkes and Kardulias 1993). While these flakes are produced in biface reduction, particularly the earliest stages, they are most strongly associated with cobble testing, unprepared nonbifacial cores for flake blank production, and the early stages of nonbifacial tool reduction.
Edge Preparation Flakes	A flake removed from the edge of a flake blank or core to change the angle of the edge to facilitate flaking in order to prepare the blank or core for further reduction (Flenniken et al. 1990). Bifacial edge preparation flakes usually have thick and wide platforms and are short in length.
Blade Flakes	These are specialized flakes defined by the presence of 1) parallel or subparallel lateral margins; 2) dorsal flake ridges that are parallel or subparallel with the lateral margins; 3) at least two flake-removal scars evident on the dorsal surface; 4) an axis of applied force that is approximately parallel with flake's margins; 5) a length-to-width ratio of at least 2:1; and 6) plano-convex ,triangular, rectangular, or trapezoidal cross sections (Crabtree 1972:42-43; Root 2004; Whittaker 1994:33).
Other Size-Grade 4 (SG4) Flakes	Other size-grade 4 (SG4) flakes (< 1/4 inch in size) are either too small to be reliably identified using the diagnostic attributes of the other defined flake types or they simply lack diagnostic attributes (Root 2004). These are produced in all reduction technologies, including cobble testing. These flakes are likely to be underrepresented in lithic assemblages because their small size makes them less likely to be recovered.
Broken Flakes	Broken flakes are flake fragments that lack a bulb of percussion, platform, or other diagnostic features that would enable a determination of flake type. Such flakes are typically distal or medial flake fragments. Broken flakes occur in all technologies and are produced during all stages of lithic reduction.

Aggregate analysis based on size grades (e.g., mass analysis) was deemed not useful for determining lithic technology and reduction stages because soils were screened through 1/4-inch mesh, and therefore SG4 artifacts were typically not recovered. The recovery of SG4 debris and large samples is imperative for conducting mass analysis (Ahler 1989). In addition, aggregate analysis draws its inferences from experimental replicative data sets that do not exist for the raw materials at the sites identified in the project area. There are other weaknesses of this method related to the accuracy of separating mixed reduction stages and mixed technologies (Andrefsky 2001:5).

4.2.3 Lithic Tools

Overview

Stone tools were vital to prehistoric lifeways, and they were used for a variety of tasks: cutting, sawing, scraping, boring or drilling, graving, whittling or slicing, perforating, chopping, pounding, and abrading.

Tool categories were defined by technological attributes (bifacial, unifacial, or pecked/groundstone) and by whether the tool was patterned or unpatterned. Patterned or formal tools include types in which the original shape of the flake blank or raw material has been substantially modified through a systematic sequence of reduction or retouch to produce a specific form that exceeds minimal functional requirements. In patterned tools, the shape of the tool reflects a distinctive style or cultural template. Projectile points, end scrapers, and bifaces are examples of patterned tools. Unpatterned or informal tools include types that were not substantially modified and still largely reflect the original shape of the flake blank or raw material. They lack the complex manufacturing methods of patterned tools and reflect an expedient technology. Flaking is typically restricted to the margin of the artifact. Utilized flakes and retouched flakes are examples of unpatterned tools.

Tool types and their inferred functions (e.g., projectile points, scrapers, cutting tools, etc.) were defined by technological attributes in conjunction with morphological attributes (form), general edge angle, size, and results from micro-wear studies that provide supporting evidence for general tool function (Root 2001; Kooyman 2000:164; Vaughan 1985; Yerkes 1987).

The use-life of a tool is an assessment of its estimated stage of manufacture and reason for discard. Use-life categories include the following: 1) unfinished tools that were not broken; 2) tools that are finished and in working condition; and 3) broken or worn out tools. This information was entered in the “notes” column of the catalog.

Numerous studies indicate that microwear analysis, which uses high-powered magnification to examine the edge of a tool in an attempt to identify the type of material that was worked by the tool and the type of motion with which the tool was used, is necessary to determine a tool’s specific function (Keeley 1980; Odell 2003; Semenov 1976; Vaughan 1985; Yerkes 1987). Microwear studies clearly indicate that there can be a low correlation between tool form and specific function, as tools from different form classes were used for the same task, and a single tool form was often used for multiple functions (Yerkes 1987:128). These studies reveal that there is much more functional variation than is typically assumed from the traditional form-based tool classification.

Microwear studies also indicate that there is some viability to inferring general tool function from the form-based classification, especially for certain tool types. For example, scrapers defined morphologically by a steep working edge often correlate with micro-wear studies that show tools with steep working edges were used for scraping bone, wood, and hide (Kooyman 2000:164; Root 2001; Vaughan 1985; Yerkes 1987).

Of course, without microscopic examination of the edge wear, there is no way to tell what material was scraped. Also, microwear analysis often reveals greater functional variation than can be inferred from typological and technological classification alone (Odell 1996; Vaughan 1985). For example, some “scrapers” were also used for tasks such as cutting, engraving, wedging, shaving, chopping, and shredding. In some cases “scrapers” bear no evidence of use as scrapers. Many projectile points were also used for cutting, shaving, engraving, scraping, and drilling. Other bifacial tools were used to saw bone, antler, or wood as often as they were used for cutting meat (Yerkes 1987:186).

Thin, sharp-edged flake and blade tools (such as utilized and retouched flakes) generally correlate with microwear studies confirming their use as cutting implements (Kooyman 2000:164; Odell 1996; Root 2001; Yerkes 1987). Again, the specific material worked or specific use cannot be determined without microscopic examination of wear patterns. Some studies that tested the accuracy of identifying utilized flakes without magnification indicated a low success rate, as the multiple processes (besides use as a tool) that can produce edge wear are not discernible without microscopic analysis (Young and Bamfrorth 1990; Shen 1999). These processes include wear caused by flake production, artifact trampling, excavation damage, and artifact movement in the soil. The studies show two primary causes of incorrect identification. First, utilized flakes that exhibit no macroscopic wear go unrecognized as tools. Second, usewear is incorrectly attributed to use as a tool when it is actually created by some other cause.

Despite the benefits of microwear analysis, there are several limitations that hinder its usefulness and practicality. The time and money needed for such analysis is often not available in contract work, few individuals have the necessary training and expertise, and microscopic equipment is not available in most labs. Further, experimental studies have not been conducted on many of the lithic materials that occur in the artifact assemblages in Minnesota. It has also been found that microwear analysis does not necessarily produce conclusive results. Blind tests revealed the accuracy of tool function to be 76 percent for high-power technique and 68 percent for the low-power technique (Yerkes 1987:115). The accuracy of identifying the material worked was 62 percent for high-power technique and 32 percent for low-power technique. Finally, micro-wear analysis may not clearly identify functions of a single tool edge that was used for different tasks, nor may it identify the function use of a tool used for a short time or on very soft materials that do not cause observable wear.

Stone Tool Techno-Morphological Categories and Descriptions

Tool types recovered from sites in the project area are described below.

Utilized and retouched flakes are unpatterned flake tools that have a sharp, narrow-angled working edge, which is not beveled. Utilized flakes have no intentional modification but do have a series of micro-flakes (use-wear) that were removed along the working edge during use. Retouched flakes are minimally modified by pressure flaking along the working edge, presumably to shape the edge for optimal use. The micro-flakes on utilized flakes are distinguished from retouched flakes by their smaller size. Use-wear and experimental studies indicate that these are typically light-duty cutting, slicing, scraping, and sawing tools that were used on soft materials (meat, hides, and plant material) or moderately resistant materials (wood and bone). These tools suggest that site activities may have included butchering, animal/plant processing, hide working, and bone and woodworking.

Projectile points are bifacial or unifacial tools with a sharp-pointed distal end and proximal hafting elements. These tools were used for hunting, and larger points may have also been used as cutting tools. Published guides to projectile point types of Minnesota, Iowa, Wisconsin, the Upper Midwest, and the Northeastern Plains were consulted to aid in identifying the points (Alex 2000; Boszhardt 2003; Goldstein and Osborn 1988; Kehoe 1966, 1973, 1974; Morrow 1984; Justice 1987). Projectile points indicate that site activities were associated with the procurement of game animals.

Scrapers are patterned flake tools that have been pressure flaked along a distal or lateral end to form a steeply beveled (wide-angled) edge that is optimum for scraping. End scrapers have a distal working edge that is generally shorter or the same length as the lateral side and may have been hafted. Side scrapers have the working edge along the longest side of a flake and were likely not hafted. Scrapers are typically associated with scraping tasks on a variety of soft materials (meat, hides, and plant material) or moderately resistant materials (wood and bone).

Gravers are deliberately formed tools that have a short spur projecting from the tool edge, which was often created by pressure flaking. They are typically used for shallow engraving or incising of bone or wood.

Netsinkers are patterned cobble tools that are typically manufactured from locally-available, water-worn cobbles. The defining characteristic of netsinkers is notching along the sides or ends that facilitates attachment to fishing nets with fiber cords or hide strips. Pecking, abrading, and both direct- and indirect-percussion have been documented as notching techniques. The depths, widths, and notching angles vary and some specimens appear to have made use of natural notches and curves in the rock. Varying sizes and weights are associated with the use of two general types of nets: 1) gill nets that used a combination of smaller cobbles along the entire bottom margin of the net to keep the device extended, mid-size cobbles sometimes attached in places along the bottom to help maintain the shape, and larger cobbles attached to the ends of the net-bottom to anchor it in place; and 2) seine nets that used closely-spaced smaller cobbles along the entire bottom margin without larger anchor stones. Ethnographic accounts indicate that netsinker sizes also varied based on water currents and weather.

Hammerstones are generally rounded stones that have pitting on one or more surface, which resulted from striking a hard material. They were used for flint knapping, processing foods such as acorns, or marrow extraction from animal bones.

Denticulates are flake tools with serrated or denticulated working edges produced by either bifacial or unifacial retouch. These tools were probably used most often in sawing, shredding, and scraping hard materials such as wood or bone (Ahler 1994).

Anvilstones are larger stones that have a relatively flat, pitted surface. Generally, the pitting is localized to a specific area and is the result of impact with another stone during bipolar reduction or food processing.

Bifaces are classified into five stages after Callahan (1979), although Callahan's final stages are condensed in this scheme (cf. Odell 2003; Root 1999). The unfinished bifaces could have been used as tools in an unfinished state, although it is likely that their intended final form would have been projectile points. The bifaces from the current project include broken and whole specimens.

A Stage 1 Biface is a flake blank, a tabular piece of material, or a cobble that was obtained for reduction. Stage 1 bifaces were not identified in the assemblage, as flake blanks are generally classified as primary flakes, and there were no unworked cobbles.

A Stage 2 Biface has initial edging that is characterized by the following: bifacially flaked edges in which relatively widely-spaced scars produce a sinuous outline in lateral view; conchoidal flake scars with cones of force from hard-hammer percussion; minimal shaping; flakes often do not extend to the midline; irregular outline and cross section; and width to thickness ratio ranges from 2:1 to 3:1.

A Stage 3 Biface has primary thinning that is characterized by the following: major projections and irregularities removed edges straightened so they are less sinuous; ridges and humps removed by thinning; production of flakes with bending initiation from billet percussion; lack of cones of force; flakes that often extend to or past artifact midline; edge angles in the 40-60 degree range; and width to thickness ratios of 3:1 to 4:1.

A Stage 4 Biface has secondary thinning and shaping that is characterized by the following: a thin, flat to biconvex cross section; regular edge shape; edges with beveling and grinding; little to no cortex; production of flakes with bending initiation from billet percussion; lack of cones of force; flakes often extend to or past artifact midline; edge angles in the 25-40 degree range; and width to thickness ratios that range from 4:1 to 5:1.

A Stage 5 Biface has undergone final shaping and hafting preparation and is characterized by the following: pressure flaking or light percussion flaking to form a specific shape, especially along margins; edge beveling or grinding; removal of percussion platforms; pressure flaking of notches and stem shape; and basal grinding. This stage is a finished projectile point or knife.

4.4 Faunal Analysis

The faunal analysis was conducted by staff at MVAC, under the direction of zooarchaeologist Katherine Stevenson. Data recorded for faunal remains included identification to the highest taxonomic level (class), element/side, element portion, and condition. Faunal condition included those attributes caused by human modification such as spiral fractures, impact fractures, cut marks, and thermal alteration (calcined and burned). Most of the faunal assemblage was highly fragmented and not amenable to species-level identification. These faunal fragments were generally classified into broad taxonomic categories, including unidentified, mollusk, fish, bird, large mammal, medium/large mammal, medium mammal, and small mammal.

Large mammals included bison, moose, and deer-size animals. Medium mammals included coyote and fox-size animals, and small mammals included rodent-size animals. An osteological comparative collection facilitated specimen identification.

4.5 FCR Analysis Methods

4.5.1 Definition of FCR

Stones used for cooking or heating, referred to here as fire-cracked rock(s) (FCR), are artifacts with distinctive characteristics caused by heating to high temperatures in a fire (House and Smith 1975; Jackson 1998; Latas 1992; Lovick 1983; McParland 1977; Taggart 1981; Thoms 2009). FCR includes both fractured and unfractured rocks that have been thermally-altered and lack other forms of cultural modification, such as flaking, pecking, polishing, or use wear.

Stones used for cooking or heating are generally cobbles of locally available materials that were chosen for their accessibility and predictable thermal qualities. These cobbles, which become FCR after heating, were generally larger than eight cm in diameter (Wentworth 1922). The types of cobbles chosen for heating or cooking were usually coarser than stones used for flintknapping (Lovick 1983) and commonly include quartzite, granite, basalt, sandstone, and limestone. Experimental studies show that igneous rocks are better able to withstand thermal stresses than metamorphic or sedimentary rocks, which explains the predominance of basaltic and granitic rocks in the archaeological record. Quartzite is also common as it one of the metamorphic rocks that can withstand a high degree of thermal stress.

FCR cortical surfaces are often discolored toward pink, red, gray, and/or black hues (Latas 1992; Schalk and Meatte 1988; Taggart 1981). Many pieces retain a high percentage of cortex because of the way FCR fractures. Heating in a fire causes FCR to become more friable (particularly non-basaltic rocks) than unheated stones (House and Smith 1975; McParland 1977). A variety of FCR shapes have been described from experimental studies and archaeological sites, although a correlation between shapes and function is unclear.

FCR is generally recovered either as part of a feature, which is the physical remains of a cooking or heating facility, or in a secondary refuse context where they are no longer in their location of original use. Context is important for the understanding and interpreting FCR and associated subsistence activities at a site.

4.5.2 FCR Background and Previous Studies

The use of heated rocks for cooking, extending back at least 10,000 years, is well-documented ethnographically and archaeologically in North America (Thoms 2009). Cooking stones (FCR) and their associated features have valuable research potential, as is made clear by recent studies that illustrate their significance for interpreting site function and settlement and subsistence patterns (Jackson 1998; Thoms 2007, 2008a, 2009). Ethnographic research has shown that specific cooking and heating facilities were related to specific types of food resources and the seasonality of those resources. Thus, the identification of cooking facilities may indicate the type of food being processed and the seasonality of the site.

Thoms (2008a) notes three important qualities in cooking stones that explain their widespread use. First, the relative non-combustibility and high density of rocks (i.e., heavy per unit volume) enable them to capture and hold heat for longer periods of time than hot coals, allowing extended cooking of foods (particularly roots) to render them readily digestible and nutritious. Second, cooking stones hold heat generated by fire, thus reducing the amount of fuel needed to cook, which is important in areas where wood and other fuels are sparse. Third, cooking stones can be used to boil water and produce greater amounts of steam for longer than would be possible with hot coals alone. Compared to other cooking methods, boiling probably yields a greater proportion of potentially available calories/nutrients from a given piece of food (Wandsnider 1997), especially when the liquid medium is consumed. The heating benefits from rocks are also apparent in their widespread use for sweatbaths and keeping campsites and habitation shelters warm. Crumbled pieces of FCR were also used for temper in pottery.

Cooking-stone facilities and their archaeological byproducts, FCR features, have considerable functional and morphological variation, as they were used to cook a wide array of animal and plant foods (Driver and Massey 1957; Ellis 1997; Thoms 1989, 2007, 2008a; Wandsnider 1997). However, four primary cooking methods are consistently noted (Thoms 2008a): 1) **baking** in an earth oven with stone heating elements in closed pits and mounds where cook stones may be heated in situ (i.e., in the pit) or on an adjacent surface fire and, once heated, placed in the pit; 2) **steaming** with stone heating elements in closed pits and mounds where water is added, using cook stones heated in or outside the pit; 3) **roasting** (stone griddles) on open-air hearths built on an unprepared surface or in shallow pits using stone heating elements; and 4) **boiling** in open pits and non-ceramic vessels with stones heated on nearby surface hearths/fires. In general, steam cooking takes place over several hours whereas baking often spans several days, but distinctions between hot-rock baking and steaming are often blurred. Hot-rock roasting refers to the use of cook-stone griddles in open-air hearths built on an unprepared surface or in shallow pits.

Jackson (1998; citing Driver and Massey 1957) provides additional details on the types of cooking facilities that were widespread across North America, which created much of the cooking-related FCR recovered from archaeological contexts:

> As this and other ethnographic records indicate, a typical **earth oven** was usually between 1-3 m in diameter and 30-40 cm deep. The hole was filled with fuel (usually wood) and rocks, and then set ablaze. Once the fire was largely burned down, hot rocks were maneuvered into a flat heating element and then vegetal materials, food packages, more vegetal packing materials, and finally an earth seal were successively added. After sufficient time had passed, usually between twelve and 48 hours, the oven was opened and food was removed; this left a concave basin filled with FCR. Both plant and animal foods were cooked in earth ovens, however, plants were cooked more often (Driver and Massey 1957:233).
>
> The second major type of cooking facility was the **rock griddle**. It was a type of hearth, used for short-duration cooking, that usually lasted no more than a few hours. It was akin to broiling over a fire or roasting on hot coals (cf. Driver and Massey 1957:233) because it used dry, open-air convection heat to cook food. As such, this cooking facility would have been used most often with animal foods and less often with plants (Driver and Massey 1957:233). In a generic rock griddle, rocks were placed directly in a fire to take on heat; they would release that heat after the fire died down. The fire was usually on a flat surface, enclosed with rocks, or in a shallow basin. A rock griddle was usually about 1 m in diameter. When the fire was mostly burned down, the hot-rocks were spread into a flat or slightly concave platform. Food was placed directly on the platform or placed on skewers directly over the rocks. Rocks would cool in place after the food had been removed, and would not be disturbed as a result of food removal.
>
> Stone **boiling**, the third cooking facility, occurred when hot stones were immersed in a container of liquid (Driver and Massey 1957:229). It was a common cooking technique across North America, although it was seldom used among groups that had access to pottery.

Ethnographic accounts indicate that a variety of plants, large and small game, fish, and shellfish were cooked using hot-rock facilities. Plant foods, however, predominate in hot-rock cookery, especially those requiring inulin or fructan hydrolysis (Thoms 1989; Wandsnider 1997), with earth ovens being used most commonly for prolonged cooking of root foods (Thoms 2008b). High-lipid and collagen-rich meats that require substantial hydrolysis, which entails prolonged, high-temperature baking, are also well represented in hot-rock cookery (Wandsnider, 1997).

The distinguishing characteristics of primary cooking facilities types on archaeological sites are summarized in Table 4 (Thoms 2008a).

Table 4. Cooking Facilities and Expected Characteristics of FCR Features and Scatters (from Thoms 2008a).

Hot-rock Cooking Facility	Expected archaeological characteristics of resulting FCR feature	Expected archaeological characteristics of non-feature FCR
Earth oven (baking), rocks heated therein	Basin-shaped pit, 1–3 m in dia. and 0.1–0.3 m deep, sometimes with rock lining and always with a lens of FCR (i.e., heating element) underlain by and intermixed with thermally-altered (oxidized, carbon-stained) sediments; FCR (small to large *), typically carbon stained and mostly fragments, varies considerably in size, whole rocks often found along edges of heating elements; burned bone (possibly from fuel residue), flakes and tools expected therein as discard from routine clean-up activities	Scattered FCR in the immediate vicinity of remains of earth ovens, representing discard and scavenging activities, and perhaps rocks used with oven-top fire; also other scattered camp debris, furniture rocks, and unused cook stones
Surface oven (roasting), rocks heated therein	Large to medium, presumably flattish, rock(s) on or just below the occupation surface, underlain and encompassed by thermally-altered sediment (oxidized, perhaps some carbon stained); burned bone (possibly from fuel residue), flakes and tools expected therein as discard from routine clean-up activities	Scattered FCR in the immediate vicinity of remains of surface ‘‘ovens” (i.e., open-air griddles) representing discard and scavenging activities; also other scattered camp debris, furniture rock and unused cook stones
Steaming pits; rocks heated nearby	Basin-shaped pit (ca. 1 m dia. and 0.3 m deep) partially filled or lined with medium and large FCR (typically not carbon stained), or occasionally a large flat rock, underlain by thermally-unaltered sediment; nearby surface hearths (ca. 1 m dia.) where rocks were heated, represented by ash, charcoal, oxidized sediments, and a few pieces of FCR	Scattered FCR in the immediate vicinity of remains of steaming pits, representing discard and scavenging activities; also other scattered camp debris, furniture, and unused cook stones
Stone boiling in a pit; rocks heated nearby	Bucket-like (i.e., near-vertical side walls) pits, 0.3–0.45 m in dia. and 0.15–0.45 m deep, partially filled with small, possibly medium-sized, FCR, not typically carbon stained, underlain by thermally-unmodified sediment; nearby surface hearths where rocks were heated, represented by ash, charcoal, oxidized sediments, and a few pieces of FCR, burned bone (possibly from fuel residue), burned flakes and tools discarded in the fire pit	Comparatively dense, scattered FCR in the immediate vicinity of remains of stone-boiling pits or concentrations representing discard and scavenging activities; also other scattered camp debris, furniture, and unused cook stones
Stone boiling in a container; rocks heated nearby	Surface hearths where rocks were heated, represented by ash, charcoal, oxidized sediments, and FCR (not typically carbon stained); concentrations of discarded small- and possibly medium-sized FCR, burned bone (possibly from fuel residue), burned flakes and tools, possibly discarded in fire pit	Comparatively dense, scattered FCR in the immediate stone boiling area, representing discard and scavenging activities; also other scattered camp debris, furniture rock, and unused cook stones
Open-pit drying ovens, rocks heated elsewhere	Basin-shaped pit (ca. 1 m dia. and 0.3 m deep) with FCR lens, mostly medium-size large rocks, underlain by thermally-unmodified sediment; nearby surface hearths (ca., 1 m dia.) where rocks were heated, represented by ash, oxidized sediments, and a few pieces of FCR, burned bone (possibly from fuel residue), flakes and tools expected therein as discard from routine clean-up activities	Scattered FCR in the immediate vicinity of remains of open pits, representing discard and scavenging activities; also other scattered camp debris, furniture rock, and unused cook stones

* Original rock sizes: large rocks, >25 cm in diameter; medium rocks, 10–25 cm in diameter; small rocks, <than 10 cm in diameter.

Thoms (2008a) notes that a better understanding of the relationship between cooking methods and cooking requirements allows for a better understanding of the nature of archaeological FCR features. By considering FCR feature characteristics, it should be possible to assess whether FCR represents stone-boiling or oven-baking, estimate the magnitude of activities, suggest what foods may have been cooked there, and fine-tune the search for confirming evidence.

Jackson (1998:45) summarizes the types of information that can be gleaned from collecting basic FCR data:

> FCR weights and counts give rough estimates of cooking methods (Taggart 1981:149). In general, large heating elements (i.e. earth ovens) required kilograms of rock to sustain high temperatures for days. While there is considerable overlap between large rock griddles and small earth ovens, rock griddles generally used fewer rocks because they did not need to remain hot for as long as earth ovens. Still fewer rocks were needed for stone boiling in generally small, pot-sized containers.
>
> Rock size is also related to feature function. Large rocks (larger than 10-cm diameter) were preferred in earth ovens and rock griddles (Schalk and Meatte 1988:8.9; Taggart 1981:148-149) because they stored heat for long periods of time. Small rocks (less than 10-cm diameter) were not preferred in earth ovens because they had a higher ratio of surface area to mass, which caused them to lose heat more rapidly than large rocks (Schalk and Meatte 1988:8.9). This is a bad quality where extended cooking is required. Large rocks should have been preferred for structure heating, be it a sweatlodge or habitation, because of the same heat retention quality. Small rocks were preferred for stone boiling because of better resistance to thermal shock and because they were easier to handle (Schalk and Meatte 1988:8.8; Taggart 1981:148-149).
>
> Ethnographic accounts and archaeological excavations attest to the differential use (preference) of smaller rocks in stone-boiling features and larger rocks in earth ovens. Small rocks <10 cm diameter are good for stone boiling because they have a high surface-to-mass ratio which allows them to store and release heat energy quickly; they are also easy to handle.
>
> Raw material is a critical factor. Certain rock types can be good for certain cooking methods and poor for others (McDowell-Loudan 1983-26; Zurel 1979:5). For example, sandstone reacts well in a rock griddle because it is generally coarse-grained and porous, which makes it elastic and able to deform in response to heating and cooling. It is not very good for stone boiling because it loses individual grains and adds grit to water (Brink et al. 1986:290-292; Jackson 1997); it also absorbs a lot of water because of its high porosity, which requires longer drying periods than fine-grained rock types (Brink et al. 1986:296). Fine-grained rocks were generally preferred for boiling, while coarse grained rocks were preferred for griddle roasting and earth-oven baking. However, some materials like quartzite were preferred whenever available. Homogeneity in mineralogy, grain size, and grain shape, as well as a strong bond make quartzite an all-purpose rock.
>
> Size grade analysis can be used to address these questions. Every time a cooking/heating facility is used, some of the rocks will fracture and/or crack. As the number of times the facility is used increases, the resultant rock sizes become smaller as rocks continue to fracture; the number of fractured rocks increases at the same time. Therefore, size grade analysis can be used to discriminate this thermal weathering process. A relatively small

number of large FCR pieces would indicate relatively less use of the rocks than a similar feature containing relatively more FCR that are smaller in size.

New lines of research are extending the range of information that can be recovered from FCR through more complex techniques such as analyzing fatty-acid residues to identify remnants of animal fat on FCR, paleo-magnetic testing to reveal whether stones were moved after heating, AMS dating of FCR samples, and examining starch grains, phytoliths, and calcium oxalate crystals on FCR and in features to provide information about plants that were cooked using FCR (Thoms 2008a and 2009).

4.5.3 FCR Analytical Methods

Several criteria were established to provide a consistent method of identifying FCR. The lack of naturally occurring cobble-size rocks within the project area aided the identification of FCR. Data collected for FCR included count, weight, and size grade. In order for a rock to be classified as FCR, it had to meet at least one of the following criteria:

1) The rock is associated with a cooking feature such as fire hearth or cooking pit. Such features may have carbon-stained (blackish) or oxidized (reddish) soil and may be other associated with other materials such as charcoal, ash, and thermally-altered fauna.

2) The rock has distinctive shapes that have been observed at archaeological sites and in ethnographic and experimental studies, such as angular blocky fragments, crenulated or jagged edges, spalls (potlids), or a variety of intermediary shapes. FCR cobbles contain the negative impression where an angular or spall piece detached.

3) The rock's fracture surfaces are fresh, unweathered, and have fairly sharp edges. The rock also lacks the characteristics of cores and lithic debris from stone knapping, such as bulbs of force, ripple marks, hinge or step terminations, and crushing.

4) The rock is unfractured and whole but has other distinctive thermal stress features such as crazing (surface cracks) or a friable and crumbly surface, especially with granitic rocks and sandstone.

5) Rocks have a reddish, pinkish, or blackish discoloration, particularly the cortical surface.

6) The rock's grain size is generally too coarse for flaking. Common rock types include granite, basalt and quartzite that originally occur in the local area as rounded cobbles with their source in glacial or outwash deposits.

Some experimental studies appear to have demonstrated that the shape of individual pieces of FCR (spall or angular) results from specific rates and methods of heating and cooling (Homsey 2009: House and Smith 1975; McDowell-Loudan 1983; McParland 1977; Wendt 1988; Zurel 1999). Angular pieces were thought to result from FCR being quickly cooled by immersion in water for stone boiling, while spalls were thought to result from slower cooling around a fire hearth. However, the results of these studies have not produced consistent results. Jackson's (1998) experimental study suggests that FCR shapes are <u>not</u> related to specific rates and methods of cooling but to rock size and duration of heating. Similar rock shapes can be produced by various types of cooking facilities.

Jackson (1998) conducted microscopic analysis of rock thin-sections subjected to various cooking facilities to examine the mechanical aspects of thermal weathering of rock. The results show that thermal weathering was highest for all rock types in the earth oven and rock griddle plates, while it was lowest in the stone boil and sweatbath plates. The thermal weathering variation is attributed to the length of heat exposure, rather than the rate of cooling. His results indicate that there is valuable research potential for the microscopic study of FCR for understanding cooking facilities and subsistence. In conclusion, additional microscopic and experimental studies need to be conducted before more reliable interpretations can be made.

4.5.4 FCR Morphology

Observations of FCR from archaeological sites and experimental studies led to the delineation of three basic FCR shape types (Jackson 1997, 1998; McParland 1977; Schalk and Meatte 1988; Thoms 1986: Zurel 1979, 1982), which are defined as follows: 1) spall types are expansion-fractures that, according to Jackson (1998), "occur because of an internal thermal gradient, where the exterior of a rock becomes hotter and expands more quickly than the interior. When stress becomes too high, a rock releases it by sloughing off curvilinear spalls or convex potlid"; 2) angular types are blocky contraction-fractures that, according to Jackson (1998), "occur because of tension stress where the exterior of a rock cools rapidly and causes cracks to form perpendicular to the surface and at evenly spaced intervals"; and 3) spall/angular types include FCR that is intermediary between the spall and angular types (Jackson 1997; Thoms 1986; Zurel 1979), which represent opposite ends of the typology continuum (McParland 1976, 1977; Thoms 1986).

Despite evidence that cooking methods (rate/methods of heating and cooling) cannot be inferred directly from FCR shapes (Jackson 1998), these shapes are recorded for this analysis because they provide a fair description of the basic shapes and properties of the FCR, are currently in use in the archaeological community, and may someday prove to have more interpretive value. In addition, the FCR analysis for this project also includes other descriptive types that were established to encompass the variety of FCR shapes and conditions that were recovered at the sites. These FCR types are summarized in Table 5.

Table 5. FCR Type Descriptions.

FCR Type	Description
Spall	Expansion-fracture, has straight or curvilinear profile following the natural shape of cobble cortical surface (like a section of orange peel), relatively thin in cross-section in relation to the width and length, also includes interior non-cortical pieces that have thin cross-sections, fracture plains are relatively large, smooth, and lack complexity
Angular	Thick, blocky, and angular pieces with fractures that are generally perpendicular to the exterior surface, sometimes with distinctive serrated or crenulated edges at the exterior surface. The length, width, thickness ratio more approximately equal compared to the relative thinness of spalls.
Spall/Angular	Intermediary pieces between the Spall and Angular types.
Crumb	Crumbs are small pieces, typically less than 1/2" (SG2) that do not fit other categories
Cobble (Nonfriable)	These are whole cobbles that have cortical discoloration and/or cracks on the surface but do not have spall or angular fractures.
Cobble (Friable)	These are whole cobbles that have a crumbly surface or portion of the surface, which is most common on granitic or sandstone FCR. They do not have spalls or angular fractures.
Cobble with Spall	These are mostly whole cobbles that have one or more spall fractures.
Cobble with Angular	These are mostly whole cobbles that have one or more angular fractures.
Friable Rounded Piece	These are round-shaped FCR with a crumbly surface, which is most common on granitic FCR, classified as crumb if smaller than 1/2" (SG2)
Split Cobble	Cobble that has split
Indeterminate	FCR that do not fit any other categories

5. LITERATURE SEARCH

5.1 Archival and Background Research

Archival and background research was conducted to determine whether any previously identified archaeological sites or potential historic sites are located within approximately one mile of the project area. FCRS staff conducted an initial review of sites located near the project area prior to fieldwork. Additional research was conducted following fieldwork at the MnHPO and the Minnesota Historical Society Library in St. Paul. Site inventory files, USGS 7.5' quadrangle site location maps, and survey reports were reviewed to provide information on the previously recorded archaeological sites and previous investigations. Mr. Tom Cinadr, Survey and Information Management Coordinator at MnHPO, conducted a search of the site file database and provided a list of sites in the vicinity of the project area.

5.2 Previously Recorded Archaeological Sites

Thirty-two previously recorded archaeological sites are located within approximately one mile of the project area (Figure 4 and Table 6). Some of the sites in Figure 4 are mapped together because of their proximity. The sites within one mile include precontact period mounds (earthworks), precontact period lithic scatters and find spots, and precontact period artifact scatters. Previous surveys and sites in the area are discussed following the table.

Table 6. Previously Recorded Sites within One Mile of the Project Area.

Site Number	Location	Site Type	Comments	Distance to Project Area (meters)	Reference
21CA112	T135N, R29W, SW/NE/SE ¼, Sec 21	Woodland period isolated artifact and burial	1 sherd on surface; 3 human skeletons disinterred during private construction in 1934	1660	Johnson 1979
21CA113	T135N, R29W, SW/NW/NW ¼, Sec 21	Woodland period artifact scatter and possible earthworks	2 sherds on surface, possible eroded mounds described as "sketchy"	110	Johnson 1979
21CA118	T135N, R29W, NW/SE/WW ¼, Sec 9	Woodland period artifact scatter	Undefined sherds and flakes recovered by landowner	1170	Harrison 1986
21CA119	T135N, R29W, NW/NE/NW ¼, Sec 16 & SW/SE/SW ¼, Sec 9	Woodland period earthworks	30+ conical and linear mounds identified in 1978, 5 verified in 1983	620	Johnson 1979, Birk 1983
21CA120	T135N, R29W, NE/NW/NW ¼, Sec 16	Woodland period earthworks	2 mounds on ridge top above lake	620	Johnson 1979, Birk 1983
21CA133	T135N, R29W, N½ SE¼ Sec 30	Precontact period artifact scatter	Lithic debris and ceramics from shovel tests and excavation units	820	Anfinson 1979
21CA134	T135N, R29W, E½ NE/SE¼ Sec 30	Precontact period artifact scatter	Lithic debitage and ceramics from shovel tests	550	Anfinson 1979
21CA145	T135N, R29W, SE/SE ¼, Sec 9	Precontact period artifact scatter	6 flakes and 1 piece of calcined bone from shovel test	1760	Birk 1985
21CA147	T135N, R29W, SE/SE ¼, Sec 16	Historic logging camp; Woodland artifact scatter and possible earthworks	Lithics, FCR, and 2 sherds. Land-owner said that 10 mounds destroyed by construction.	1490	Birk 1985

Table 6. Continued.

Site Number	Location	Site Type	Comments	Distance to Project Area (meters)	Reference
21CA148	T135N, R29W, NE/NW/NE ¼, Sec 16	Precontact period artifact scatter	Brainerd Ware sherd, corner-notched projectile point, lithic debitage, FCR from shovel tests	1340	Birk 1983
21CA149	T135N, R29W, NE/NW/NE ¼, Sec 16	Possible precontact period habitation	2 pieces of unburned mammal bone from shovel test	1320	Birk 1983
21CA150	T135N, R29W, NW/NE/SW ¼, Sec 9	Precontact period lithic scatter	3 pieces of lithic debitage from shovel tests	1800	Birk 1983
21CA151	T135N, R29W, S ½ of /SW/NE ¼, Sec 9	Precontact period artifact scatter	sherd and 5 pieces of lithic debitage from shovel tests	1800	Birk 1983
21CA171	T135N, R29W, NW/SW/NW ¼, Sec 16	Woodland period artifact scatter	13 sherds on surface	475	Peterson et al. 1993
21CA224	T135N, R29W, E ½ of /NE/SW ¼, Sec 17	Precontact period lithic scatter	14 lithics on surface	730	Harrison 1986
21CA225	T135N, R29W, NW/NE/SW & SW/SE/NW ¼, Sec 16	Precontact period lithic scatter	4 lithics in cut bank exposure	400	Harrison 1990
21CA228	T135N, R29W, NE/SE/SE & NW/SW/SW ¼, Sec 8	Precontact period artifact scatter	Site form is missing from MnHPO files	1150	MnHPO database
21CA469	T135N, R29W, NE/NE/SE ¼, Sec 16	Precontact period lithic isolate	Quartz biface on surface	1600	MnHPO files
21CA470	T135N, R29W, NE/NW/SE ¼, Sec 9	Precontact period lithic isolate	Quartz biface from shovel test	1800	MnHPO files
21CA480	T135N, R29W, SE/NW/NW ¼, Sec 29	Precontact period lithic scatter	Unspecified artifacts	320	Anfinson 1979
21CA481	T135N, R29W, SE/NE/SW ¼, Sec 20	Precontact period lithic scatter	Unspecified artifacts	320	Anfinson 1979
21CA482	T135N, R29W, NW/NE/NW ¼, Sec 16	Woodland period artifact scatter and precontact period lithic scatter	Net-impressed sherd and lithic artifacts in shovel tests. Adjacent to mounds at 21CA119 and 21CA120	620	Birk 1983
21CA483	T135N, R29W, NW/NE/NW ¼, Sec 16	Woodland period artifact scatter and precontact period lithic scatter	Middle to early-late woodland sherds, lithics, and FCR. Archaic component suspected. Adjacent to mounds at 21CA119 and 21CA120	620	Birk 1983
21CA484	T135N, R29W, NW/NE/NW ¼, Sec 16	Woodland period artifact scatter and precontact period lithic scatter	2 sherds and lithic from shovel tests. Adjacent to mounds at 21CA119 and 21CA120	620	Birk 1983
21CA485	T135N, R29W, NW/NE/NW ¼, Sec 16	Woodland period artifact scatter and precontact period lithic scatter	Kathio rim and unspecified lithics from shovel tests. Adjacent to mounds at 21CA119 and 21CA120	620	Birk 1983

Table 6. Continued.

Site Number	Location	Site Type	Comments	Distance to Project Area (meters)	Reference
21CA487	T135N, R29W, SW/NE/NW ¼, Sec 16	Precontact period artifact scatter	Possible FCR from shovel tests	620	Birk 1983
21CA488	T135N, R29W, NE/NE/NW ¼, Sec 16	Precontact period artifact scatter	Unspecified lithics and possible FCR from shovel tests	620	Birk 1983
21CA489	T135N, R29W, NW/NW/NE ¼, Sec 16	Precontact period lithic scatter	Unspecified lithic debitage and end-scraper from shovel tests	620	Birk 1983
21CA490	T135N, R29W, SE/NE/NW ¼, Sec 16	Precontact period lithic scatter	Unspecified lithics and possible hammerstone from shovel tests	620	Birk 1983
21CA491	T135N, R29W, SW/NE/NW ¼, Sec 16	Precontact period artifact scatter	Possible FCR from shovel tests	620	Birk 1983
21CA576	T135N, R29W, NW/SE/NW ¼, Sec 16	Woodland period artifact scatter	ceramics, quartz biface fragment, unidentified faunal remains from shovel tests	620	Skaar 1999
21CW95	T135N, R29W, NW/SW/NW ¼, Sec 15	Precontact period artifact scatter	Landowner report of bison teeth and lithic biface recovered from edge of a marsh	1700	Birk 1985

5.3 Previous Archaeological Surveys

The Gull Lake area is clearly associated with the nearby Mille Lacs locality (Johnson 1979, Birk 1983), which has been a major focus of archaeological investigation in Minnesota. Summaries of this work are contained in Mather and Abel (2000) and Florin et al. (2012). Archaeological interest in the area started with the recording of mounds and earthworks by Hill and Lewis in the late nineteenth century. Jacob Brower followed these early surveys in the early twentieth century, with excavations focusing on the large lakeshore sites associated with groups of burial mounds. Brower identified the Mille Lacs area as ancient “Kathio”, the ancestral homeland of the Dakota people. His work continued with Alfred Jenks and Lloyd Wilford of the University of Minnesota in the 1930’s. Data from these early excavations was ultimately the basis of Wilford’s definition of the Mille Lacs Aspect, containing the Malmo and Kathio foci.

Mille Lacs Research continued into the 1960’s and 1970’s as University of Minnesota students worked at more than twenty sites in and around Kathio State Park. The Kathio sites were registered as a National Historic Landmark in the 1970s. Archaeology in the Mille Lacs locality was advanced significantly by integration of archaeology and paleoecology after 1968, when pollen cores taken from Ogechie, Onamia, and Black Bass lakes provided evidence for the evolution and development of local environments and resource procurement. The Lake Ogechie cores provided a full Holocene environmental sequence for the region. Despite the emphasis on Mille Lacs and the amount of work that has been done, there is still a lack of detailed analysis of the ceramic sequence for the region.

The University of Minnesota conducted the first formal excavations at Gull Lake during the 1969-1974 field seasons (Birk 1983). These excavations were focused on site 21CA6 at the northern end of Upper Gull Lake and on NRHP eligible sites 21CA37 and 21CA58 at the southern outlet of the lake. Comments in the MnHPO site files indicate that 21CA6 would likely have been eligible for listing on the NRHP, but it was determined that the site would not be impacted by planned improvements to

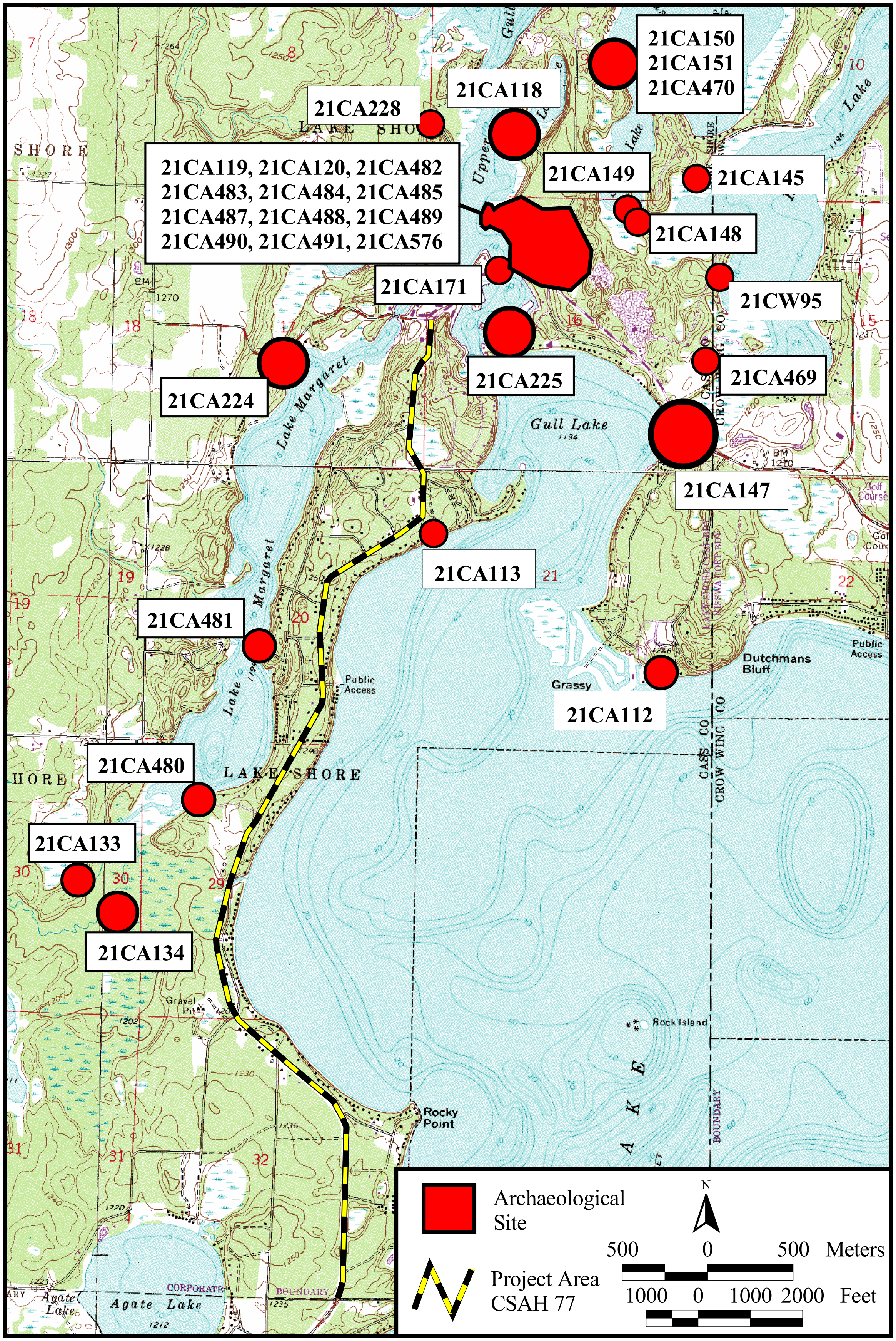


Figure 4. Location of Previously Recorded Archaeological Sites on USGS 7.5' Quadrangles.

County Road 29, and no further work was conducted. Artifacts recovered at 21CA6 include a nearly-complete ceramic vessel with a net- or fabric-impressed body and reed impressions around the rim, a wide orifice, no neck constriction, and a subconoidal base; a Blackduck rim sherd; Blackduck body sherds; three triangular Late Woodland projectile points; four side-notched points; five corner-notched points; and four stemmed points that “fall into the range of Durst” (MnHPO site files).

Portions of the 18 mounds identified at 21CA37 (Gull Lake Mounds) were excavated in 1969, and it was determined that the site was occupied by “peoples affiliated with the Malmo focus” (Johnson 1971). In addition to human remains, a large quantity of ceramics was recovered, including a complete Brainerd-ware vessel and a large number of net-impressed sherds with sand or grit temper. A number of St. Croix series and Kathio series rim sherds were found, along with a single Blackduck sherd that was determined to be “intrusive’. Johnson notes that the site did not appear to have been occupied after 1,000 A.D., based on the relative absence of Kathio, Blackduck, Sandy Lake, and Ogechie pottery.

Excavations were conducted at 21CA58, which may be associated with 21CA37 (MnHPO site files) in 1973 (Caine 1974). A large quantity of lithic debitage was recovered along with scrapers, two unnotched triangular points, one side-notched point, and five corner-notched points of quartz, quartzite, and chalcedony. The author notes that a large percentage of the debitage is quartz or quartzite. Ceramics recovered from the site include many cord-wrapped-paddle body sherds and smaller quantities of smoothed and net-impressed body sherds. Decorated body sherds include dentate-marked, twisted-cord marked, and trailed-line incised. Two rim sherds of the St. Croix type were recovered along with six Malmo, 14 Sandy Lake, and nine “Mississippi” rims with smoothed surfaces and rounded lips. These rims have a combination of decorative features characteristic of Mississippian pottery along with the grit temper characteristic of the Woodland period, and the author suggests that they may be of the Ogechie type.

Additional investigations conducted in the late 1970’s and early 1980’s for the Corps of Engineers and MnDOT added to the understanding of site types and locations at Gull Lake. Birk (1983:5) summarizes the results of these early investigations: “The archaeological studies have shown that the Gull Lake basin contains numerous artifacts from the late Archaic cultural period… [and that] Woodland cultural sites… are more easily recognized and probably more prevalent than Archaic sites.” Birk also points out that the majority of ceramics recovered from Gull Lake area sites date to the Middle and early-Late Woodland periods, while Blackduck, Sandy Lake, and Ogechie ceramics are poorly-represented.

Many of the sites identified near the current project area were recorded during a Phase I survey for the Causeway-On-Gull Resort in the City of Lakeshore (Birk 1983). The project area comprised a 45-acre parcel on the east side of Upper Gull Lake, just northeast of the current project area. Birk identified 10 precontact period habitation or special-use sites and verified two mound groups. The mound groups (21CA119 and 21CA120) had been identified by the University of Minnesota (Johnson 1979) during a survey of the area for the Corps of Engineers and additional work was recommended. During the 1978 survey, a total of 20 circular and 18 linear mounds were recorded. Birk’s study of the mound groups confirmed that 21CA119 had three linear and two circular mounds arranged in a north-south row on the edge of a high terrace overlooking Upper Gull Lake. Birk found that 21CA120 contained two intact low circular mounds on the crest of a narrow ridge, confirming the results of the 1978 survey. Also during the 1978 survey, site 21CA113 was identified as a Woodland period habitation and mound site, but the site file notes that the “mounds” are questionable, and no further investigating was conducted. Artifacts from the site include two shell-tempered body sherds that were recovered from the surface.

Birk (1985) also identified sites 21CA145, 21CA147, and 21CW95, among others, during a survey along the shorelines of four small, interconnected lakes (Bass, Spider, Roy, and Nisswa) that together form the northern end of the Gull Lake Reservoir. Twenty-three previously unrecorded sites were identified during the 1983-84 field seasons, along with a number of historical features such as railroad cuts, roadways, and trash dumps.

A survey conducted for the proposed rerouting of a portion of CSAH 77 (Anfinson 1979) adjacent to Lake Margaret in the City of Lakeshore resulted in the identification of four precontact period sites (21CA133, 21CA134, 21CA480 and 21CA481) containing "unspecified" lithic debitage and smooth-surfaced ceramics recovered from the surface and from shovel tests and excavation units. Additional work was recommended for 21CA133 and 21CA134, but the proposed construction project did not proceed, and no further information was gathered. Sites 21CA480 and 21CA481 were determined to be outside of the project area, and no further work was conducted. The large range in site numbers is due to some of the sites not being assigned a state site number at the time of the survey.

Christina Harrison conducted surveys of a wastewater treatment system for a resort on Lake Margaret, City of Lakeshore in 1986 and again in 1990 (Harrison 1986, 1990). Site 21CA225 was identified in the exposed soil of a cut bank along a residential road. The site area was determined to have no research potential due to disturbances from construction and landscaping impacts.

The MnDNR conducted a survey in 1999 for a property acquisition at the Gull Lake Narrows, which is located just east of the northern end of the current project area. Site 21CA576 was identified, and based on shovel test results, the researchers determined that the site area was relatively undisturbed and limitations on development were established to protect the site area (Skaar 1999). Artifacts recovered included sand/grit-tempered sherds with exfoliated surfaces. The site is very close to 21CA171, which was identified in 1992 during a survey for the replacement of the CSAH 77 Bridge at the Narrows (Peterson et al. 1993). Site 21CA171 was described as a precontact period habitation, based on the presence of grit-tempered, cordmarked ceramic sherds. The researchers noted that most of the site area had been destroyed by the construction of the original bridge and roadway, with only a narrow remnant of the original terrace remaining.

Other ceramic-bearing sites located nearby, but beyond one mile of the current project area (from MnHPO site files) include: 21CA147 with two grit-tempered, possibly Blackduck sherds; 21CA152 with a grit-tempered rimsherd displaying a series of punctates on the exterior; 21CA153 with a grit-tempered, cord-wrapped-stick impressed sherd; 21CA154 with grit-tempered, fabric- or net-impressed sherds that are likely Brainerd Ware; 21CA155 with grit-tempered, cordmarked sherds that are likely Onamia; and 21CA157 with Brainerd and Kathio ware sherds.

5.4 Historic Map and Air Imagery Review

Several historic maps were examined to aid in identifying potential historic period archaeological resources within the project area. The earliest map examined was the General Land Office (GLO) survey maps of 1865, which was available online (http://www.mngeo.state. mn.us/glo/).
No potential cultural resources are depicted on the GLO map. Copies of historic plat maps in Cass County for 1874, 1925, 1930, 1954, and 1956 were also reviewed (Andreas 1874; Hixson and Company 1925, 1930; and Nelson Company 1954). However, none of the 1874 to 1930 maps contain the township of the project area. The 1954 and 1956 plats do not depict structures. The earliest aerial photos of the project area are from 1939 and 1955, and they were obtained online from the Borchert Map Library at the University of Minnesota (http://map.lib.umn.edu/ mhapo/). The photos indicate that land use in the project area was similar to that observed at the time of survey. Extensive woods cover the area, and CSAH 77 and many other connecting roadways were already constructed by 1939.

6. CULTURE HISTORY

by James Lindbeck

The following culture history is mostly derived from a data recovery report at Mille Lacs Lake (Florin et al. 2012). The culture history of the Mille Lacs Locality is similar to the Gull Lake area, given their proximity (approximately 30 miles) (Johnson 1979, Birk 1983). This discussion, however, generally avoids the *Phases* that are specific to the Mille Lacs Locality and instead uses the structure of culture history common to the rest of the state. The framework of the discussion is derived primarily from *Archaeology of Minnesota: Prehistory of the Upper Mississippi Region* (Gibbon 2012); *Minnesota Archaeology: The First 13,000 Years* (Gibbon and Anfinson 2008); and the *Minnesota Statewide Multiple Property Documentation Form for the Woodland Tradition* (Arzigian 2008). The discussion follows the organization of cultural periods used by Gibbon (2012) and uses calibrated dates.

The culture history of the project area is complex for many reasons. In addition to the lack of detailed information about much of the precontact period across the state and upper Midwest, the project area is located near the boundary of three MnHPO Archaeological Regions that have somewhat different precontact developments. These MnHPO regions include: 4s – Central Lakes Deciduous South; 4e – Central Lakes Deciduous East; and 4w – Central Lakes Deciduous West.

The Central Lakes Deciduous region is characterized by a landscape of moraines, till plains, outwash plains, and an abundance of lakes and streams. The Mississippi River flows through the region and the St. Croix River forms the eastern boundary. Streams and rivers drain east into these rivers or west into the Red River, which is located near the western boundary of this region. The climate of the region is highly variable and was likely unsuitable for horticulture in the northern ranges. Vegetation at the time of Euro-American contact was mostly a mixed deciduous-coniferous forest that sustained species such as white-tailed deer, beaver, bear, fish and waterfowl, and bison and elk in the west Wild rice beds were abundant in many of the lakes and rivers of the Central Lakes Deciduous region.

6.1 Paleoindian Period (13,200 to 9500 BP)

The first people known to have inhabited the Gull Lake and Mille Lacs region lived during the Paleoindian period, which predates the more well-researched cultures that created the villages and burial mounds around the large lakes of the area. Relatively little is known about the Paleoindian period, although it accounts for much of the human history of the state.

The Paleoindian period was a time of rapid environmental change as the glaciers retreated from Minnesota (Wright 1974). Substantial changes in vegetation, wildlife, waterways, and the landscape occurred as a result of the ameliorating climate, and Paleoindian lifeways reflect adaptations to these rapidly changing landscapes. The first Paleoindian peoples in the region encountered a subarctic environment with no direct parallel in the modern world. The setting of the Gull Lake/Mille Lacs area at that time can be approximated as tundra, with open, wind-swept vistas (McAndrews 2000; Pielou 1991). The large lakes were newly-formed from meltwater of the wasting Superior Lobe, the advance of which had created natural dams that contained the water in large basins such as Gull Lake. It is not known what animals lived in the area at that time, but it can be assumed that mammoths, giant bison, and other now-extinct megafauna were present in the general vicinity. Fish would have been present in the big lakes and rivers soon after the establishment of open water (e.g., Pielou 1991) and it is likely that subsistence also included the gathering of wild plant resources, although it is not known to what extent Paleoindian people utilized these resources.

The lack of excavated and recorded Paleoindian sites in Minnesota makes it difficult to identify Paleoindian site types and assess their distribution across the landscape. No burials have been found in the region dating to the Paleoindian period, and there is no direct data on subsistence. While it is believed that Paleoindians were highly mobile and traveled in small bands, the paucity of known sites hinders discussion of settlement patterns. The known sites do seem oriented toward the current bodies of water, but it should be remembered that these are the areas that have seen the majority of archaeological survey and therefore these sites should not be presumed to represent the actual settlement patterns of the Paleoindian period. It is not clear whether the Paleoindian population in Minnesota was small or whether a large number of sites have not been identified because they were destroyed or deeply buried. Research in other parts of the country, where Paleoindian sites are more common, suggests that the margins of lakes and swamps are good site locations, and these landscapes were prevalent in late-glacial and early Holocene periods of central Minnesota.

The Paleoindian period is divided into early (13,200 to 12,500 BP) and late (12,500 to 9500 BP) periods, defined by the use of fluted (early) or plano (late) projectile points for hunting and butchering game animals.

6.1.1 Early Paleoindian

Fluted points such as Clovis, Folsom, and Gainey are very rare in Minnesota, and there is only sparse archaeological evidence of early Paleoindians near the project area (Buhta et al. 2011; Morrow et al. 2016). A Gunflint Silica point from northeastern Minnesota and a quartz point from the Whitefish chain of lakes demonstrate use of locally available raw materials during this period (Romano and Johnson 1990). Most of the fluted points recorded in Minnesota are isolated finds that lack specific provenience data. A pattern noted in Wisconsin suggests the preponderance of fluted points in the southern portion of the state, presumably in relation to the former position of the glacial ice (Mason 1997:87).

Early Paleoindian people are traditionally thought to have been nomadic big-game hunters, an interpretation derived from the dramatic and defining finds of lanceolate points at megafauna kill sites in the American southwest. These now-famous discoveries at places such as Blackwater Draw and Folsom in New Mexico initially established the antiquity of the Paleoindian tradition and the association of Clovis and Folsom points, respectively, with mammoths and other extinct megafauna. Mason (1981:97) points out, however, that, “as eastern fluted point sites were found and investigated, and dramatic kill sites eluded discovery … enthusiasm for this idea waned.” While paleontological finds of extinct megafauna have been made in Minnesota, only the Itasca Bison Kill site (Shay 1971), which contained the extinct bison type *Bison occidentalis*, also contained cultural materials. The closest known megafauna kill (or possibly scavenging) sites are in Wisconsin, including several on beach ridges of Glacial Lake Michigan. The Boaz Mammoth in southwestern Wisconsin is closer still, but its cultural association cannot be proved due to the circumstances of the find. That discovery was made in the late nineteenth century, but an association of the mammoth with a Hixton orthoquartzite fluted point seems probable (e.g., Overstreet 1993, 1996; Mason 1981, 1997).

6.1.2 Late Paleoindian

Late Paleoindian points are more frequently found in Minnesota (Florin 1996; Morrow et al. 2016), probably reflecting increasing population levels. Collectively referred to as Plano, these points retain the lanceolate shape of Clovis and Folsom but lack the distinctive flute and resemble stemmed and lanceolate types from the Plains.

Plano points are the oldest artifacts recovered thus far at the Mille Lacs Locality, with finds at Bradbury Brook (a tributary of the Rum River), on the eastern shore of Lake Onamia, in Kathio State Park, and at St. Alban's Bay of Mille Lacs Lake. The Lake Onamia point (possible a Browns Valley type) is made of Swan River Chert, indicating an origin to the west of Mille Lacs. An unprovenienced Plano point is present in the Jacob Brower collection from Mille Lacs County (Florin 1996).

Bradbury Brook, one of the most well-documented Paleoindian sites in the state, is located within the Mille Lacs Locality. It is a late Paleoindian lithic procurement and initial reduction site associated with the Alberta Complex (Malik and Bakken 1993, 1999). The Alberta Complex dates to approximately 10,000 to 9,000 BP and appears to center on the Plains, with Bradbury Brook near its eastern perimeter (Malik and Bakken 1993:88). Lithic use during the Late Paleoindian tradition at the Mille Lacs Locality has been characterized as the K-Pattern by Bakken (2000). This is derived from intensive use of Knife Lake siltstone, as first identified at the Bradbury Brook site (Malik and Bakken 1993, 1999). Bakken suggests that the geographic extent of the K-Pattern includes much of east-central and northeastern Minnesota. The use of bifacial reduction technology is evident at K-Pattern sites in the patterned Plano points. One copper tool type (McCreary) is suggestive of Plano lanceolate point forms, and Steinbring (1970, 1975) along with Gibbon (1998) suggest that it is a Late Paleoindian artifact type. If so, then McCreary points are the oldest known copper tools in the region, and they predate the classic "Old Copper" assemblages of the Archaic.

Paleoindian Sites in the Area:

<u>Bradbury Brook</u>:

The Bradbury Brook site (21ML42) is one of the most intensively excavated sites in the Mille Lacs area, and it is the oldest radiometrically dated site in Minnesota. This site was a quarry area utilized during the Late Paleoindian period, with a focus on the procurement of siltstone for stone tool manufacture. An undisturbed, sub-plowzone area of the site produced evidence of separate knapping stations with anvils, the basal fragment of an Alberta point, and a radiocarbon date of 9,220+/-75 BP. Calibration of that date suggests that Bradbury Brook may be 1000 years older.

<u>Rum River Pit</u>:

The Rum River Pit site (21ML47) is located in an agricultural field on a small rise overlooking the Rum River. A total of 162 lithic artifacts were piece-plotted within the field. Although the site was found to occupy the entire 10-acre field, the majority of the artifacts (83%) were found in two discrete clusters near the river. Both areas contained concentrations of siltstone debitage that are virtually identical to that from the Bradbury Brook site (Bakken 2000; Mather 1991; Peterson et al. 1991:80-81).

<u>Rum River Terrace</u>:

The Rum River Terrace site (21ML63) is located within Kathio State Park, a short distance from Petaga Point. The Paleoindian component of the site, discovered during Phase II formal excavation, is represented by the base of a Plano projectile point.

<u>Pike Point Summit</u>:

The Pike Point Summit Site (21CW139) is located on a prominent knoll overlooking the northwest shore of Mille Lacs. Shovel testing of this relatively small area produced an assemblage of siltstone and basalt debitage and one Scottsbluff-like lanceolate point. The point is siltstone, with the same heavily patinated surface seen in the Bradbury Brook assemblage. The debitage here and at two adjacent sites appears to reflect Bakken's (2000) K-Pattern.

Upper South Harbor:

The Upper South Harbor Site (21ML55), located on the northeastern shore of Lake Onamia, was identified through the recovery of a Late Paleoindian point from a shovel test. The point is made of Swan River Chert, and is similar to the Browns Valley type (Bakken 2000; Kluth and Kluth 1996).

6.2 Archaic Period (12,500 to 2500 BP)

The Archaic period spanned the time when the post-glacial environment of Minnesota continued to moderate, and ecosystems similar to those of modern times evolved. During this time, the northern hemisphere experienced an episode of warm and dry weather that is referred to by many names, including the Altithermal, the Middle Holocene Climatic Optimum, and the Prairie period. The peak of this warming period was reached around 7800 BP, by which time most of Minnesota was dominated by a prairie landscape. The hot and dry conditions persisted at their maximum for about 1000 years before gradually giving way to a cooler and wetter climate by about 5000 BP that led to the evolution of ecological communities similar to those of the modern era. The dramatic environmental changes of the Altithermal would have caused major shifts in the lifeways of the people, as animals of the forest such as moose and caribou were replaced by prairie species such as bison. Plant communities also would have changed with the spread of the prairie, and wild rice may have been gathered during this time.

It is likely that Archaic period populations engaged in seasonal rounds of resource gathering as the climate stabilized following the retreat of the glaciers. Small bands would have returned to seasonal campsites, and territories would have been relatively limited. With the onset of prairie conditions, however, resources became less predictable and populations would have been pushed into shrinking areas surrounding the largest lakes and streams. The appearance of groundstone milling tools suggests that the people began to rely more on seeds and legumes; and domesticated dogs, used for transport, indicate that longer-distance travel was required to keep up with migratory bison herds. Group sizes appear to have remained small throughout the Archaic, and known site locations indicate that a high value was placed on a proximity to game, water, and supplies of wood.

Geological processes resulting from the climatic changes of the Altithermal have buried or eroded many Archaic sites, and a relatively small number have been excavated. For these reasons, our knowledge of Archaic period lifeways is still very limited. The Archaic tradition in the archaeological record is characterized by the absence of Paleoindian projectile points and ceramics and the presence of specific types of stemmed and notched projectile points, groundstone tools, native copper artifacts, and some exotic materials such as marine shell. As with the earlier Paleoindian sites, most recorded Archaic sites are small, short-term camps and activity areas, and most finds from this period are in southeastern parts of the state or in southern Wisconsin and Iowa.

The classic, and first, definition of the Archaic was from the Lamoka Culture of western New York, and includes traits such as a diversified resource base, roasting pits for nuts, groundstone tools, and rectangular houses (Mason 1981:147; Ritchie 1965). Further research identified a more generalized Archaic pattern throughout much of the eastern Great Lakes, which became known as the Laurentian Archaic. Common elements of the Laurentian Archaic include a diversified hunting/fishing/gathering economy, large side-notched points, hafted scrapers, bone tools, ground slate, and other groundstone tools. Slate is more prevalent to the east, while copper is more common in the west, and there is some overlap in tool forms (Mason 1981:160-162).

Studies of the Archaic tradition in the region suggest that there was a meeting of cultures from the eastern woodlands and the western prairies, a pattern that continues through the Woodland tradition. Other Great Lakes Archaic cultures include the Shield Archaic to the north and the Old Copper Culture of the western Great Lakes (Mason 1981:131; Wright 1995). Old Copper is concentrated in eastern Wisconsin, along the Lake Michigan shore. Known finds rapidly decrease in density to the west, but have been recorded as far away as Alberta (Gibbon 1998; Steinbring 1970, 1975; Stoltman 1997). There is a sporadic presence of Old Copper culture tools in the Gull Lake/Mille Lacs area (Bleed 1969), along with projectile point types and lithic raw materials from the west (Gibbon 1998). A ground slate tool recovered from the Cunz site near Mille Lacs (Halloran 2000) suggests a possible connection to the Laurentian Archaic cultures of the east.

The Archaic has traditionally been divided into Early, Middle, and Late periods, and Gibbon (2012) argues that the Early Archaic period in Minnesota overlapped the Late Paleoindian period for perhaps thousands of years. He emphasizes that this was not necessarily a time of transition from Paleoindian into Archaic, but that the two cultures were contemporaneous and may have interacted in various ways. When this overlapping period is included, the Archaic Period in Minnesota may be understood to extend back as far as 12,500 BP and the Paleoindian Period to as late as 8000 BP. There are a few sites in Wisconsin that have yielded Late Paleoindian points in association with Archaic notched points (Pleger and Stoltman 2009). The transition from Paleoindian to Archaic appears to have been more abrupt and of shorter duration in the eastern and southwestern United States than it was in Minnesota. Gibbon (2012) adds the modifier "Eastern" to his discussion of the Early Archaic in Minnesota for complexes presumed to be derived from the East, which distinguishes it from the "Prairie" Archaic period that is centered on the northeastern plains, including southwestern Minnesota. Anfinson (1997:35) points out that the Prairie Archaic period of the northeastern plains region began about 7500 years ago, and the Archaic period of the eastern Midwest may have begun as early as 10,000 years ago.

6.2.1 Early Eastern Archaic

Most of the information we have about the Early Eastern Archaic period in the upper Midwest (ca. 12,500 to 9500 BP) comes from sites in the mid-south and central Mississippi valley region. The chronology of the various Archaic periods is not firmly established, and dates from adjacent areas are later than those proposed by Gibbon (2012). The Early Archaic period in Iowa extends from 10,000 to 8500 BP (Benn and Thompson 2009) and from 10,500 to 7500 BP (Alex 2000). In Wisconsin the period extends from 11,500 to 7500 BP (Pleger and Stoltman 2009).

There has not been a comprehensive study of Early Eastern Archaic sites and site distributions in Minnesota, and therefore Gibbon and Anfinson (2008: Chapter 5) state that there is "… little useful to say about that tradition's sites and their distributions in the state." Most Early Eastern Archaic projectile points recovered in Minnesota have come from the southeastern part of the state, although a St. Charles point was found in Martin County in the west.

Classic Early Eastern Archaic point types that have been recognized in Minnesota include Thebes, St. Charles, Kirk Serrated, Graham Cave, and Hardin. Except for the stemmed Hardin type, the Early Eastern Archaic points are generally medium to large size, side- or corner-notched points that lack the parallel flaking characteristic of Late Paleoindian points. The Kirk type is generally smaller than the other types. Gibbon and Anfinson (2008) state that Hardin is considered a likely Late Paleoindian/Early Archaic transitional point form that may have developed in the mid-continent.

Early Eastern Archaic points are often associated with thin scatters of non-diagnostic artifacts such as scrapers, blades, and point blanks. Other materials likely used by Early Eastern Archaic people such as wooden tools, textiles, and bone implements have not survived in the archaeological record.

6.2.2 Middle Archaic

The Middle Archaic in Minnesota spans the period of roughly 9500 to 5000 BP, although dates from adjacent areas are later than those proposed by Gibbon (2012). Few Middle Archaic sites have been discovered in the northern parts of the state compared to more southerly portions of the Midwest. Therefore, the timing, material culture, and lifeways of this period are not well known. The Middle Archaic period in Iowa extends from 8500 to 4500 BP according to Benn and Thompson (2009) and from 7500 to 5000 BP according to Alex (2000). In Wisconsin the period extends from 7000 to 3700 BP (Pleger and Stoltman 2009). This period includes the peak of the Altithermal episode, and the climatological and ecological changes of that time had profound impacts on subsistence and settlement patterns. Warming and drying during the period would have been dramatic, with prairie spreading across northwestern and southern Minnesota, except for the southeastern corner. During peak warming circa 7800 BP, the project area would have been in forest just east of the prairie-forest boundary. Archaeologically, the influence or presence of prairie complexes and seasonal prairie adaptations by fringe forest peoples would be likely.

Middle Archaic projectile points are small to medium-sized and generally smaller and less well-made than the points from the Paleoindian period, and there is an increased use of local cherts. These points were most likely attached to atlatl darts rather than spears and were thrown with an atlatl. Diagnostic Middle Archaic point types common to Minnesota are divided into two broad categories (Eastern Woodlands and Plains), based on their presumed region of origin outside of Minnesota, and by the dates (*Early Phase* and *Late Phase*) of their presence in those regions (Gibbon 2012; Gibbon and Anfinson 2008; Morrow et al. 2016). *Early Phase* points from the Eastern Woodlands include the Raddatz, Fox Valley, and Osceola types. *Late Phase* Eastern Woodland types include Matanzas, Benton, and Elk River. Point types of the *Early Phase* in the Plains include Simonsen, Little Sioux, and Oxbow. *Late Phase* point types from the plains include McKean and Table Rock. Many of the Middle Archaic point types continued into the Late Archaic. Other artifacts that were developed in the later portion of this period, and more fully in the Late Archaic, include ground stone tools, such as grooved axes and mauls, manos, metates, and apparatus for the atlatl, including bannerstones, gorgets, and boat stones.

The social organization during the Middle Archaic period is poorly-understood but it is likely that the need to adapt to changing environments and the hunting of bison may have led to the integration, at least seasonally, of small family-scale bands into larger groups that could more efficiently track and hunt the migratory animals. Burials from the period found in northwestern Iowa reveal that people were interred individually in pits with red ochre and ritual items. While population sizes likely remained fairly small during the period and were limited by the availability of resources, it is difficult to make estimates because people are believed to have gathered resources from a wide variety of habitats throughout the year.

6.2.3 Late Archaic

The Late Archaic in Minnesota begins around 5000 BP, as a cooler and moister climate ushered in the beginnings of today's environmental conditions and biomes; a sequence that was completed by around 2500 BP. Late Archaic dates from adjacent regions are generally similar to those proposed by Gibbon (2012). In Iowa the period extends from 4500 to 2500 BP according to Benn and Thompson (2009) and from 5000 to 2800 BP according to Alex (2000). In Wisconsin the period extends from

3700 to 2400 BP (Pleger and Stoltman 2009). During this time, smaller lakes that had dried up during the Altithermal once again filled in. Forests in the northern and southeastern part of the state expanded as the prairie retreated west and south. These climatic and environmental changes led to the decrease of bison as the main game animal in reforested areas and the arrival of forest animals into their historical ranges. Bison continued to be a primary species across most of southern Minnesota, except in the southeast.

The Late Archaic is defined by diagnostic side-notched and stemmed projectile point types along with groundstone tools (such as manos, matates, mauls, and axes), the use of communal burial sites without mounds (until the period of transition between Late Archaic and Early Woodland), and the increased presence of exotic raw materials (such as native copper and marine shell). Diagnostic Late Archaic point types are divided into regional clusters (Gibbon 2012:79). The *Upper Mississippi River Valley Region* includes the Large Side-Notched Cluster, the Durst Cluster, and the Late Archaic Stemmed Cluster among others. The *Central Mississippi River Valley Region* includes the Table Rock Cluster, the Etley Cluster, the Nebo Hill Cluster, and the Wadlow Cluster. The *Northern Plains region* includes the McKean and Oxbow Clusters. The *Southeast Region* includes the Eva Cluster, the Benton Cluster, the Ledbetter Cluster, and the Dickson Contracting Stem Cluster. As Gibbon notes, however, some Late Archaic point types overlap with the earlier Middle Archaic and later Initial Woodland occupations, and therefore the dating of Late Archaic occupations based solely on point typology is problematic.

The lifeways of the people during this period in Minnesota were marked by adaptations to the changing environmental conditions and to increasing influences from people and cultures in surrounding regions. It was a time of increasing population numbers and more diverse artifact assemblages, which together with the advent of communal burials and expanded exchange of exotic materials, indicate increased social complexity and changes in subsistence patterns.

In southern and central Minnesota, the people likely adapted to two distinct biomes: the prairies of the west and south and the forests of the north and southeast. To the west, the hunting of migratory bison continued, and sites such as Canning (21NR9) may represent seasonal habitations of people who moved east to the woodlands during the cold months. In the north and east, the people of the period became more adept at exploiting stabilized resources such as fish, forest animals, and wild rice. Woodworking tools and fishhooks begin to appear in the archaeological record during the Late Archaic.

Gibbon and Anfinson (2008) use the term Proto-Horticulturalist to describe the addition of garden produce into the resource base of the Late Archaic period, suggesting that this indicates the beginning of a fundamental social transition, although not a heavy reliance on cultivated foods. Fragments of squash (Cucurbit pepo) recovered from a probable Late Archaic context at the King Coulee site near Winona on the Mississippi River is an example of this type of early horticulture from Minnesota (Perkl 1998).

The people during this period likely inhabited a series of relatively stable “base camps” that shifted during the year to access seasonal resources. A variety of smaller special activity areas, such as quarries, butchering, and extraction sites, radiated from these base camps. Communal burials that appear during the Late Archaic period may indicate increasing territoriality associated with greater settlement permanence. Highly ornamented grave goods have been interpreted as an indication of increasing religious complexity; and the appearance of burial mounds at the transition of the Archaic-Woodland periods is perhaps an indication that it had become more important to make these territorial indicators more visible to outside populations.

As with the preceding Early and Middle Archaic periods, the Late Archaic period has been studied much more thoroughly in the central Mississippi Valley and eastern woodlands than in Minnesota, and a great deal of information about the period in Minnesota is still lacking. Artifact assemblages from the period in Minnesota are not as diverse or abundant as those found in other regions, where plant-processing tools are commonly found and exotic materials such as conch shell were widely-traded. Fiber-tempered pottery was present during the Late Archaic in the southeastern states but no such materials have been found in Minnesota.

Significant Archaic Sites in the Area:

Little can be said about Archaic settlement patterns because so few sites are known, other than that they are all located on prominent high ground in proximity to water. As with Paleoindian sites, the paucity of documented Archaic sites in the Mille Lacs region is also a result of survey bias, with the preponderance of past research focused on the Late Woodland sites and burial mounds. Given the dry climatic conditions of the middle Holocene period, when lake levels were lower, it is also possible that many Early/Middle Archaic components are now inundated.

<u>Petaga Point (21ML11)</u>:

Petaga Point (21ML11) is located on a point of land formed by the outlet of the Rum River at Lake Ogechie. This is an area of relatively level, high ground with easy access to both the river and the lake. The Archaic component of Petaga Point includes an assemblage of copper artifacts with conical points, an ulu knife, and an assortment of square and round awls (Bleed 1967, 1969). There are also worked copper nuggets, demonstrating that copper tools were manufactured at the site. Lithics include eared side-notched points, Durst Stemmed points, end scrapers and gravers manufactured from lithic flakes, asymmetrical stemmed knives are not known from other Archaic sites, and large bifacially-flaked choppers made from stone cobbles

<u>Vineland Bay (21ML7)</u>:

A few copper artifacts and Archaic point types are known from the Vineland Bay site. Most of the copper assemblage from Vineland Bay appears to be derived from excavated Ojibwe burials The projectile point assemblage includes stemmed and notched forms, some similar to Pelican Lake and Raddatz. The majority are triangular points, however, derived from the more prominent Woodland components.

<u>Cunz</u> (21ML21):

The Cunz site, known from the collections of a landowner, is located on the prominent beach ridge on the western shore of Lake Shakopee. Points similar to the Pelican Lake, Durst, and Raddatz types are included in the lithic assemblage. The majority are of quartz, Tongue River Silica, and siltstone, conforming to Bakken's (2000) QKT-Pattern for the Mille Lacs region. A polished slate gorget suggests a possible cultural connection to the Laurentian and related Archaic cultures of eastern North America (Mason 1981).

<u>Scott (21CW9)</u>:

The only other Archaic site known from the Mille Lacs area is the Scott site, north of Garrison. The artifact assemblage contains a wide variety of stone tool types, ranging from the Late Paleoindian to Woodland. Classic Old Copper artifacts include points and an ulu.

6.3 Woodland Period (2500 to 350 BP)

While the Woodland period has traditionally been defined by the first appearance of pottery, burial mounds, and agriculture, Gibbon (2012:93) proposes that:

> Information gathered within the last twenty years has clearly demonstrated [that these traits] had already made their first appearance in areas of the Eastern Woodlands in the earlier Late and even Middle Archaic…. The result of these discoveries has been a redefinition of the Woodland tradition, a redefinition that now depends more on new socioeconomic adaptations than on shared diagnostic material traits. Still, the first associations of these three traits in about 700 BC [2700 BP] in some areas of the Midwest do seem to mark the inception of these new adaptations. Misleading reconstructions of the culture history of other areas of the Midwest have resulted, however, from the assumption that the presence of pottery, burial mounds, or cultigens, or some combination of the three, necessarily means that similar socioeconomic adaptations were present in those areas, too.

The Woodland period includes the Early, Middle, Transitional, and Late Woodland traditions (Arzigian 2008), although Gibbon (2012) prefers to divide the Woodland Period into *Initial* and *Terminal* periods in all but the southeastern corner of the state. Until recently, it was thought that Minnesota had no Early Woodland period preceding the cultures that made Malmo ceramics. Although there is still some controversy surrounding dates (i.e., Gibbon and Anfinson 2008), recent research suggests that the Brainerd complex does represent the Early Woodland period in Minnesota (Arzigian 2008). Specific to Mille Lacs area, the *Rum River Phase* represents the influence of Havana/Hopewell Middle Woodland peoples on the Mille Lacs Locality (Johnson 1984) and the *Isle Phase* is seen as a time of increasing population, probably facilitated by the increasingly efficient use of wild rice (e.g., Gibbon and Caine 1980; Johnson 1969).

During the late Holocene, from the end of the Archaic period through the Woodland period, the climate and landscape continued to evolve. These changes are well-documented through an extensive series of a series of pollen core studies from across the state and by correlation with other research on vegetation and climate change across the continent. Arzigian (2008:8) summarizes the climate and landscape developments of the Woodland period in Minnesota:

> Of greatest significance to the Woodland tradition is a period of cooler temperatures, the Sub-Boreal, that extended through the Early and Middle Woodland periods and was followed by the warmer Neo-Atlantic and Pacific periods, and then the cooler, moister Little Ice Age from about AD 1550 until 1915. During these broader climatic shifts and more local changes, the most noticeable changes would have been the local expansion or contraction of the prairie-forest ecotone and the prairie bison herds. Changes in local lake levels would have affected settlement patterns adjacent to the lakes, with some lakes drying up completely. Fires would have caused changes in the composition and distribution of forests as well as expansion of shrublands and savannas. Fire frequency would have been affected by local and regional climatic conditions, and possibly also by the human population. Starting about AD 1550, the Big Woods expanded at the expense of prairies as a result of changes in fire frequency in the cooler, moister Little Ice Age climate.

6.3.1 Early Woodland - Brainerd Complex

The Brainerd Complex of central northern Minnesota, also known as the Elk Lake culture, spanned the period of approximately 3000 to 1600 BP, and it is generally acknowledged to represent the Early Woodland period in Minnesota. The extent of this time span comes from a series of AMS dates obtained in the 1990s, mostly from residues on ceramics, and from limited stratigraphic evidence. The relative age of the Brainerd Complex is also indicated by the position of many sites on beach ridges associated with higher lake levels from roughly 3000 to 2000 BP. Prior to AMS dating, the Brainerd Complex in northern Minnesota was thought to date to approximately 1400 to 1200 BP in the Middle Woodland period, following Malmo (Arzigian 2008). In the Mississippi Headwaters area, the complex was thought to predate Sandy Lake and possibly Blackduck ceramics and extend back into the early Middle Woodland period.

The net-impressed pottery associated with the Brainerd Complex is found across a wide area extending from north-central Minnesota west into the Plains, and north and west to Lake Winnipeg and Montana (Hohman-Caine and Goltz 1995a). The landscape in central Minnesota during this period was a mix of oak and pine forests with oak savannas that provided habitat for elk and bison. Wild rice was also migrating from southern and central Minnesota into the lakes of northern Minnesota by roughly the beginning of the Brainerd Complex. Arzigian (2008) reports that 169 Brainerd Complex sites have been recorded in Minnesota, with most in MnHPO regions 5c (Central Lakes Coniferous Central) and 4w (Central Lakes Deciduous West).

Despite the many years of excavation and research, Brainerd Complex settlement and subsistence patterns remain poorly understood, due in part to the extensive mixing of archaeological components in the shallow soils of the region. The complex seems to be transitional between the basic hunter-gatherer traits of the Late Archaic period and the more complex subsistence patterns of the Late Woodland. Gibbon and Anfinson (2008) suggest that Brainerd may represent the first appearance of ceramics in the region at the end of the Late Archaic period. It may also represent a spreading of Woodland peoples from the south into the northwest, as they followed the resources of the retreating prairie landscape. Increasing cultural complexity during the period is indicated by burial mounds that became more common during this period and by the presence of Knife River flint at many sites, demonstrating that trade networks extended for a significant distance from the home region.

Brainerd Ware is the only known ceramic type in Minnesota with net impressions (Hohman-Caine and Goltz 1995a; Lugenbeal 1978). Brainerd Ware was initially defined based on excavations at the Gull Lake Dam site (21CA37) by Johnson (1971b). A second net-impressed ceramic type, Gull Lake Net-impressed, was later proposed by Neumann (1978), but this definition has generally not been accepted by other scholars. Net-impressed ceramics are reported from Site 21ML28, in Father Hennepin State Park. To the north of the Mille Lacs Locality, Allan (1993) describes sherds from the Cedar Creek site (21AK58) that display a mixture of Malmo and Brainerd characteristics.

The distinctive features of Brainerd ceramics are summarized in Hohman-Caine and Goltz (1995a). Brainerd vessels are conoidal to subconoidal in form and the rims are slightly in-sloping or vertical. Vessel lips are flat to convex. The clays used for the vessels tend to be porous and sandy in appearance. In contrast with later ceramics, sherds often appear highly weathered with inclusions projecting from the ceramic paste. The colors of the clay are generally fairly homogenous and temper usually consists of medium to coarse grains of burned and crushed granite or similar rock. The thickness of different vessels and even of different portions of the same vessel tends to vary with rims generally five to seven millimeters thick and bodies are generally six to eight millimeters thick. Vessel bases are usually slightly rounded to pointed and are relatively thick, ranging from eight millimeters to over 10 millimeters.

Surface treatment includes net impressions or horizontal cord marking, but both types do not occur on the same vessel. It is believed that the net pattern is the result of the vessel being formed in an entire net rather than by net-covered paddling or by rolling the vessel on pieces of netting. The horizontally-corded vessels bear cord impressions on the exterior surface and occasionally the lip surface. The orientation of the cording is usually nearly horizontal and linear (although there are a few examples with vertical cord-marking), and the cord marks tend to be more horizontal on the lower portions of the vessel. Net-impressed vessels are more likely to display smoothing than are cord-marked vessels, and it appears that the cord-marked surfaces were made by rolling a cord-wrapped object over a smoothed vessel surface, resulting in a noticeably different surface than is created by the cord-wrapped paddle impressions on later vessels.

Hohman-Caine and Goltz (1995a) describe five varieties of Brainerd ceramic vessels:

- The *plain variety* has no exterior decoration with occasional net or cord-marking on the lip. This variety occurs in both net-impressed and horizontally corded types.
- The *cord-wrapped object stamped variety* has stamping on the vessel exterior in the form of oblique, horizontal, or vertical stamps or some combination. Similar stamping may also be present on the vessel interior or, more rarely, the vessel lip.
- The *angled stamp variety* typically has one horizontal row of vertically oriented angled stamps (sometimes referred to as punctates) on the vessel exterior. These are frequently made with a square object, but may be made with a round object. Interior or lip decorations, including incised lines, may be present in this variety.
- The *incised variety* has incised lines, typically oblique or vertical, on the vessel exterior.
- The *reed stamped variety* has circular stamps, made with a hollow circular object, such as a reed, on the vessel exterior. These may be arranged in any combination of horizontal, vertical, or oblique rows.

Although most Brainerd Complex sites lack projectile points or contain points from mixed stratigraphic settings, Hohman-Caine and Goltz (1995a) report that a few types have been recovered from well-defined components. With the exception of one small arrow-sized point, all are medium-sized, corner-notched, expanding stemmed or straight stemmed dart point varieties similar to Late Archaic or Early Woodland types such as Pelican Lake, Duncan, Oxbow, Hanna, and Snyders. The most common raw materials are Swan River chert, Tongue River silica, and Knife River flint. Other lithic tools recorded at Brainerd Complex sites include small, medium, and large scrapers, hammerstones, utilized flakes, early- and late-stage bifaces, chopping tools, square to rectangular wedges/chisels believed to have been used for woodworking (sometimes confused with bipolar cores), and debris associated with all stages of lithic reduction. Lower-quality materials such as friable quartz and siltstone are used for many of these other tools.

Sparse subsistence information has been recovered from Brainerd Complex sites. Faunal material, floral remains, and phytoliths from charred residue on ceramics have been recovered from Brainerd components at a few sites. These materials indicate that Brainerd Complex people relied on the hunting of medium to large mammals and that they gathered a wide range of plant foods, including starchy seeds, fruits, and nuts. The subsistence strategies suggested by these foods is consistent with the proposal that the Brainerd Complex is essentially a late Archaic adaptation, with the addition of pottery and wild rice (Gibbon and Anfinson 2008).

Two sites with well-defined Brainerd components, LaSalle Creek (21HB26) and Shingobee Island (21CA28), contained faunal remains of elk, deer, dog, bison, possible caribou, turtle, beaver, otter, and fish. Plant resources recovered from Roosevelt Lake (21CA184) included seeds from edible weedy plants such as chenopod, along with fruit seeds from the raspberry or strawberry family, and shell fragments from acorns and hazelnuts. It has been suggested that early Brainerd vessels were used for starchy non-grass seeds such as chenopods and amaranth, or possibly for nut-oil processing, while by the end of the Brainerd occupation, wild rice had been introduced, although there was no stylistic change in Brainerd ware during this sequence.

The relationships of the Brainerd Complex to other cultures also remain unclear. As Arzigian (2008) explains, Brainerd and Laurel occupations have been found together at sites such as Third River Borrow Pit (21IC176), but it is unclear whether one precedes the other or whether they overlap significantly. Likewise, little is understood of possible relationships between Brainerd ware and other ceramic types such as Malmo and LaMoille in Minnesota, Black Sand in Illinois, Prairie ware in Wisconsin, and ceramics of other Early and Middle Woodland cultures in the region.

Significant Brainerd Sites in the Area:

Well-dated sites containing Brainerd ware near the project area include 21BL273 (Kitchie Bay), dating to approximately 2500 BP; 21HB26 (LaSalle Creek) with a date range of approximately 3185 to 2280 BP; and 21CA184 (Roosevelt Lake Narrows) with a date range of approximately 2855 to 2095 BP (Hohman-Caine and Goltz 1995a). Sites with good stratigraphic evidence include Osufsen Mound (21IC2), White Oak Point Village (21IC1), and McKinstry Mound (21KC2), where Brainerd ware was found below Late Woodland ceramics (Arzigian 2008).

6.3.2 Middle Woodland Havana-Related Complex

The Havana-related complex in Minnesota, which spans the period of roughly 2200 to 1700 BP, is represented in the Mille Lacs area by the Malmo context, also referred to as the *Rum River Phase*. The generally-accepted date range for Malmo is derived from relatively few radiometric dates at mound sites and residue on ceramics, and from inferred relationships to the Havana culture in Illinois. Arzigian (2008) reports that a few dates for the complex range from 2690 to 1400 BP. Dating of the complex in Minnesota, based on relationships to the Havana culture in other areas, is problematic as there is no reason to believe that the complex in Minnesota ended at the same time that it disappeared elsewhere in the Midwest.

Malmo is defined by grit-tempered ceramics, small notched- and stemmed projectile points, and the predominant use of local lithic raw materials supplemented on occasion by exotic raw materials such as obsidian, Hixton silicified sandstone, and Knife River flint. Havana-related peoples used both mound and non-mound burials. Subsistence and settlement practices are not well-understood, but there seems to have been a pattern of seasonal mobility, with larger summer villages and dispersed winter camps. Havana-related sites in Minnesota are generally located in mixed habitats, including riverine settings, areas of wet prairies, and oak openings that are often bordered by mixed deciduous forest.

Arzigian (2008:37) cautions that:

> The Havana-related complex encompasses a number of ceramic types, most of them poorly defined; cultural adaptations, defined primarily in terms of their relation to Hopewell and Havana cultures; and mortuary practices, often poorly dated. Specific research has focused on limited excavation at some key sites and tabulation of the presence of ceramic types in surface and limited excavation contexts, but few major excavations have been undertaken, and none at sites with good organic preservation. Thus, our knowledge of these cultures is very limited. Further, the individual

elements integrated here into ‘Havana-related’ reflect an uneven mixture of ceramic types and cultures.

Other Havana-related contexts in Minnesota include Howard Lake, the northernmost regional variant of Havana/Hopewell from the Central Illinois River valley, with sites concentrated in the Anoka Sand Plain, and Sorg, which was originally defined from sites along Spring Lake, a Mississippi River floodplain lake in Dakota County. Malmo ceramics are widely distributed around the Mille Lacs area from Mille Lacs Lake west to the Gull Lake area and from Ottertail County out into the prairies. Sites with Malmo ceramics, including some large burial mounds, are also found in Isanti County. In comparison to the other Havana-related contexts, however, Malmo sites have relatively few ceramics that show general similarities to Hopewell, and researchers in Minnesota prefer to use the term Havana when discussing regional cultural developments in order to avoid a focus on the dramatic expressions of Hopewellian culture during this period.

In general, Malmo ceramics are thick-walled conoidal vessels that appear to represent a mixture of local and Havana/Hopewell influences. Only a preliminary definition of this ware has been accomplished when compared to later periods. There is a relatively small amount of identified Malmo pottery recovered to date, and there are no reconstructed Malmo vessels. Based on present evidence, the typical Malmo vessel has a vertical rim, flattened lip and a wide mouth with little if any constriction of the neck. It is assumed that Malmo vessels have a pointed base; similar to other northern Initial Woodland wares, but this portion of a vessel has not been recovered since definition of the type was defined. The clay for these pots is tempered with coarsely crushed granite or (rarely) limestone. The surface of the pottery is smooth, and occasionally covered with a slip of clay. The rims of Malmo pots are decorated with zones of object impressions, including dentate stamps, cord-wrapped sticks, and fingernails. Punctates and bosses are also known, along with other stamp forms. The thickness of the walls of this pottery is notable, with a range generally between five and ten millimeters.

There is only limited information on Havana-related lithics and lithic assemblages. In general, the lithics from the complex include medium to large, corner-notched projectile points such as Snyders, Norton, and Manker along with small blades and blade cores. A corner-notched quartz point and a Knife River Flint perforator were recovered from the Black Brook site (Bakken 2000; Mather 1991, 1994; Mather and Nicholas 2000a). Lithic resource use at the Black Brook and Van Grinsven sites appears to fit the Q-Pattern (heavy use of quartz), indicative of the Woodland tradition as a whole (Bakken 2000). Black Brook also contains a variety of raw materials exotic to the Mille Lacs Locality, including obsidian, Hixton Quartzite, Burlington Chert, Prairie du Chien Chert, and Knife River Flint.

Very little evidence of subsistence has been recovered from excavations at Havana-related sites in Minnesota and therefore much of the understanding of Malmo subsistence comes from analogies with cultures in other regions that followed a general hunting-gathering lifeway. Calcined bone fragments from a bear’s paw were recovered from the Van Grinsven site, along with turtle shell. Calcined deer bones, bird bones, and mussel shell are reported from the Brower site. One stone net-weight was also present in that site assemblage. The Gull Lake Dam site, near the current project area, contains a large faunal assemblage including bear, moose, and domestic dog. Evidence of floral subsistence has also been recovered during recent excavations and studies, including an analysis of phytoliths in food residues from two Malmo vessels (Thompson 2000). One sample was found to be indicative of wild rice, but the other contained a phytolith assemblage characteristic of maize. Thompson stresses that this does not mean that maize was cultivated at Mille Lacs during period

Significant Malmo Sites in the Area:

Malmo (21AK1):

The Malmo site is an extensive mound group on the northeast shore of Mille Lacs first mapped by Brower and Bushnell (1900). The mounds include conical and ovate forms, and two of the excavated earthworks contained burned log features.

Black Brook (21ML40):

This small site is bisected by T.H.169, which has caused substantial disturbance, and it has been impacted by residential development. Oblong and linear earthworks were documented west of the highway corridor. The more prominent of these is an irregularly shaped, ovate mound that parallels a bend in the Rum River. The site area containing this mound has been plowed in the past but the earthwork is still visible. The artifact assemblage contains exotic lithic raw materials and Malmo ceramics.

Van Grinsven (21ML37):

The site is located on the northeast arm of the Lake Onamia basin and contains a concentration of Malmo ceramics, probably indicative of a single broken vessel. The lithic assemblage fits Bakken's (2000) Q-Pattern, indicative of the Woodland Tradition. Late Archaic and Late Woodland occupations are also suggested by the artifact assemblage (Mather 1991, 1994; Mather and Nicholas 2000c).

21AK71:

This site, located close to Mille Lacs on Ripple Lake, contained Malmo ceramics and Late Archaic-type copper artifacts. Although the relationship between these features is undefined, it seems likely that the site was simply occupied throughout the periods.

Petaga Point (21ML11):

A concentration of Malmo sherds, possibly representing a single vessel, was recovered at the site.

6.3.3 The Central Minnesota Transitional Woodland Complex

The Central Minnesota Transitional Woodland complex, which spans the period of roughly AD 300 to AD 1000, marks the transition between Middle Woodland (Malmo) and Late Woodland (Blackduck-Kathio) with notable shifts in technology, interregional interaction, mortuary practices, subsistence, and settlement. Dating of the complex has been based on a relatively small amount of stratigraphic information, radiocarbon dating, and on similarities to other transitional Woodland sherds, such as Onamia-like ceramics from southwestern Wisconsin.

Two phases were initially defined for this period in the Mille Lacs area, distinguished by ceramic style; the *Isle Phase* (AD 500 - 800) with St. Croix pottery and the *Vineland Phase* (AD 800 - 1000) with Onamia pottery, although there has been some debate among recent researchers over the date ranges for the two ceramic styles and the relationships between them, including the possibility that both styles should be subsumed into subtypes of a single Onamia Series. Sites from this complex are concentrated in the Mille Lacs area and along the Snake River drainage of east-central Minnesota. Closely related ceramics and lifeways are found in adjacent areas from northwestern Wisconsin and northeastern Minnesota into the eastern Dakotas. There are connections between the complex and the later Blackduck-Kathio complex in central Minnesota and to contemporaneous cultures in southwestern Minnesota such as Lake Benton. Arvilla burials have been linked to this complex through the presence of St. Croix and Onamia pottery in burial mounds.

Arzigian (2008) describes St. Croix vessels as subconoidal to rounded, with slight neck constrictions, high vertical rims, and rounded shoulders. They range in size from small bowls with openings of eight centimeters to large vessels with openings of 40 centimeters. They are grit-tempered (often crushed granite) with a surface treatment as tightly-spaced cordwrapped paddle impressions. Rims are usually smoothed before decoration and two varieties of lips have been defined; dentate-stamped and comb-stamped. One of the type vessels for St. Croix ware was recovered in the early 20th century from the Fort Poualak site (21CW7/14) on the Whitefish chain of lakes in Crow Wing County (Caine 1983). The context of the find was interpreted as a house depression, and two other fragmented St. Croix vessels were found at the same time. Charcoal residue from the exterior shoulder of the pot provided the first radiocarbon date from St. Croix pottery, ranging from approximately AD 600 to 760.

Onamia Series vessels are often very similar to St. Croix in form and decoration and they can be difficult to distinguish. Onamia vessels are also subconoidal to semi-subconoidal, with a constriction of the neck that creates a pronounced shoulder. The rims are straight and vertical, with a wide orifice. The surface of these pottery types is cord-marked, and the walls are notably thinner than Malmo Ware, averaging approximately six millimeters. Onamia Series ceramics are tempered with grit, composed primarily of crushed granite (Caine 1979, 1983; Ready and Anfinson 1979a; Thomas 2000). Decoration of Onamia Series pottery consists of impressions made by a cord-wrapped stick or dentate stamps in oblique and horizontal bands.

Little is known about lithic use or technology in the Central Minnesota Transitional Woodland complex. The Q-Pattern, reflecting heavy reliance on quartz, continues to be prevalent throughout this period (Bakken 2000), suggesting continuity with the preceding Havanna-Malmo Period. Projectile points found with Onamia ceramics are predominantly side-notched, sometimes described as similar to Prairie Side-Notched. Unnotched triangular points have also been recovered.

Despite limited data, Arzigian (2008) outlines a model of subsistence strategy changes proposed by researchers for the Central Minnesota Transitional Woodland complex. An increasing availability of wild rice and local game animals allowed for the sustenance of larger populations than could be achieved by traditional hunting and gathering lifeways. Hohman-Caine (1983) suggests that the rapid stylistic changes that culminated in the development of St. Croix ceramics are related to this increased population density and the shift from diffuse to focused subsistence patterns. The distinctive style of St. Croix ceramics found across a very wide area may also have played a role in maintaining social unity as increasingly large populations began to segment.

Linear earthworks found from the Pine City area east of Mille Lacs to the western prairies and in the Red River Valley are loosely associated with St. Croix ceramics through Johnson's (1973) definition of the Arvilla Complex. Conical mounds are also known from the complex. Little else is known of the temporal, spatial, and cultural relationships between the Central Minnesota Transitional Woodland complex and earlier, later, and contemporary cultures. Arzigian (2008) discusses possible relationships between St. Croix and early Blackduck bossed ceramics and between Onamia and Lake Benton ceramics to the west. The landscape position of sites is a constant, as all sites are situated on high ground in proximity to water.

Significant Central Minnesota Transitional Woodland sites in the Area:

Cooper (21ML9/16):

The Cooper site consists of a series of conical burial mounds and an associated village site. It is located on the most prominent point on Lake Ogechie and includes St. Croix and Kathio ceramics, along with later Sandy Lake and Oneota wares.

Griffin (21ML18):

The Griffin site is located a along the shore of Lake Ogechie and contains Malmo ceramics and both linear and conical mounds.

Portage Bay (21ML31):

This group of linear and conical mounds is located at the southern shore of Mille Lacs, and is bisected by TH169. St. Croix-like ceramics have been recovered.

Black Brook (21ML40):

The Black Brook site contains St. Croix and Malmo ceramics along with an oblong, ovate mound that was found to have been previously disturbed.

6.3.4 Late Woodland Blackduck-Kathio Complex

The Blackduck-Kathio complex (ca. AD 600 to AD 1100) evolved throughout northern Minnesota early in the Late Woodland period. The "Kathio" designation in central Minnesota refers to both a ceramic series and to the Mille Lacs *Kathio Phase*, which has been interpreted to include earlier Onamia ceramics. Blackduck, Kathio, and related ceramic types are thin-walled and globular and they display a considerable amount of stylistic variation across the chronological and geographical range of the complex. No clear typologies have been established and Arzigian (2008:110) cautions that "…the definition of Blackduck ware has been modified by many researchers and there seems to have been little cross-referencing between researchers…."

Few single-component Blackduck-Kathio sites have been excavated, and therefore many aspects of the complex are poorly-understood. Sites are generally larger and denser compared to earlier complexes in the region, suggesting increased population sizes. The people of the time likely followed an "Ojibwe settlement pattern" (Gibbon and Anfinson 2008) in which populations gathered into large groups in the summer at fishing and ricing camps and then divided into small groups in the winter at hunting camps. Sturgeon spawning grounds associated with the Rainy River may have been significant gathering places during the Blackduck period. Bison hunting in the adjacent prairies was also likely a part of the Blackduck subsistence pattern. These seasonal migration patterns may have centered on large summer villages that were occupied in the same locations every year. Very sparse evidence of possible house structures gives a tentative indication that sedentism was increasing during the Blackduck period. An increase in the demand for storable foods such as wild rice to feed increasingly large populations may have led to more complex social organization and territorial control. Burials in the Blackduck period are characterized by small mounds built close to habitation areas. Grave goods are present in some Blackduck mounds around the Rainy River, and some burials were intrusions into earlier Laurel mounds.

Blackduck Configuration ceramics (previously identified as Early Blackduck) are characterized by the "classic" form of Blackduck. This form is a globular vessel with a constricted neck, rounded shoulders, an everted or flared rim, and a thickened or wedge-shaped lip. Surface treatment is usually cord-marking with decoration on the interior rim, lip, and exterior rim and neck, but not the exterior body. This decoration usually consists of cord-wrapped object impressions (CWOI) and deep, circular punctates. Vessels are fairly thin-walled and appear to have been constructed by the slab method in which overlapping pieces of clay were pieced together, resulting in the common, lamina1 splitting of sherds.

Kathio Ware is a ceramic form with clear relationships to Onamia, but with closer links to the contemporary Clam River, Blackduck, and Madison wares (Caine 1983; George 1979; Gibbon and Caine 1980; Thomas 2000). Kathio pots are globular in shape with outflaring rims, constricted necks, and outward expansions of the shoulder and body. The lips are sometimes thickened with the application of fresh clay during decoration of the rim. The pots are tempered with grit and marked with cord or fabric impressions. There are no handles or lugs and decoration on the neck and lip surfaces include horizontal bands encircling the vessel and/or oblique impressions on the lip surface. There is no decoration elsewhere on the vessel bodies. The walls range between three and five millimeters thick, except for the lip, which can reach seven millimeters (Caine 1983; Ready and Anfinson 1979b; Thomas 2000).

Thomas (2000) has recommended that Kathio be subsumed within the Clam River Series, stating that "in essence, if one finds a sherd that looks like Blackduck or Clam River in the Mille Lacs region, it is called Kathio". Others, including Ready and Anfinson (1979b), suggest that the differences between Kathio, Blackduck, and Clam River ceramics are outweighed by their similarities and that they should comprise a single ceramic series for the Late Woodland in central Minnesota. They suggest the possibility that all three types originated from a similar Onamia ancestor that spread throughout a number of different cultural complexes in the region.

Lithic technology associated with the Blackduck-Kathio complex includes unnotched and notched triangular points that are typical of other Late Woodland cultures. Prairie Side-Notched and Plains Side-Notched points have been recovered from sites in the eastern Dakotas. Other artifacts recovered from sites with Blackduck pottery include unnotched triangular projectile points; end- and side-scrapers; knives; drills; steatite and clay pipes, bone awls or needles; mammal bone harpoons and spatulas; native copper fishhooks, gorges, awls, and beads; birch bark containers; and red ocher. Many of these artifacts came from multi-component sites, and therefore the specific associations with the Blackduck component cannot always be assured.

Blackduck-Kathio subsistence data is poorly-defined. Arzigian (2008) explains that seasonal exploitation of flora and fauna is assumed to have been a significant part of a subsistence strategy that also likely included the use of wild rice. She cautions, however, that the widely-accepted Blackduck-Kathio emphasis on wild rice is based to a large degree on site location, while the actual presence of wild rice remains is obscured by poor or mixed stratigraphy and a frequent lack of fine recovery techniques. Another complication she cites (2008:116) is that "Blackduck components interpreted as ricing sites are often in the same areas as historic ricing features that are probably being misidentified as precontact features." Small mammals such as beaver appear to have been hunted at fishing sites while large mammals such as deer, elk, moose, and bison were hunted at other locations.

The social, economic, and political organization of the Blackduck-Kathio complex is inferred mainly from subsistence and settlement patterns. Communal activities such as bison hunting and mound building suggest that relatively large groups came together seasonally on a repeated basis. Evidence for interregional trade is found in the presence of exotic lithic materials such as Knife River flint and Grand Meadow chert and in the presence of ceramics that appear to have been part of larger regional patterns. Arzigian (2008) points out, however, that exotic artifacts are not unique to this complex and that some materials may have persisted from earlier periods in more localized systems of exchange.

The stratigraphic relationships between Blackduck and other complexes are fairly well established, with Blackduck ceramics found above Laurel and beneath Sandy Lake, but the relationships between these and other complexes is not fully understood. Arzigian (2008:119) summarizes some of the main theories regarding these relationships:

> Lugenbeal (1979:24) sees a close relationship between Laurel and Blackduck, though Anfinson (in Lugenbeal 1979:24) argues for a closer relationship between Blackduck and Onamia–St. Croix. At the other end, Lugenbeal argues for closest affinity between Late Blackduck and the Selkirk ceramics of Ontario and Manitoba.…[Other researchers have suggested that] Laurel and Blackduck pottery-producing peoples were contemporaneous (Anderson 1979; Dawson 1983; Lenius and Olinyk 1990), suggesting that Blackduck people moved into the area from the south (Dawson 1983). Alternatively, Blackduck pottery might have originated in the Princess Point culture from the western end of Lake Ontario (Buchner et al. 1983).

Significant Blackduck-Kathio sites in the Area:

<u>Aquipaguetin Island (21ML2)</u>:

Artifacts from this site provided much of the data for Wilford's definition of the Kathio Focus. The site is an island, now surrounded by marsh in the northwest corner of the Lake Onamia basin. These finds and the association of the island with Father Hennepin by Brower (1901; Brower and Bushnell 1900) and others led to conclusions that Kathio ceramics were used by the Dakota in the late 17th century.

<u>Kathio School (21ML6)</u>:

Malmo and Kathio ceramics were recovered from this site on Mille Lacs.

<u>Old Shakopee Bridge (21ML20)</u>:

This multicomponent site is located at the inlet of the Rum River into Lake Shakopee and contains varied Woodland and a possibly Archaic components. A probable house and occupation floor contains Kathio ceramics and triangular projectile points. Bakken's (2000) Q-Pattern is clearly represented in the lithic assemblage, with quartz accounting for 81% of the lithic debitage.

<u>Crosier (21ML33)</u>:

The Crosier site contains Sandy Lake and Kathio pottery. Three vessels are represented by the recovered sherds, the first by multiple rims and interconnecting body sherds. This vessel is decorated with at least four rows of cord wrapped object impressions (Thomas 2000).

6.3.5 Late Woodland Psinomani Complex

Psinomani (Dakota for "wild rice gatherer," formerly called Wanikan) is a widespread archaeological complex that generally contains small triangular projectile points and Sandy Lake ceramics. The complex dates from approximately AD 1100 to the beginning of the historic period (ca. AD 1750), in which Sandy Lake ceramics were found in association with French trade goods. Although most Psinomani components contain Sandy Lake ware, some lack this type and others contain Ogechie ceramics (a locally-made variant of Orr phase Oneota ware). Sandy Lake ceramics have a wide geographical distribution, with the center of the culture in the Mississippi River headwaters region. The ceramics use shell or grit for temper, seldom have surface decoration, and are either cordmarked, smooth, or stamped with grooved paddles on the exterior. Projectile points from the complex are small, unnotched, and triangular in form and are often made of quartz.

Peoples of the Psinomani complex entered the early historic era as Siouan-speaking cultures. At Mille Lacs, which has one of the major concentrations of Psinomani sites, the complex has been linked to the historic Mdewakanton Dakota. Researchers have developed a local chronology with separate phases for the Psinomani complex at the Mille Lacs locality: the *Shakopee Phase* from AD 1300 to 1680 and the *Bradbury Phase* (comprising the Early Historic/Late Prehistoric periods) from AD 1680 to 1750. The *Bradbury Phase* includes a number of sites in which French artifacts were found in direct association with Mdewakanton Dakota occupation. The French artifacts predate the mid-eighteenth-century entry of the Ojibwe into the Mille Lacs area.

The origin and extent of Sandy Lake ware and the Psinomani Complex remain uncertain. Gibbon and Anfinson (2008) note that ceramics of very similar style are found throughout the northern Midwest, suggesting that Psinomani is part of a widespread cultural adaptation. It is not clear whether the Psinomani Complex represents the arrival into the region of new populations with new technologies or whether it represents the in situ development of existing populations. Changes through time within Psinomani are not well-documented. Ogechie ceramics appear to come from later components, although some tentative Ogechie radiometric dates from pot residues are fairly early in the sequence. Psinomani sites have been recorded across central and northern Minnesota, west to the Red River Valley and eastern North Dakota, east to the St. Croix River in Wisconsin, and north to the Rainy River and into Manitoba and Ontario. Psinomani sites seem to be located preferentially in areas such as the Mille Lacs Locality, which is near the forest-grassland ecotone on the western edge of the mixed conifer-hardwood forest.

Psinomani subsistence patterns included the gathering of wild rice, hunting of bison and other mammals, and the use of fish and other resources from lakes and rivers. These patterns suggest that the Psinomani peoples engaged in fairly intensive resource extraction from relatively contained areas along with seasonal hunting expeditions. In the more northerly extents of the complex, the use of prairie resources may have been limited, and there appears to have been a much more significant dependence on wild ricing. Psinomani sites near the project area appear to have been occupied during the wild rice harvest and during other seasons. Some sites may have been occupied full time by at least some of the population. Peoples of the Psinomani complex traded for corn with Oneota communities to the south and east, although there is no evidence that they grew corn or stored it in the deep storage pits typical of Oneota or Plains Village sites.

Trade connections with Plains Village peoples to the west included seasonal bison hunts and the acquisition of Knife River Flint among other resources. Psinomani peoples buried their dead in both mound and non-mound contexts, although despite increasing population sizes and social complexity, there are few known burials from the period and the scale of mound-building seems to have diminished from those of the preceding cultures in the area.

Arzigian (2008) describes Sandy Lake ware (after Birk 1979b): *Rims are generally straight, incurved or out-flaring, with flat or rounded cross-sections. Rim body junctures rarely form an abrupt angle or shoulder on the exterior, though the interior junction is often marked by a pronounced thickening. Both mortuary and utilitarian vessels are globular, and somewhat squat (vessel orifices are proportionately wide when compared to body width)*. Decoration, while uncommon, includes lip notching, interior punctates, and interior lip notching. The notches vary from a saw-toothed to clustered or evenly spaced impressions created by a variety of tools. Surface treatment includes both vertical cordmarking (Sandy Lake Corded) and plain or smoothed-over cord-marked (Sandy Lake Smooth). Other surface treatments include simple- and check-stamped exteriors. Vessel thicknesses range from three to seven millimeters. Sandy Lake ware used both shell and grit temper, and while there do not appear to be any diagnostic correlations between temper type and other variations within the ware, Arzigian (2008) describes experimental work by Budak (1991) demonstrating that shell-tempered pottery would have been more durable and watertight and would have transferred heat with more efficiency than grit-tempered pottery. .

Ogechie ceramics have characteristics of both Sandy Lake and Oneota wares. Arzigian (2008:132) summarizes Ogechie ceramics as follows:

> "The Ogechie series was defined from the type site Petaga Point (21ML11) (Elden Johnson, personal communication, as cited in Bleed 1969; Ready and Anfinson 1979b). It is described as a Mississippian-Woodland blend with similarities to both Oneota pottery and Sandy Lake (Ready and Anfinson 1979b) or as a locally made variant of Oneota ceramics (Birk and Johnson 1992:209). The temper is usually shell, though fine granite also is reported. Vessels are globular with flattened lips, straight or everted rims, constricted necks, round shoulders, and a round bottom. Paired loop handles are occasionally found, and lip notching is common. Ready and Anfinson describe two decorative styles: Allamakee Trailed, which has broad trailed lines on the shoulder in vertical or oblique slashes or chevrons, often with linear punctates; and Ogechie Plain, which has no decoration except for occasional lip notching.
>
> Ogechie ceramics are found around Mille Lacs, and in a long trail down to Oneota sites to the south and east, such as early Oneota sites at Red Wing. All reported Ogechie sites are within the Mississippi River drainage except for 21SL163, which has only a possible Psinomani component. Elsewhere, Michlovic (1987:54) reports ceramics from the Mooney site (21NR29) in the Red River valley that might represent local variations on Plains Village materials, instead of the Oneota-like local variants found to the east."

The range of Ogechie pottery extends from central Minnesota west to the Red River, and Arzigian (2008) cites Michlovic (1983) in arguing that shared ceramic traits, a common environment, chronological overlap, and a likely relationship to historically known Siouan speakers, suggest a link between Sandy Lake and at least one variant of Oneota, to which he suggests the name "Sandyota." This type is probably under-reported, with assemblages being identified as Oneota rather than the local variant, Ogechie. The Mille Lacs Lake area is likely near the northwestern frontier of the Oneota world, although other Oneota-like archaeological components are known from as far north as Manitoba. Ogechie, a local variant of Oneota pottery, indicates connections with Oneota agricultural populations to the south, east, and west of Psinomani. There are several sites in Mille Lacs and Cass counties with Ogechie ceramics (Arzigian 2008), including 21ML2 (Aquipaguetin Island), 21ML6 (Indian School), 21ML7 Vineland Bay, 21ML9/16 (Cooper), 21ML10 (Saw Mill), 21ML12 (Wilford), 21CA14 (Creech), 21ML21 (Cunz), 21CA22 (Norway Lake), 21CA27 (Steamboat Lake), 21CA50 (Sucker Lakes), 21ML81 (Wigwam Bay – see Florin et al. 2012), 21ML91, and 21CA506 (Thunder Lake Burial).

Few discrete Psinomani components have been excavated, and therefore it is difficult to describe a typical lithic assemblage. In general, lithics at Psinomani sites are typical of other Late Woodland and Oneota sites. Some sites appear to have been focused on tool use and reworking, while others involve a more full range of lithic manufacture. Assemblages include small triangular projectile points, end- and side-scrapers, bifaces, wedges or bipolar tools, cores, utilized flakes, hammerstones, anvil stones, double-pointed and bifacially flaked knives, sandstone arrow shaft abraders, milling stones, celts, and pipestone elbow pipes. Raw materials include locally-available quartz, Prairie du

Chien chert, Knife Lake siltstone, and Tongue River silica. Exotic materials include Burlington chert, Hixton orthoquartzite, and Knife River Flint.

Two large Psinomani complex living floors were excavated at the Wilford site. One floor contained concentrations of Sandy Lake ceramics and smaller amounts of Ogechie, St. Croix, Kathio and Onamia sherds. Other artifacts included a grinding slab, a catlinite pipe and one French trade bead. Although the excavations did not reveal enough of the houses to document their full dimensions, there is a possible correlation with the bark houses of the historically-documented Eastern Dakota.

Mather (2000a) describes the subsistence data recovered from Late Woodland Psinomani complex sites in the Mille Lacs area. Staple plant species include wild rice and *Chenopodium*, while corn and squash are documented in small amounts. Other floral remains cited by Arzigian (2008) from Psinomani sites include: nuts such as butternut and walnut; fruits and berries such as hawthorn, bayberry, pin cherry, raspberry, elderberry, sumac, nightshade, blueberry, and grape; tobacco: grasses and sedges. Major faunal resources included large mammals such as, bear, deer, and elk; small animals such as beaver, muskrat, weasel, hare, cottontail, woodchuck, porcupine, timber wolf, raccoon, fisher, mink, otter, skunk, and dog; and aquatic species including fish, mussels, turtles, and ducks. The importance of bison may be under-represented in faunal assemblages because much of the meat was probably transported from hunting areas to the west already dried or as pemmican.

Arzigian (2008) reports that few burials are known to be associated with Psinomani. The Norway Lake site (21CA22) is a multicomponent habitation site with one small conical mound that apparently dates to the Psinomani complex based on the recovery of a Sandy Lake vessel by avocational archaeologists in the 1950's. At the Cooper Mounds site (21ML16), both mound and non-mound burials were present. A crushed Sandy Lake vessel in direct association was found in a non-mound context at the site. Cooper Mound 1 contained both Sandy Lake and Ogechie vessels in direct association with French Period trade goods. Mound 2 contained Sandy Lake artifacts, with no European trade goods. The lack of mound sites when considered in conjunction with the widespread distribution of Sandy Lake ware suggests that mound burial was rare for the Psinomani cultures.

The historic Dakota people of Mille Lacs traveled widely and had many trade connections, suggesting that similar networks may have been present during the Psinomani period (Arzigian 2008). The distribution of Sandy Lake pottery and Knife River flint potentially represents the area of such interaction and movement. Psinomani represents the development of a tribal society with relatively large populations and that grouped together in permanent villages clustered around significant lakes such as Mille Lacs, in contrast to the band-level social organization of earlier cultural groups. These larger and more permanent population centers likely relied on an intensified utilization of grain resources, such as wild rice, to supplement other resources that would have been depleted if they were the sole source of food. The uniformity of Sandy Lake ceramics throughout the region can be seen as an indicator of strong intergroup social relations; although Arzigian (2008) stresses that the Psinomani complex is not coterminous with Sandy Lake and Ogechie ceramics, particularly to the west, where Sandy Lake pottery is found on Plains Village sites. Debate continues on whether Psinomani reflects a population replacement or an in-situ development.

6.4 Historical Period (AD 1650 to present)

The Ojibwe people arrived in north central Minnesota following several centuries of migrations from the Atlantic seaboard. Their arrival at the Great Lakes brought them into conflict with the Dakota, and over many decades they continued to push the Dakota westward, colonizing northern Wisconsin, Fond du Lac, the Mississippi Headwaters and finally the Mille Lacs area (Buffalohead and Buffalohead 1985; Warren 1985). Ojibwe settlements present at the beginning of the historical period are shown on Brower's *Archaeologic Chart of Mille Lac* (Brower and Bushnell 1900).

One of the Ojibwe bands was located at Gull Lake, which along with eleven other bands was part of the "Mississippi Chippewa." This group was delineated following the 1825 Treaty of Prairie du Chien in an attempt by the United States government to separate the Ojibwa and Dakota peoples and stop their territorial conflicts. The Mississippi Chippewa and other bands ceded their lands to the United States government following the Treaties of St. Peters in 1837 and Washington in 1855, at which point a formal reservation was established at Gull Lake. The Gull Lake reservation was terminated, however, following the Dakota War of 1862, when Chief Bagone-giizhig (Hole-in-the-Day) of the Gull Lake Band allied with Dakota people and planned an attack on nearby Fort Ripley. Chief *Máza-mani* (Iron-Walker) of the Mille Lacs Band, who was allied with the American forces, sent men to the fort and helped avert the attack, after which the Mille Lacs and Sandy Lake bands were granted reservation status by the United States. All of the other Mississippi Chippewa bands were forcibly removed to the nearby Leech Lake and Lake Winnibigoshish reservations (Treuer 2010). Following a period of strife on these reservations, most of the remaining Mississippi Chippewa bands combined to form the White Earth Band, and they along with the Leech Lake Band and Mille Lacs Band comprise the modern successors to the original Mississippi Chippewa.

While archaeological sites in the region that date to ca. AD 1750 and later can be ascribed to either Ojibwe people or Euro-Americans, it is not always clear how to define sites that contain a combination of indigenous and Euro-American materials. The replacement of traditional material items such as pottery and lithic tools by metal objects and other trade goods occurred fairly quickly following the contact period, but there was also a long period of overlap, lasting well into the twentieth century, during which traditional tools and materials were still used by native people (i.e. Kegg 1991). Gilman (1974:13-14) states: "By the end of the 18th century, native Americans in the upper Mississippi Valley and Great Lakes region had reached in material terms what has been called a 'pan Indian culture' . Nearly all the tools and implements used in their daily lives were manufactured in Europe, and the goods from which they made their clothes were also largely European." Archaeological sites from this period include Ojibwe ricing and maple-sugaring features, while after the middle of the nineteenth century Euro-American logging and settlement sites begin to appear.

<u>Wild Ricing</u>

Ricing jigs and pits have been identified at sites in Kathio State Park throughout the region. Excavations at ricing sites such as Cooper, on Lake Ogechie, have produced historic artifacts dating to as recent as the middle twentieth century (Johnson 1985; Mulholland et al. 1993; Peterson 1982). A related feature is created by seed parching, which creates areas of red/orange burnt soil with amorphous edges and concentrations of charcoal. A series of these features excavated at the Crosier Cemetery (21ML33) and Van Grinsven (21ML37) sites (Mather and Nicholas 2000b, 2000c) provided radiocarbon dates ranging from the late 1600s to the historic period.

<u>Maple Sugaring</u>

Maple sugaring prior to the historic period has not been recognized archaeologically. Features of these sites include pits and dugouts, and a notable surface distribution of metal and glass objects. The most obvious traits of these areas are the stands of old growth maple. "Indian sugar" and "sugar orchards" sites are noted on the General Land Office and Trygg (1969) maps of the Mille Lacs area from the mid-nineteenth century.

<u>Euro-American History</u>

Logging and homesteading sites are the most common type from the historical period, and Euro-American components are present at many precontact period sites. The first permanent presence near the project area began with lumbering on the Rum River, with logs from this area being used for the construction of Fort Snelling (Waters 1977). The oldest recorded logging site currently known in the Mille Lacs area is a camp with large intact berms west of Mille Lacs Lake (Streiff 1981).

Closer to the project area, full-scale logging around the Gull Lake began in the 1880's and by 1889 railroad tracks were extended to Margaret Lake. The period of extensive logging ended before the turn of the century, as did the use of the railway. According to the City of Lakeshore website (http://cityoflakeshore.com/index), early homesteaders who followed the clear-cutting near Gull Lake discovered that the area could attract tourists, and simple cabins were constructed around the shores for rentals. By the 1930's, tourism was the major economic force in the area, with numerous resorts joining the private cabins. Legal gambling was a popular feature of nightclubs at time, and Bar Harbor, at the northern end of the project area, was once one of Minnesota's most famous nightclubs. Approximately 35 resorts were present in the Gull Lake area in the 1930s and 1940s, but only six remained by 2006, as the demand for lakeshore property continued to make it more profitable to convert resorts to homes on the lake.

7. Environmental Background

7.1 Modern Environment

The project area is located in a rural area developed with lakefront cabins on the northwest side of Gull Lake along CSAH 77 (Interlachen Road), approximately four miles southwest of Nisswa and eleven miles northwest of Brainerd and Baxter, Minnesota. The northern portion of the project area extends between Gull Lake and Lake Margaret. The area contains a mixture of wooded recreational land, private residences, and a few businesses. Wetlands are present in some low-lying areas.

7.2 Glacial History

The history of glaciation in central Minnesota is complicated by the fact that different ice lobes repeatedly converged on the area from different directions. Each lobe deposited till or outwash with a distinctive lithology, which includes an admixture of older tills of different lithology that were incorporated into the younger tills. This scenario has complicated the interpretation of the glacial geology in the region. The following overview of that geology is based largely on work by Goldstein (1998).

A variety of old tills underlie the region, including calcareous tills of northwestern origin and red tills of Superior basin origin. Some of these tills are pre-Wisconsinan. The oldest surficial till in the region is that of the Wadena lobe (cf. Hobbs and Goebel 1982). Wright (1962, 1972) suggested that the Wadena lobe advanced from the northwest, but was blocked by a Rainy lobe ice mass on the east and thus deflected back to the southwest. This interpretation accounted for both the northwestern elements in the lithology of the till and the southwestern ice flow indicated by a large drumlin field. More recently Goldstein (e.g., 1985, 1989, 1998) suggested instead that the ice advance came from the northeast and was in fact a part of the Rainy lobe. His lithological studies indicated that as the ice advanced it overrode an older till of northwestern origin and progressively incorporated more and more of the older till. He felt that this better accounted for the systematic variability in the lithology of the Wadena lobe, as well as the unusual combination of sandy texture with carbonate clasts. This interpretation also eliminated certain difficulties in explaining an advance from the northwest at a time when the active ice centers lay to the northeast.

Four major phases have been identified for the Wadena lobe: Granite Falls, Alexandria, Hewitt, and St. Croix (from oldest to youngest). Formation of the drumlin field occurred during the Hewitt phase. The absolute chronology of these phases is poorly known. The Hewitt phase may have occurred more than 40,000 years BP. Goldstein suggested that it was no older than Early Wisconsinan, and probably early Late Wisconsinan.

During the St. Croix phase, the Wadena, Rainy and Superior lobes were all active in this part of Minnesota, which created a locally complex patchwork of different tills. The timing of the St. Croix phase is also not clear, but it may have been at least 20,500 RCYBP. The most recent glacial activity in the region was the advance of the Des Moines lobe from the northwest. Two phases have been identified, Pine City and Altamont. The Pine City phase reached its maximum extent around 16,000 BP, and the Altamont phase around 14,000 BP. The calcareous Des Moines lobe till is at the surface in much of the region.

The project area is located on glacial outwash of the Rainy lobe, which is between the older Wadena drumline fields to the west and the younger Des Moines lobe moraines to the east.

7.3 Physiography and Soils

The project area is located in the Brainerd - Automba Drumlin Area physiographic region, which is characterized by drumlin fields and ground moraine of the Rainy and Superior lobes, which are dissected in numerous places by outwash plains (Hobbs and Goebel 1982; Wright 1972). Specifically, the project is located on a glacial outwash plain of the Rainy lobe, referred to as the Mississippi River valley train. The terrain is rolling and contains a mixture of flat land, depressions and small hills.

Soils in the project area formed in glacial-age outwash and are coarse textured (sandy loam, loamy sand, and sand), with gravels that increase with depth. There is no potential for deeply buried sites because of the lack of Holocene deposition on the landscape. Archaeological sites are expected to occur near the surface. Soils information for each site is presented in the site discussions.

The glacial till and outwash provided lithic raw materials from which precontact period stone tools were manufactured. These lithic materials would have been accessible in erosional surfaces, such as stream cuts or beaches. The glacial-age landscape creates challenges for archaeology in the region, as artifacts from separate occupations during the Holocene are typically contained in a thin vertical zone of soil without natural or cultural stratification, and the cultural deposits often have a moderate amount of mixing and displacement caused by natural processes (rodent burrowing, freeze-thaw cycles, and tree throws and roots). Also, floral and faunal remains are often poorly preserved because of the acidic soils in area, and thus hinder the interpretation of precontact subsistence in the region.

7.4 Ecology and Hydrology

The project area is located in the *Pine Moraines and Outwash Plains Subsection* of the *Northern Minnesota Drift and Lake Plains Section* of the *Laurentian Mixed Forest Province* (Minnesota DNR 1998). This subsection contains the headwaters of the Mississippi River and hundreds of lakes over 160-acres in size. Other major rivers flowing through the Subsection include the Pine and Crow wing. The project area is also adjacent to the northern edge of the *Mille Lacs Uplands Subsection* of the *Laurentian Mixed Forest Province* and close to the eastern edges of the *Hardwood Hills* and *Anoka Sand Plain Subsections* of the DNR *Eastern Broadleaf Forest Province*.

The project area is dominated by numerous lakes and streams that occupy the undulating glacial topography, which left sandy and gravelly glacial drift of varying depths across the region. Ice blocks that remained after the retreat of the glaciers gradually melted and left water-filled basins that became wetlands and lakes (Anderson 1998). Gull Lake is part of a chain of lakes and connecting channels that together encompass an area of over 13,000 acres (www.crowwing.us). There are two inlets and one outlet for the lake, which is part of the Crow Wing River watershed. The first inlet flows from Upper Gull Lake south through a navigable channel into Gull Lake and the second is where Bishops Creek drains nearby Round Lake into Gull. The Gull River flows out from the southern end of the lake and continues approximately 14 miles to the Crow Wing River, which joins the Mississippi River approximately five miles farther downstream. The Gull Lake dam, which is located about one-half mile below the lake's outlet on the Gull River, was built in 1912 and is the last of the Mississippi Headwaters Reservoir dams. The dam raised the modern lake level by approximately five feet.

Post-glacial vegetation changes near the project area have been documented by two pollen sampling projects conducted at nearby lakes during the 1960s. The first of these was from Ogechie Lake, at the southwest end of Mille Lacs Lake, approximately 35 miles southeast of the project area (McAndrews 2000), and the second is from Billy's Lake, approximately 20 miles southwest of the project area, near Lake Alexander (Jacobson and Grimm 1986). The researchers at Ogechie revisited the pollen data more recently to focus on expansion of wild rice in the lake. The following dates from Ogechie were presented in calibrated format in McAndrews (2000), and the dates from Billy's Lake, which were not calibrated, have been converted to calibrated dates for the discussion that follows.

Paleovegetation from Ogechie Lake

From ca. 10,000 to 7800 BP, pinus (pine) species were dominant, indicating an open landscape of jack pine/red pine forest with oak present. Other species included spruce, birch and elm. The climate was relatively cool and dry, prairie herbs were increasing by the end of period. Tundra vegetation would have been present earlier, as the glaciers were melting, but the pollen cores do not extend to that period.

From ca. 7800 to 4000 BP, quercus (oak) species and prairie herbs were dominant, indicating an oak savanna landscape with basswood and ironwood, this was the Altithermal period. The prairie appears to have advanced close to the Mille Lacs area during this time, but the pollen samples show that it did not reach the lake.

From ca. 4000 to 2300 BP, quercus (oak) and ostrya (American hophornbeam/ironwood) species were dominant, indicating the transition from a deciduous forest of mainly dry-land xeric oak to a cooler and wetter climate that supported maple, ash, birch, and basswood. Sugar maple became more prevalent at this time, as did aquatic grass pollen, indicating the increase of wild rice in the area. Associated with the forest composition of this time is the likely presence of butternut (juglans species), or less likely, black walnut, which is more rare this far north. Although juglans does not appear in the pollen samples, it is indicated by burned shells in an archaeological deposit from the current project. Butternut is the most northerly of the juglans species, and the project area is at the current northwesterly extent of its range (USDA Forest Service online at na.fs.fed.us). The trees tend to be sparsely represented on stream banks, benches, and terraces with good drainage. Butternut grows in forests of maple-basswood, poplar-oak forest, ash, and birch.

From ca. 2300 BP to the present, pinus strobus (white pine) increased and expanded, forming a mixed pine-hardwood forest that indicates a period of climatic cooling.

McAndrews found that wild rice was present in the pollen samples from Ogechie Lake for the past ca. 3500 years, during the time when the uplands of the region were covered by deciduous forest and their subsequent transition to pine-hardwood forest around 2300 BP. The peak in rice pollen occurred from ca. 2000 BP to present. The pollen sequences outlined by McAndrews show that while the Mille Lacs vegetation changed considerably following the end of the last glaciation, the shifting prairie – forest border did not reach did not reach Mille Lacs even during the mid-Holocene prairie expansion. The area remained oak savanna or forested the entire post-glacial period.

Paleovegetation from Billy's Lake

From ca. 11,400 to 8990 BP, pine forest was dominant, along with a small amount of picea (spruce) at the very beginning of the period. Also present was a small amount of betula (birch), with more at the beginning of the period, followed by smaller quantities of alnus (alder), populus (poplar), corylus (hazelnut), quercus, ostrya, and ulmus (elm). This period represents an early Holocene pine zone similar to that throughout much of northern and central Minnesota, although prairie grass pollen types in the sample indicate that the prairie was close by.

From ca. 8990 to 3675 BP, the vegetation was prairie, as indicated by increased grass pollens. Quercus was the dominant tree species, along with small amounts of pinus, betula, alnus, corylus, and populus. Ostrya, ulmus, fraxinus (ash), and sugar maple were present in small concentrations.

From ca. 3675 to 930 BP, deciduous forest occurs with a continually-changing composition of pollens, with prairie being replaced by more quercus, followed by increasing amounts of betula, alnus, ostrya, and ulmus, as the landscape changed to a composition similar to the oak woodlands of today in Minnesota. An exception to the increase of tree pollens and decrease of prairie species during this time was observed in the continued presence of grass pollens, which the authors (1986:965) suggest may indicate a concentration of wild rice, or they may signal the continued presence of tallgrass prairie in the region at the same time as fire-protected woodlands developed in patches.

From ca. 930 BP - present, pine forest flourished as indicated by a major spike in pinus strobus (white pine) along with increasing betula and a fairly steady amount of alnus. Quercus begins to drop off during this period, and there is a small amount of ostrya, ulmus, and fraxinus.

The two periods of greatest vegetation change around Billy's Lake (not including the arrival of Euro-American settlement) were in the early Holocene, when prairie replaced pine forest and then during the late Holocene when white pine migrated into the region. Jacobson and Grimm (1986:964) note that with the exception of these two periods of dramatic change and a spike in xeric (dry) prairie species from ca. 7800 to 6800 BP, the evolution of the landscape was fairly steady with no extended period of homogeneity, which differs from the pollen records at other sites along the prairie-forest border where changes tend to be much more abrupt. They suggest that this may be the result of the physiography around Billy's Lake, which may have impeded the frequency of fires and the associated spread of prairie species.

Natural resources of the area during the precontact period were varied and abundant as a result of this mixture of lakeshore, riverine, and upland forest environments. Wild rice was once plentiful in area lakes, along with other edible plant species such as cattails, arrowhead, and bulrushes (Jenks 1901; Johnson 1969, 1984, 1985). Forest openings supported species such as *Chenopodium* (goosefoot) and amaranth that were a food source for indigenous peoples (e.g., Smith 1995). Other edible plants would have likely included tree nuts, nettles, raspberries, elderberries, choke cherries, pin cherries, and grapes. Another significant food source was sugar maple, which was also used medicinally.

The late-glacial environment of the project area likely supported now-extinct megafauna, and possible mammoth teeth have been found near Ogechie Lake (Hanson 1999). Large mammals inhabiting the project area at the time of Euro-American contact and into the historic period include white-tailed deer, black bear, elk, wolves, and the occasional moose. Small mammals include raccoon, rabbit, squirrel, muskrat, beaver, and otter. A variety of waterfowl and fish were present, including walleye, muskellunge, northern pike, bass, and panfish. Many of these species of fish would have colonized the Mille Lacs waterways almost immediately after retreat of the glacial ice (Eddy and Underhill 1974; Emery 1980; Hazard 1982; Johnson 1984, 1985; Pielou 1991; Tester 1995; Waters 1977; Whelan 1990).

The vegetation of the project area in the period immediately prior to Euro-American contact consisted primarily of pine and northern hardwood tree species, along with the white pine forests that later became commercially-important. The prairie and prairie-forest ecotone was located a short distance to the west, across the Mississippi River. Almost all of the project area had been logged extensively by the late 1800's, and secondary logging occurred during the 20th century. Unlike the landscapes farther east, the soils of the project area were not suitable for agriculture, and therefore the colonization of logged area by farms was not common in the area. Areas not subjected to residential or commercial development today consist primarily of deciduous forest and mixed hardwoods.

8. PHASE I FIELDWORK SUMMARY

8.1 Overview of Fieldwork and Results

Archaeological fieldwork was conducted from September 2 to November 21, 2014. Frank Florin was the principal investigator and field supervisor. The FCRS field crew included Kent Bakken, Mike Bradford, Gregg Felber, Frank Koep, Grayson Larimer, Ryan Letterly, James Lindbeck, Samantha Olson, Amanda Peterson, Kevin Reider, Jeff Shapiro, Michael Straskowski, and Bob Thompson.

The location of the Phase I archaeological survey area and sites identified during the survey are presented on a USGS 7.5' quadrangle map and air imagery in Figures 1 and 2. The locations of survey areas, sites, and shovel tests discussed in this sections are depicted on aerial imagery in Figures 5 to 9.

The survey corridor, centered on the existing CSAH 77 centerline, was 100 feet wide in the rural section and 66 feet wide in the urban section. The rural section, which is in the southern portion of the project area, is 1.7 miles long and extends from Sandy Point Road at the south end of the project area to the northern intersection of Pebble Beach Road and CSAH 77. The urban section, which is in the northern portion of the project area, is 2.4 miles long and extends from the northern intersection of Pebble Beach Road and CSAH 77 to CSAH 78.

A discussion of the field conditions, physical setting, survey methods, and results of the investigation is presented below and is organized from south to north. Because of very low surface visibility throughout the survey area, shovel testing was conducted in all areas without excessive slope, road cuts, or standing water. The field methods are described in Section 3.1. Five new sites (21CA771, 21CA772, 21CA773, 21CA774, and 21CA775) were identified during the Phase I survey. The sites are discussed in detail in Sections 10 to 14. Phase II evaluations were conducted at sites 21CA771, 21CA772, 21CA773, and 21CA774. Site 21CA775 was determined to be not eligible for the NRHP based on the Phase I survey.

8.2 CSAH 77 Segment 1 - Sandy Point Road to Agate Lake Road (South End)

The survey segment along CSAH 77 from Sandy Point Road to Agate Lake Road is mostly wooded, and the terrain is rolling and elevated, except for two small depression wetlands (Figure 5). This segment ranges from 75 to 400 meters from Gull Lake. The survey corridor, centered on the existing CSAH 77 centerline, was 100 feet wide in this segment. Shovel testing was conducted at 15-meter intervals along both sides of CSAH 77, except for areas where the survey corridor was 1) steeply sloping; 2) cut or ditched by previous road construction; or 3) filled over wetlands. Extensive areas in the southern portion of this segment were not shovel tested because of such conditions. The southern portion of this segment is mostly undeveloped, wooded recreational land. The northern portion of the segment is also wooded with development generally limited to driveways and houses built along the lake shore or set back from the road.

Precontact artifacts were recovered in shovel tests from the motel yard just south of Agate Lake Road, and the site was designated 21CA771. The site is discussed in detail in Section 10. The other shovel tests in this segment were negative.

8.3 CSAH 77 Segment 2 - Agate Lake Road to Archer Road

The survey segment along CSAH 77 from Agate Lake Road to Archer Road is mostly wooded, and the terrain is rolling, with the southern portion being low-lying and the northern portion elevated (Figure 6). The entire span of this segment is approximately 100 meters from Gull Lake. The survey corridor, centered on the existing CSAH 77 centerline, was 100 feet wide from Agate Lake Road to the northern intersection of Pebble Beach Road and CSAH 77, and it was 66 feet wide from that point to Archer Road. Shovel testing was conducted at 15-meter intervals along both sides of CSAH 77, except for areas where the survey corridor was 1) steeply sloping; 2) cut or ditched by previous road construction; or 3) filled over wetlands.

The southern portion of this segment, extending for 815 meters, is a wooded wetland where the road grade has been constructed on fill to raise it above the wetland, and the entire ROW is ditched for drainage and filled with water. No shovel tests were placed in this area. North of the wetland the landscape is elevated above Gull Lake, and most of this area was shovel tested. Development is generally limited to driveways and houses built along the lake shore or set back from the road.

Precontact artifacts were recovered in shovel tests on high ground north of the wetland, and the site was designated 21CA772. The site is discussed in detail in Section 11. About 100 meters north of 21CA772, precontact artifacts were recovered in shovel tests, and the site was designated 21CA773. The site is discussed in detail in Section 12. The southern end of this site is approximately 130 meters south of Archer Road and extends north past Archer Road.

8.4 CSAH 77 Segment 3 - Archer Road to Woodland Road

The survey segment along CSAH 77 from Archer Road to Woodland Road is mostly wooded, with rolling and elevated terrain (Figure 7). This segment is located between Lake Margaret and Gull Lake, with Lake Margaret ranging from 120 to 300 meters to the west and Gull Lake ranging from 90 to 150 meters to the east. The survey corridor, centered on the existing CSAH 77 centerline, was 66 feet wide.

Shovel testing was conducted at 15-meter intervals along both sides of CSAH 77, except for areas where the survey corridor was 1) steeply sloping; or 2) cut or ditched by previous road construction. Most of this segment was shovel tested. Development is generally limited to driveways and houses built along the lake shore or set back from the road.

Site 21CA773, which was identified in the Segment 2, extends 375 meters north of Archer Road. About 80 meters north of 21CA773, precontact artifacts were recovered in shovel tests, and the site was designated 21CA774. This site is discussed in detail in Section 13.

8.5 CSAH 77 Segment 4 - Woodland Road to Little John Road

The survey segment along CSAH 77 from Woodland Road to Little John Road is mostly wooded (Figure 8). The terrain is rolling and elevated, except for a large wetland depression at the north end of the segment. This segment is located between Lake Margaret and Gull Lake, with Lake Margaret ranging from 270 to 640 meters to the west and Gull Lake ranging from 120 to 450 meters to the east. The survey corridor, centered on the existing CSAH 77 centerline, was 66 feet wide.

Shovel testing was conducted at 15-meter intervals along both sides of CSAH 77, except for areas where the survey corridor was 1) steeply sloping; 2) cut or ditched by previous road construction; 3) filled over wetlands; or 4) paved. Most of this segment was shovel tested. The largest areas not tested were the wetland and parking lots of two businesses. Development is generally limited to driveways and houses built along the lake shore or set back from the road.

Site 21CA774, which was identified in the Segment 3, extends 540 meters north of Woodland Road. About 250 meters northeast of 21CA774, precontact artifacts were recovered in shovel tests, and the site was designated 21CA775. This site is discussed in detail in Section 14.

8.6 CSAH 77 Segment 5 - Little John Road to CSAH 78

The survey segment along CSAH 77 from Little John Road to CSAH 78 is mostly wooded (Figure 9). The terrain is rolling and elevated. This segment is located between Lake Margaret and Gull Lake, with Lake Margaret ranging from 170 to 380 meters to the west and Gull Lake ranging from 115 to 480 meters to the east. Topographically, most of this segment is located in a low swale between two ridges. The survey corridor, centered on the existing CSAH 77 centerline, was 66 feet wide.

Shovel testing was conducted at 15-meter intervals along both sides of CSAH 77, except for areas where the survey corridor was 1) steeply sloping; 2) cut or ditched by previous road construction; or 3) paved. Extensive areas of this segment were not shovel tested because of such conditions. Small portions of the land have been developed, including a church and a few houses set back from the road. All shovel tests in this segment were negative, and no sites were identified.

Figure 5. CSAH 77 Segment 1 from Sandy Point Road to Agate Lake Road on Air Imagery.

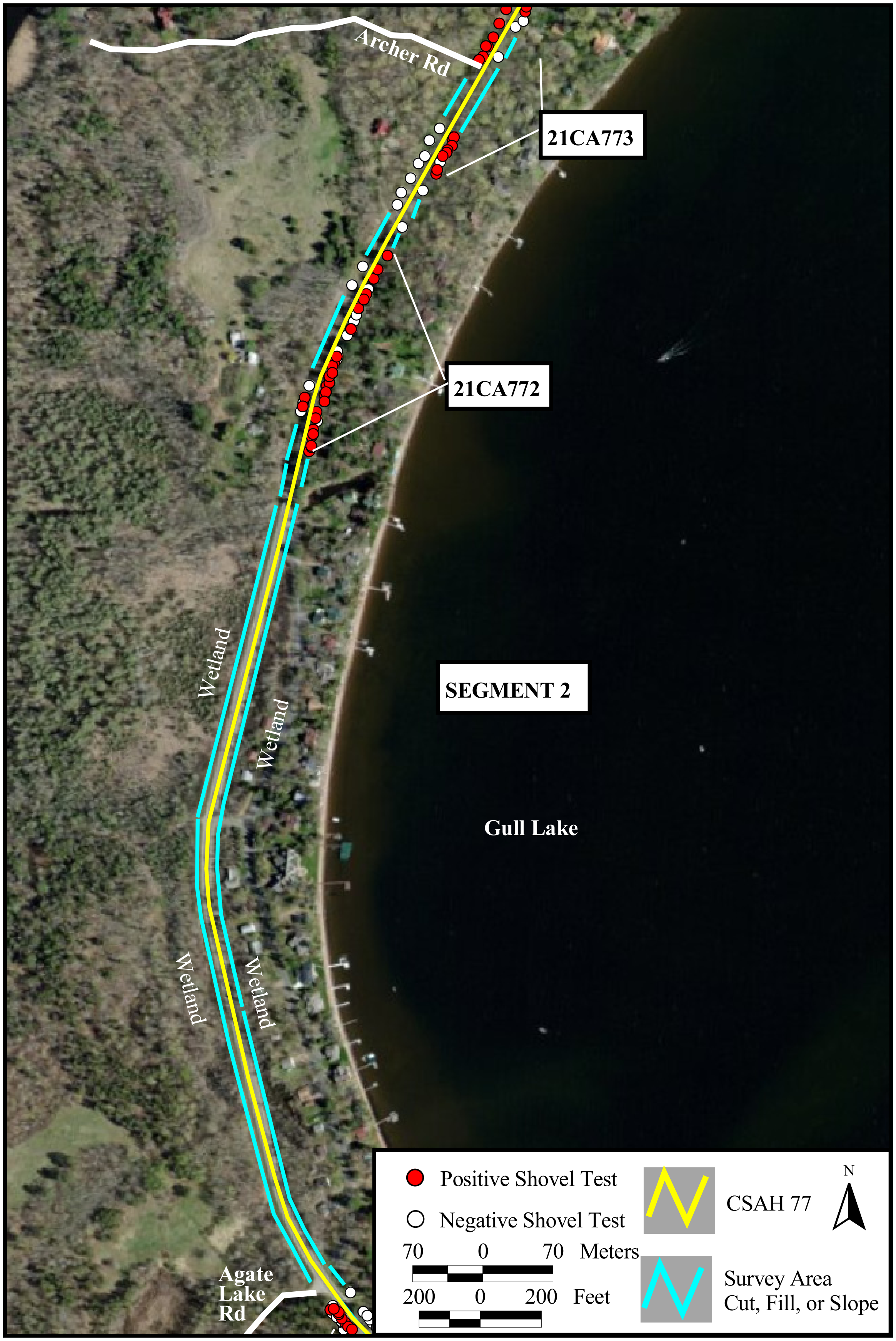


Figure 6. CSAH 77 Segment 2 from Agate Lake Road to Archer Road on Air Imagery.

Figure 7. CSAH 77 Segment 3 from Archer Road to Woodland Road on Air Imagery.

Figure 8. CSAH 77 Segment 4 from Woodland Road to Little John Road on Air Imagery.

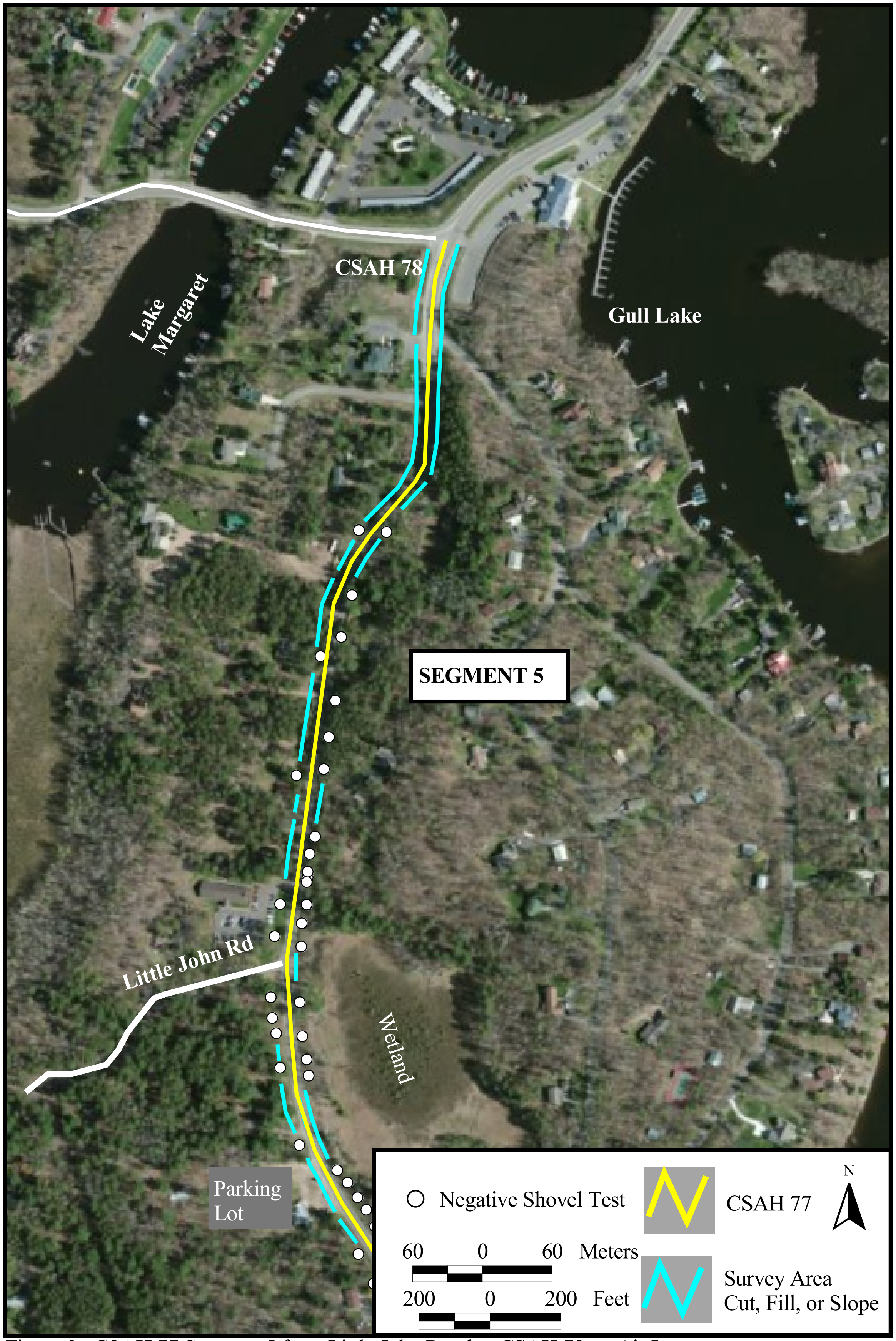


Figure 9. CSAH 77 Segment 5 from Little John Road to CSAH 78 on Air Imagery.

9. RADIOCARBON DATES

by Frank Florin

Ten samples from archaeological sites 21CA772, 21CA773, and 21CA774 were submitted to Beta Analytic, Inc (Beta) for AMS dating to aid in establishing the age of the components at the sites. The samples and results are summarized in Table 7, and the reports from Beta are included in Appendix C. Each radiocarbon sample is discussed more fully with the site where it was recovered.

Table 7. Radiocarbon Dates from the Sites.

Site and Provenience	Material	Beta Lab No.	$^{13}C/^{12}C$ Ratio (o/oo)	Conventional ^{14}C Age BP RCYBP	2 Sigma Calibrated Results (95% Probability)
21CA772 XU 13 20-30 cmbs	Calcined (cremated) bone carbonate	400914	-15.3 o/oo	5910 +/- 30 BP	Cal BC 4840 to 4715 (Cal BP 6790 to 6665)
21CA772 XU 15 20-30 cmbs	Calcined (cremated) bone carbonate	400917	-25.4 o/oo	5870 +/- 30 BP	Cal BC 4795 to 4690 (Cal BP 6745 to 6640)
21CA772 XU 7N 20-30 cmbs	Calcined (cremated) bone carbonate	400912	-16.6 o/oo	5740 +/- 30 BP	Cal BC 4685 to 4500 (Cal BP 6635 to 6450)
21CA772 XU 10 30-40 cmbs	Calcined (cremated) bone carbonate	400911	-19.1 o/oo	5690 +/- 30 BP	Cal BC 4585 to 4455 (Cal BP 6535 to 6405)
21CA772 XU 15 60-70 cmbs	Calcined (cremated) bone carbonate	400916	-18.0 o/oo	4950 +/- 30 BP	Cal BC 3785 to 3655 (Cal BP 5735 to 5605)
21CA772 XU 1 10-20 cmbs	Potsherd residue	435320	-26.1 o/oo	760 +/- 30 BP	Cal AD 1220 to 1285 (Cal BP 730 to 665)
21CA772 XU 20 10-20 cmbs	Bone collagen	402513	-22.3 o/oo	100 +/- 30 BP	Cal AD 1680 to 1735 (Cal BP 270 to 215) and Cal AD 1755 to 1760 (Cal BP 195 to 190) and Cal AD 1800 to 1935 (Cal BP 150 to 15) and Post AD 1950 (Post BP 0)
21CA773 XU 2 F1 42-60 cmbd	Wood charcoal (charred material)	400915	-26.2 o/oo	3990 +/- 30 BP	Cal BC 2575 to 2465 (Cal BP 4525 to 4415)
21CA773 XU 6 0-10 cmbs	Calcined (cremated) bone carbonate	400913	-26.3 o/oo	200 +/- 30 BP	Cal AD 1650 to 1685 (Cal BP 300 to 265) and Cal AD 1730 to 1810 (Cal BP 220 to 140) and Cal AD 1925 to Post 1950 (Cal BP 25 to Post 0)
21CA774 F1 20-35 cmbs	Wood charcoal (charred material)	42507	-24.1 o/oo	1190 +/- 30 BP	Cal AD 725 to 740 (Cal BP 1225 to 1210) and Cal AD 770 to 895 (Cal BP 1180 to 1055) and Cal AD 925 to 940 (Cal BP 1025 to 1010)

Database used INTCAL13; References Mathematics used for calibration scenario: A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322; **References to**

INTCAL13 database: Reimer PJ et al. IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP. Radiocarbon 55(4):1869–1887. 2013.

The Beta reports provide a summary of the corrections and calibrations to the Measured Radiocarbon Age as follows:

> Dates are reported as RCYBP (radiocarbon years before present, "present" = AD 1950). By international convention, the modern reference standard was 95% the 14C activity of the National Institute of Standards and Technology (NIST) Oxalic Acid (SRM 4990C) and calculated using the Libby 14C half-life (5568 years). Quoted errors represent 1 relative standard deviation statistics (68% probability) counting errors based on the combined measurements of the sample, background, and modern reference standards. Measured 13C/12C ratios (delta 13C) were calculated relative to the PDB-1 standard. The Conventional Radiocarbon Age represents the Measured Radiocarbon Age corrected for isotopic fractionation, calculated using the delta 13C. The Conventional Radiocarbon Age is not calendar calibrated. When available, the Calendar Calibrated result is calculated from the Conventional Radiocarbon Age and is listed as the "Two Sigma Calibrated Result" for each sample.
>
> Calibrations of radiocarbon age determinations are applied to convert BP results to calendar years. The short-term difference between the two is caused by fluctuations in the heliomagnetic modulation of the galactic cosmic radiation and, recently, large scale burning of fossil fuels and nuclear devices testing. Geomagnetic variations are the probable cause of longer-term differences. The parameters used for the corrections have been obtained through precise analyses of hundreds of samples taken from known-age tree rings of oak, sequoia, and fir up to about 12,000 BP. Beyond that, back to about 42,000 BP, correlation is made using multiple lines of evidence. This older data is still subjective and should be interpreted conservatively.

10. SITE 21CA771

10.1 Overview

Site 21CA771 is an Initial Woodland (Brainerd Complex) habitation. The site is in T135N, R29W, NE NW NE NW & NW NE NE NW Section 32 (Figures 1 and 2) and has a maximum dimension of 55 by 30 meters, encompassing 0.2 acre. UTM coordinates are E395230 N5147245 (1983 NAD Zone 15). A map of the site on aerial imagery is presented in Figure 10, and photos of the site are in Figures 11 and 12. All figures are contained at the end of this section. The survey corridor, centered on the existing CSAH 77 centerline, was 30 meters wide (100 feet).

10.2 Physical Setting and Soils

The site extends along the east and west sides of CSAH 77 just south of Agate Lake Road and is approximately 105 meters west of Gull Lake and 60 south meters south of a wetland. The site is situated on level terrain in the yard of a motel, along the grassy ROW area north of the motel, and on a grass lawn across the highway from the motel. There was no surface visibility. Woods border the site along the margins of the grassy ROW. A large pine tree is in the ROW at the north end of the site.

Soils at the site are mapped as Sanburn sandy loam (Web Soil Survey 2015). These soils are described as somewhat excessively drained, and they formed in a thin loamy mantle and the underlying sandy and gravelly sediments on outwash plains.

Areas within and near the site are extensively disturbed, and testing focused on undisturbed areas. There are two buried utility lines on the west side of the road between the shovel test transect and the road. The area between the shovel tests and the road is likely to be extensively disturbed from previous road construction and utility trenches. This area was avoided during site testing because of the buried utilities. The shovel tests south of Shovel Test 44W have about 50 cm of fill overlying a buried and truncated A horizon. Beginning about 15 meters south of Shovel Test 83E on the east side of the road, there is a one-meter-high earthen berm from modern landscaping that extends along the ROW for 190 meters to the south.

10.3 Phase I Survey Methods and Results

The site was first identified during shovel testing conducted at 15-meter intervals. Four Phase I tests contained 26 artifacts, including 20 pieces of lithic debris, 5 pieces of FCR, and one core (Table 8). Artifacts were recovered from 0 to 45 cmbs. Shovel Test 45W contained an abundance of lithic debris and FCR. However, the upper 20 cm of soil in this test was fill, and it is uncertain if the artifacts came from the fill or the undisturbed soil below the fill.

Table 8. Site 21CA771 Summary of Artifacts from Phase I Shovel Tests.

Shovel Test	Depth (cmbs)	Count	Artifact Type
44W	0-40	1	FCR
45W	0-45	3	Bipolar flake, quartz (2) and quartzite (1)
		3	Nonbifacial flake, quartzite, Animikie Silica, and Jasper Taconite
		4	Broken flake, Hixton Group Quartzite (1), unidentified chert (1), and basaltic (2)
		5	Other G4 flake, basaltic (1) rhyolite (1) Jasper Taconite (1), and quartz (2)
		2	Shatter, rhyolite and quartz
		4	FCR
46W	0-20	1	Bipolar core, unidentified material
		1	Broken flake, Knife Lake Siltstone
		1	Other G4 flake, unidentified material
83E	0-20	1	Broken flake, quartz
Total	-	**26**	-

10.4 Phase II Survey Methods and Results

Phase II testing methods consisted of digging close-interval tests adjacent to the positive Phase I tests in order to refine site limits, make a preliminary assessment of site integrity, recover additional artifacts, and provide data on intra-site artifact patterning. The Phase II close-interval shovel tests were numbered based on the direction and distance from the Phase I test. For example, Shovel Test 45WN5 is located five meters grid north of Shovel Test 45W. Five XUs were placed in site areas that offered the greatest research potential based on the data from the shovel tests.

10.5 Phase II Shovel Test Results

Phase II shovel tests were typically placed at 5-meter intervals adjacent to positive Phase I tests. Nine tests contained 34 artifacts, including 25 pieces of lithic debris, eight FCR, and one core (Table 9). Artifacts were recovered from 0 to 60 cmbs, with most from 0 to 30 cmbs.

Table 9. Site 21CA771 Summary of Artifacts from Phase II Shovel Tests.

Shovel Test	Depth (cmbs)	Count	Artifact Type
44WN10	0-20	1	Broken flake, unidentified material
		1	FCR
	20-40	1	Broken flake, quartz
45WN5	0-30	2	Decortication flake, Red River Chert
		1	Nonbifacial flake, unidentified chert
		4	Broken flake, basaltic (3) and quartzite (1)
		3	Other G4 flake, Lake Superior Agate
		1	Shatter, quartz
	30-60	1	Decortication flake, unidentified chert
46WN5	0-30	1	Bipolar flake, unidentified material
		2	Broken flake, basaltic
		3	FCR

Table 9. Continued.

Shovel Test	Depth (cmbs)	Count	Artifact Type
46WN7	0-30	1	Broken flake, quartz
		1	Shatter, quartz
46WS5	0-30	2	Broken flake, quartzite and basaltic
		1	Shatter, quartzite
		3	FCR
47WS5	25-50	1	Freehand nonbifacial core, quartz
		2	Shatter, quartz
47WSW6	0-30	1	FCR
47WW5	0-30	1	Broken flake, quartzite
Total	-	**34**	-

10.6 XUs 1 and 2

XUs 1 and 2 were contiguous units placed 20 cm south of Phase II Shovel Test 45WN5, which yielded 12 pieces of lithic debris. The units were about 2.5 meters north of Shovel Test 45W, which yielded 17 pieces of lithic debris and six FCR. The landscape sloped slightly down to the north. Excavation was terminated at a depth of 50 cmbs in XU 1 and 60 cmbs in XU 2 because of the lack of artifacts. A summary of artifacts from the XUs is presented in Table 10. Given the large amount of artifacts recovered from Shovel Tests 45W and 45WN5, the units surprisingly yielded only a sparse amount of artifacts.

Table 10. Site 21CA771 Summary of Artifacts from XUs 1 and 2.

Depth (cmbs)	Lithic Debris	FCR	Total	%
0-10	2	-	**2**	**25**
10-20	3	1	**4**	**50**
20-30	-	-	**0**	**0**
30-40	1	-	**1**	**13**
40-50	1	-	**1**	**13**
50-60*	-	-	**0**	**0**
Total	**7**	**1**	**8**	**-**
%	**88**	**13**	**-**	**100**

* XU 2 only

<u>Artifact Summary and Vertical Distribution</u>

A total of eight artifacts were recovered from XUs 1 and 2, including seven pieces of lithic debris and one piece of FCR (Table 10). No diagnostic artifacts were recovered, and no features were identified. Artifacts were recovered between 0 and 50 cmbs. The zone with the greatest artifact density (75 percent) occurs between 0 and 20 cmbs. The small amount of artifacts below 20 cmbs may have been displaced by natural processes or they may represent an earlier ephemeral occupation. The soils appear to be relatively undisturbed, as no modern impacts or rodent burrows were observed.

Soils and Stratigraphy
The soil horizons from the XUs are depicted in a wall profile and a photograph in Figures 13 and 15. The soil profile consists of a thin sandy loam A horizon, overlying loamy sand B horizons. Gravel content was low but increased with depth.

10.7 XUs 3 and 4

XUs 3 and 4 were contiguous units placed 20 cm south of Phase II Shovel Test 46WS5, which yielded three pieces of lithic debris and three FCR. The landscape sloped slightly down to the west. Excavation was terminated at a depth of 50 cmbs in XU 3 and 60 cmbs in XU 4 because of the lack of artifacts. A summary of artifacts from the XUs is presented in Table 11.

Table 11. Site 21CA771 Summary of Artifacts from XUs 3 and 4.

Depth (cmbs)	Lithic Debris	FCR	Ceramic	Total	%
0-10	-	-	-	**0**	**0**
10-20	6	1	3	**10**	**77**
20-30	-	3	-	**3**	**23**
30-40	-	-	-	**0**	**0**
40-50	-	-	-	**0**	**0**
50-60*	-	-	-	**0**	**0**
Total	**6**	**4**	**3**	**13**	**-**
%	**46**	**31**	**23**	**-**	**100**

* XU 2 only

Artifact Summary and Vertical Distribution
A total of 13 artifacts were recovered from XUs 3 and 4, including six pieces of lithic debris, 4 FCR, and three net-impressed Brainerd ware ceramics (Table 11). No features were identified. Artifacts were recovered between 10 and 30 cmbs. The zone with the greatest artifact density (77 percent) occurs between 10 and 20 cmbs. The soils appear to be relatively undisturbed, as few rodent burrows were observed, and modern disturbances were only present from 0 to 10 cmbs.

Soils and Stratigraphy
The soil horizons from the XUs are depicted in a wall profile and a photograph in Figures 14 and 16. The soil profile consists of a thin sandy loam A horizon, overlying loamy sand B horizons. Gravel content was low but increased with depth.

10.8 XU 5

XU 5 was placed west of 47WSW6 and 47WS5 and 50 cm south of Shovel Test 47WW5. These shovel tests yielded two pieces of lithic debris, a core, and one FCR. The landscape sloped slightly down to the east. Excavation was terminated at a depth of 50 cmbs because of a lack of artifacts. A summary of artifacts is presented in Table 12.

Table 12. Site 21CA771 Summary of Artifacts from XU 5.

Depth (cmbs)	Lithic Debris	Lithic Tool	FCR	Total	%
0-10	-	-	-	**0**	**0**
10-20	5	-	10	**15**	**41**
20-30	6	-	3	**9**	**23**
30-40	12	1	-	**13**	**35**
40-50	-	-	-	**0**	**0**
Total	**23**	**1**	**13**	**37**	**-**
%	**62**	**3**	**35**	**-**	**100**

Artifact Summary and Vertical Distribution

A total of 37 artifacts were recovered from XU 5, including 23 pieces of lithic debris, 13 FCR, and a utilized flake (Table 12). No features were identified, and no diagnostic artifacts were recovered. Artifacts were recovered between 10 and 40 cmbs. There is a bimodal distribution of artifacts by depth and artifact type. Most of the FCR and a small amount of lithic debris were recovered from 10 to 20 cmbs, while most of the lithic debris was recovered from 30 to 40 cmbs. The 20 to 30 cmbs level had fewer artifacts than either of these levels. The bimodal vertical patterning of artifacts could be the result of multiple occupations or displacement of artifacts by natural processes. The soils appear to be relatively undisturbed, as few rodent burrows or modern disturbances were observed. However, there was a large tree root, extending through the XU from 20 to 40 cm.

Review of Artifact Types by Depth

A review of diagnostic flake types by depth indicates that there is patterning by depth that is likely the result of multiple components (Table 13), although the sample size is quite small. All three of the bipolar flakes and all six of the nonbifacial flakes are from 30 to 40 cmbs, suggesting that these flakes and the other artifacts from this level are from a component that is earlier than the one represented by artifacts from 10 to 20 cmbs. The sample size of the other flake types is too small to be of use.

Table 13. Site 21CA771 Diagnostic Lithic Debris by Depth in XU 5.

Depth cmbs	Bipolar Flakes	Bifacial Shaping Flakes	Bifacial Thinning Flakes	Decortication Flakes	Nonbifacial Flakes
0-10	-	-	-	-	-
10-20	-	-	1	2	-
20-30	-	-	-	-	-
30-40	3	-	-	1	**6**
40-50	-	-	-	-	-

A review of lithic raw materials by depth was conducted on materials for which there was more than one artifact. The data shows discrete vertically patterning for the unidentified chert, which clusters at 30 to 40 cmbs (Table 14), suggesting that this material and other artifacts from the same depth are likely associated with a component that is earlier than the one represented by artifacts from 10 to 20 cmbs.

Table 14. Site 21CA771 Raw Materials by Depth in XU 5.

Depth cmbs	Knife Lake Siltstone	Lake Superior Agate	Unidentified Chert	Quartzite
0-10	-	-	-	-
10-20	2	-	1	-
20-30	1	1	2	1
30-40	1	1	**7**	2
40-50	-	-	-	-

Soils and Stratigraphy
The soil horizons from XU 5 are depicted in a wall profile and a photograph in Figures 17 and 18. The soil profile consists of a thin sandy loam A horizon, overlying loamy sand B horizons. Gravel content was low but increased with depth.

10.9 Artifact Summary
A total of 118 artifacts were recovered from the site during Phase I survey and Phase II evaluation (Table 15). Lithics (71%) were the most abundant artifact type by count, followed by FCR (26%) and ceramics (3%).   However, by weight, FCR (87%) was most abundant followed by significantly smaller quantities of lithics (12%) and ceramics (<1%).

Table 15. Site 21CA771 Summary of Artifacts.

Artifact Type	Total by Count (Weight g)	% by Count (Weight g)
Lithic	**84 (210.8)**	**71 (12)**
FCR	**31 (1470.0)**	**26 (87)**
Ceramic	**3 (7.8)**	**3 (<1)**
Total	**118 (1688.6)**	**-**
%	**-**	**100**

10.10 Lithic Analysis

The lithic assemblage consists of 87 artifacts, including 84 pieces of lithic debris, two cores, and one stone tool (Table 16). A variety of flake types, cores, and lithic materials are present in the assemblage, which is discussed below.

Table 16. Site 21CA771 Lithic Artifacts by Material, Flake, and Tool/Core Types.

Material	Nonbifacial Flake	Decortication	Bifacial Shaping	Bifacial Thinning	Bipolar Flake	Other Grade 4	Shatter	Broken Flake	Tool/Core	Total	%
Quartz	1	1	-	-	2	2	5	6	1 freehand nonbifacial core	**18**	**21**
Unid. chert	5	2	-	-	2	2	-	2	-	**13**	**15**
Quartzite	2	-	1	-	1	-	1	6	-	**11**	**13**
Basaltic	-	-	-	-	-	1	-	8	-	**9**	**11**
Knife Lake Siltstone	-	1	-	2	-	-	-	3	1 retouched flake	**7**	**8**
Unid. material	1	-	-	1	1	1	-	1	1 bipolar core	**6**	**7**
Lake Superior Agate	-	-	-	-	1	3	-	1	-	**5**	**6**
Red River Chert	1	2	-	-	1	-	-	-	-	**4**	**5**
Jasper Taconite	1	-	-	-	-	1	-	1	-	**3**	**4**
Rhyolite	-	-	-	1	-	1	1	-	-	**3**	**4**
Tongue River Silica	-	1	-	-	-	-	-	1	-	**2**	**2**
Border Lakes Group	-	-	-	-	-	-	-	1	-	**1**	**1**
Hixton Group Quartzite	-	-	-	-	-	-	-	1	-	**1**	**1**
Animikie Silica	1	-	-	-	-	-	-	-	-	**1**	**1**
Total	**12**	**7**	**1**	**4**	**8**	**11**	**7**	**31**	**3**	**84**	**-**
%	**14**	**8**	**1**	**5**	**10**	**13**	**8**	**37**	**3**	**-**	**100**

Size grade counts for the lithic debris were as follows: SG2 <1.0 inch to ≥0.5 inch (n=19; 23%); SG3 <0.5 inch to ≥0.233 inch (n=52; 64%); and SG4 < 0.233 inch (n=10; 12%). Three lithic artifacts were heat treated, including Tongue River Silica and unidentified chert. Probable heat treatment was observed on two additional pieces of chert. One piece of unidentified chert showed evidence of excessive heating, as indicated by crazing and potlid fractures. The amount of cortex on lithic debris is as follows: 0% cortex (n=55; 65%); >0 to <50% (n=11; 13%); 50 to <100% (n=4; 5%); and 100% (n=11; 13%).

Flake Types

A wide variety of flake types are present in the assemblage, indicating a range of lithic-reduction technologies and stages. Diagnostic flake types, along with their associated technologies and stages of reduction, are summarized in Table 17. Nonbifacial and bipolar technologies are well represented, with bifacial technology being sparser. The assemblage includes lithics from the early, middle, and late stages of reduction. Additional supporting evidence for the various technologies includes: 1) bipolar core indicative of bipolar technology; and 2) a nonbifacial core and a stone tool made on nonbifacial and decortication flakes are indicative of nonbifacial technology. Types of lithic debris that are not indicative of specific technologies or reduction-stages comprise the largest portion of the assemblage and include unidentified, other SG4, and broken flakes. These nondiagnostic flake types are not included in Table xx.

Table 17. Site 21CA771 Summary of Diagnostic Flake Types, Technologies, and Reduction Stages.

Count & Flake Type	Technology	Stage of Reduction
8 - Bipolar flakes	Bipolar	N/A
7 - Decortication flakes	Nonbifacial	Earliest stage of core reduction
13- Nonbifacial flakes	Nonbifacial	Cobble testing, reducing unprepared nonbifacial cores for flake blank production, and the early stages of nonbifacial tool reduction (early to middle-stages of reduction)
7 - Shatter	N/A	Mostly from cobble testing, core reduction, and earlier stages of reduction
4 - Bifacial thinning flake	Bifacial	Early to middle-stage of reduction
1 - Bifacial shaping flake	Bifacial	Late-stage of reduction (final shaping or tool maintenance)

Lithic Material Types and Use

Lithic materials consisted primarily of quartz (21%), unidentified chert (15%), quartzite (13%), basalt (11%), and Knife Lake Siltstone (8%), with a wide range of other materials that comprise less than eight percent of the assemblage. Nearly all of the materials are locally available. The unidentified chert and unidentified materials may be local or exotic. The presence of two decortication flakes from unidentified chert highly suggests a local acquisition for at least some of this material. The only material that is conclusively non-local or exotic is a single flake of Hixton Group Quartzite, which is from west-central Wisconsin. One chalcedony flake is also present, and this material is classified in the Western River Gravels group (Bakken 2011), which occurs in the South Agassiz Resource Region, and may be present in the local glacial deposits.

Although the lithic data is sparse, there are some patterns of differential material use that are indicated by the raw material debris profiles. The quality of the raw material, cobble size, and material abundance are likely the primary factors in the use patterns. The most notable lithic use characteristics are discussed below for those materials that have adequate sample sizes of diagnostic flakes. However, most materials lack an adequate sample size.

Quartz occurs primarily as broken flakes, shatter, and bipolar flakes, being conspicuously absent in bifacial technology. The use of quartz was likely limited by its flaking qualities. Unidentified chert occurs in a variety of flake classes related to nonbifacial and bipolar technologies. Quartzite occurs primarily as broken flakes, with small amounts in a variety of other flake classes associated with bifacial, nonbifacial, and bipolar technologies. Basalt occurs primarily as broken flakes. Knife Lake Siltstone, rhyolite, and an unidentified material occur as bifacial thinning flakes.

Stone Tools

The only stone tool recovered was a retouched flake made of Knife Lake Siltstone. Retouched flakes are primarily light-duty cutting and slicing tools used on soft materials (meat, hides, and plant material) or moderately resistant materials (wood and bone). The tool suggests that site activities may have included butchering, animal/plant processing, hide working, and bone and woodworking.

Cores

Two cores were recovered, including a freehand nonbifacial core and a bipolar core. The freehand nonbifacial core has unpatterned flaking and unprepared platforms.

10.11 FCR

A total of 31 pieces of FCR were recovered from several locations across the site (Table 18), with the largest amount from XU 5. The FCR are mostly small-sized pieces, with 94 percent being SG1 or smaller. Angular-fractured pieces were the most numerous FCR type followed by spalls, a split cobble, and a crumb. Most of the FCR is granitic (39%), unidentified material (29%), and quartzite (23%) with much smaller amounts of basaltic, metamorphic, and igneous rocks.

Table 18. Site 21CA771 FCR Count by Material, Size, and Type.

Material	Size Grade (SG)					FCR Type				Total	%
	0	1	2	3	4	Angular	Split Cobble	Crumb	Spall		
Granitic	1	7	1	3	-	7	1	-	4	**12**	**39**
Unid. Material	-	1	5	3	-	4	-	-	5	**9**	**29**
Quartzite	-	2	4	-	1	5	-	1	1	**7**	**23**
Basaltic	1	-	1	-	-	1	-	-	-	**1**	**3**
Igneous	-	-	1	-	-	1	-	-	-	**1**	**3**
Metamorphic	-	1	-	-	-	1	-	-	-	**1**	**3**
Total	**2**	**11**	**11**	**6**	**1**	**19**	**1**	**1**	**10**	**31**	**-**
%	**6**	**35**	**35**	**19**	**3**	**61**	**3**	**3**	**32**	**-**	**100**

10.12 Ceramic Analysis

The ceramics consist of three net-impressed Brainerd ware body sherds with grit temper. All sherds were recovered from XUs 3 and 4. Sherd thicknesses were 6.4, 5.9, and 5.9 mm. None of the sherds had charred residue.

10.13 Conclusions and Recommendations

Site 21CA771 is a small, Initial Woodland (Brainerd Complex) habitation that likely contains at least one other undefined component. The site is located near Gull Lake and a wetland. Despite the intensive amount of testing, artifact density is low, and only 12 of the 32 shovel tests dug at the site contained artifacts. The artifact assemblage includes lithic debris, cores, FCR, ceramics, and a retouched flake. Diagnostic artifacts include Brainerd net-impressed ceramics.

There is not any obvious horizontal patterning of artifacts, with the exception of the ceramics, which were all recovered from XUs 3 and 4. There was also a relatively large amount of lithics debris recovered from ST45W and 45WN5, but XUs placed at this location yielded few artifacts. There is no vertical patterning to indicate multiple components, except in XU 5, which appears to contain two components.

The lithic debris and cores indicated that site activities included lithic reduction and stone tool manufacture. The FCR and ceramics suggest cooking and heating activities. However, no cultural features, such as fire hearths, were identified. The retouched flake indicates that animal/plant processing or bone/woodworking occurred at the site.

A wide variety of locally available lithic materials were recovered from the site, with quartz being the most abundant. The only exotic raw material is Hixton Group Quartzite, which is from west-central Wisconsin. Lithic debitage includes a wide variety of flake types, indicating a wide range of lithic-reduction technologies and stages. Bifacial, nonbifacial, and bipolar technologies are all represented. The assemblage includes lithic debris from the early, middle, and late stages of reduction.

Although some portions of the site have been disturbed by previous road construction and buried utilities, other portions appear to be relatively undisturbed. The research potential of the site is low because of a very limited artifact assemblage, low artifact density, and lack of features. The site is not capable of providing important information on the Brainerd complex or other relevant research themes under NRHP Criterion D (See Section 2.3 Research Themes). The site is recommended not eligible for listing on the NRHP National Register of Historic Places because it does not meet National Register Criteria A, B, C, or D. No further archaeological work is recommended at the site.

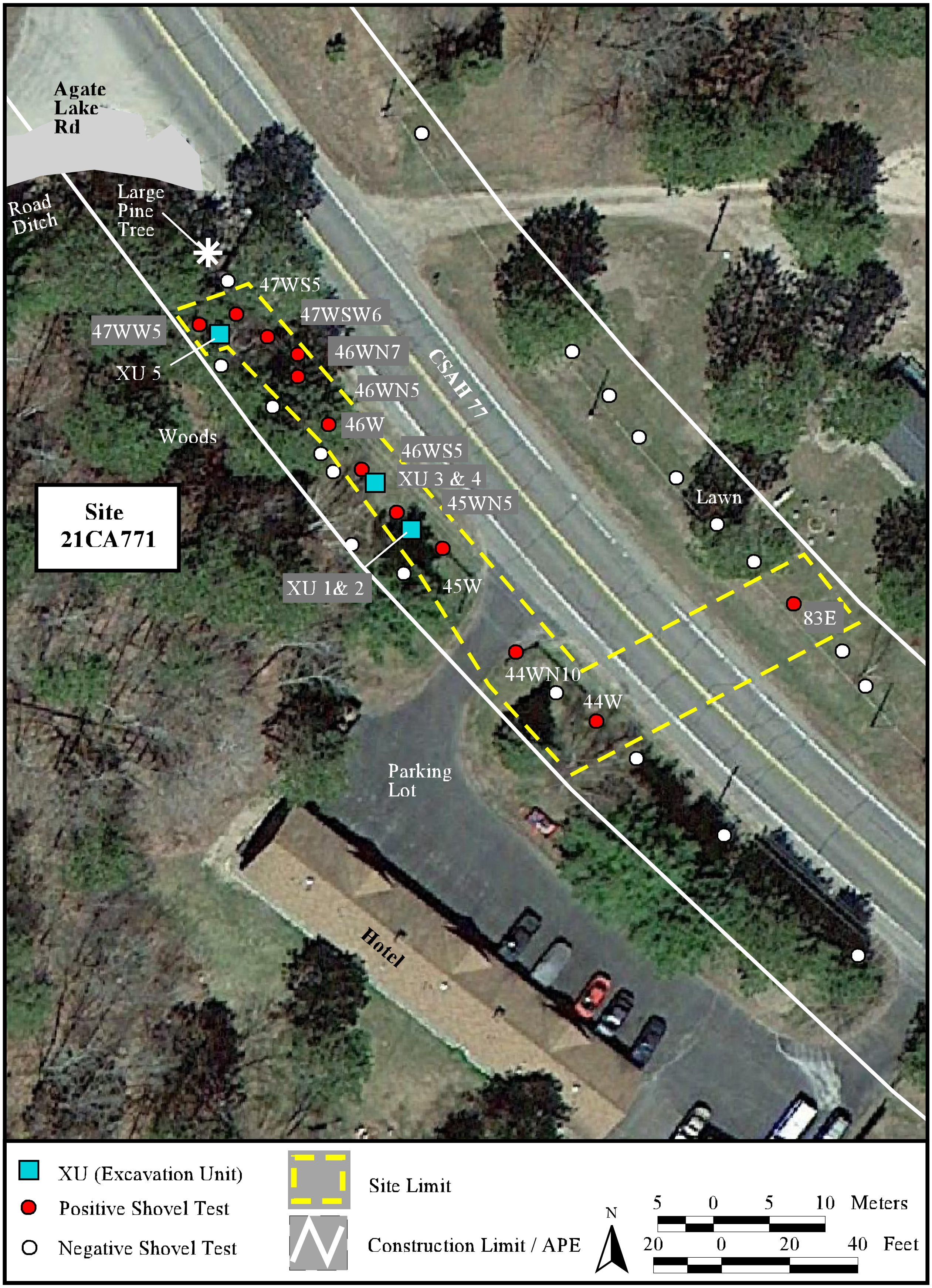


Figure 10. Site 21CA771 Map on Air Imagery.

Figure 11. Site 21CA771 Photo, Facing Northwest from CSAH 77.

Figure 12. Site 21CA771 Photo, Facing North from Motel Driveway along CSAH 77.

Figure 13. Site 21CA771 Photo XUs 1 and 2 West Wall Profile.

Figure 14. Site 21CA771 Photo XUs 3 and 4 South Wall Profile.

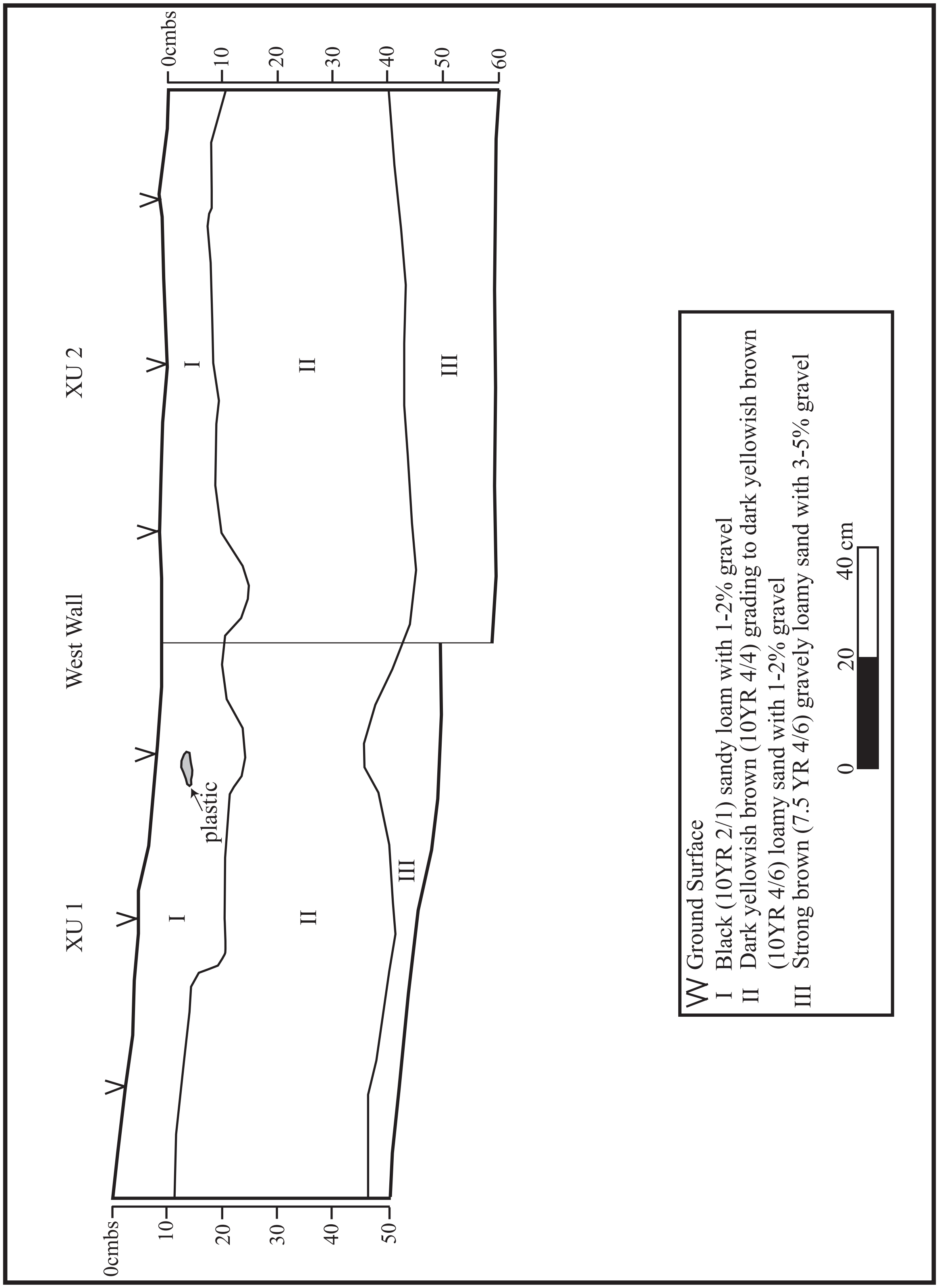


Figure 15. Site 21CA771 XUs 1 and 2 West Wall Profile.

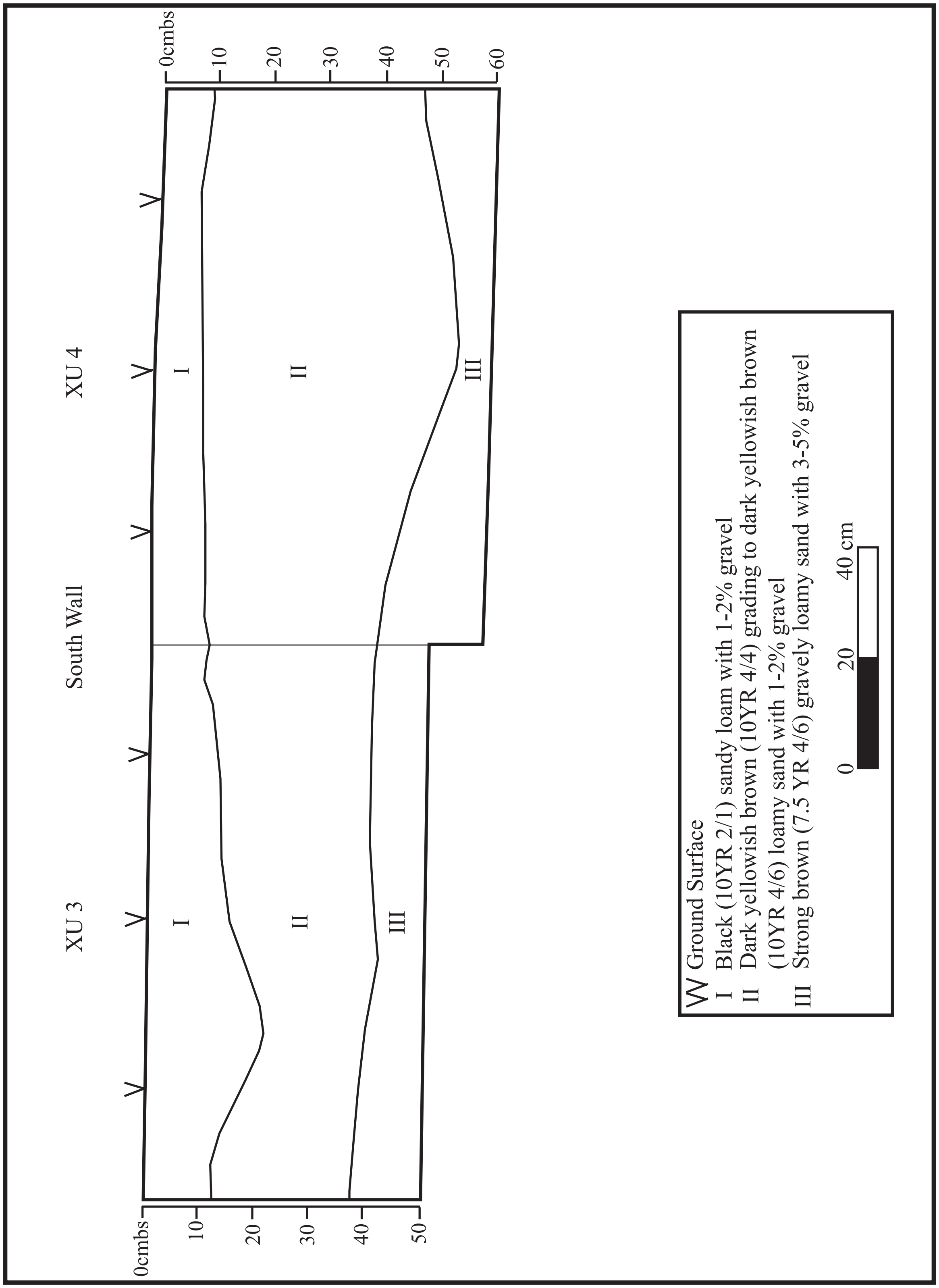


Figure 16. Site 21CA771 XUs 3 and 4 South Wall Profile.

Figure 17. Site 21CA771 Photo XU 5 South Wall Profile.

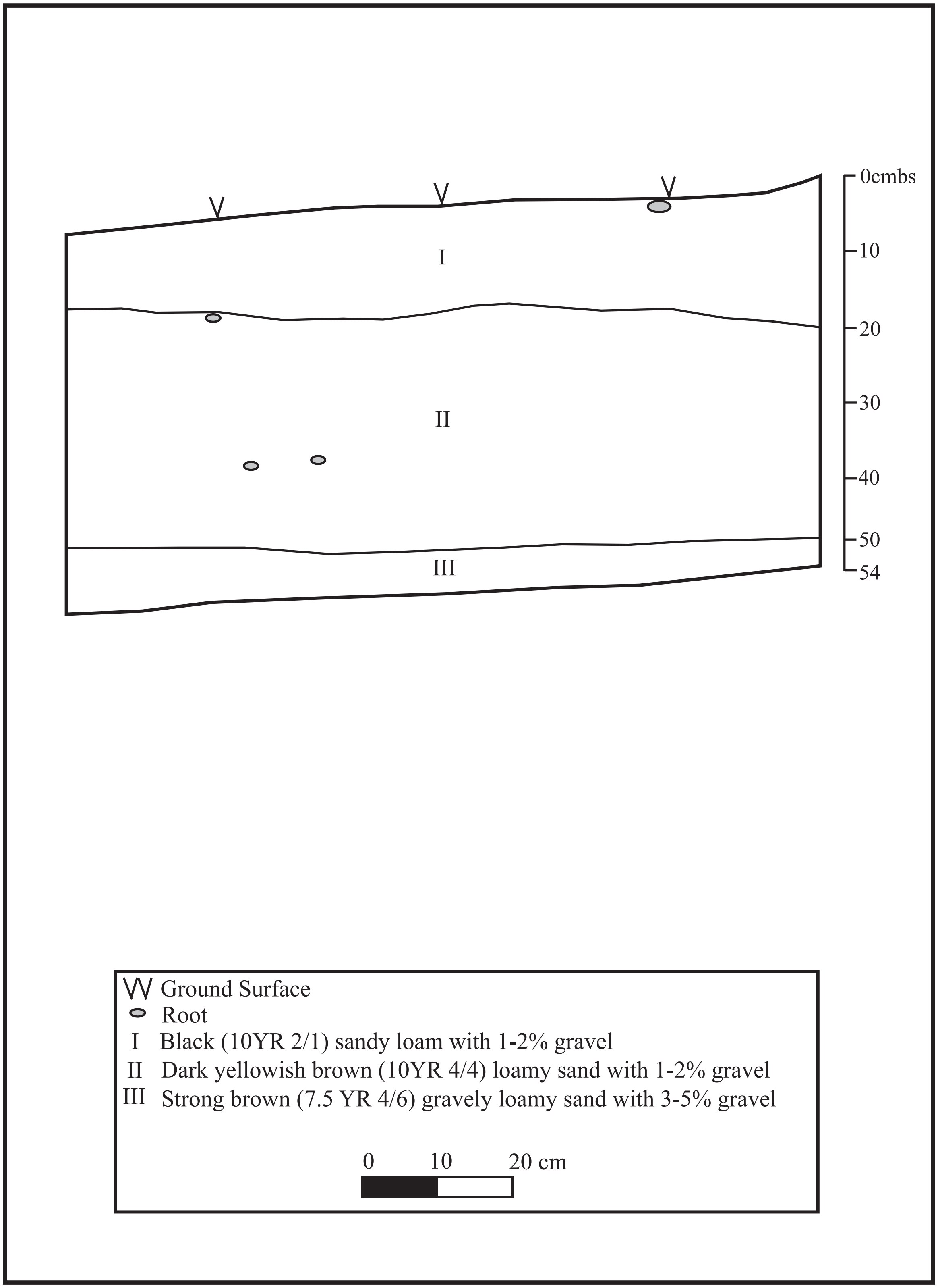


Figure 18. Site 21CA771 XU 5 South Wall Profile.

11. SITE 21CA772

11.1 Overview

Site 21CA772 is a multicomponent habitation site with Middle/Late Archaic and Terminal Woodland components. The site is in T135N, R29W, SE NW Section 29 (Figures 1 and 2) has a maximum dimension of 220 by 25 meters, encompassing 0.5 acre. UTM coordinates are E395265 N5148320 for the north end and E395185 N5148115 for the south end (1983 NAD Zone 15). A map of the site on aerial imagery is presented in Figure 19. Photos of the site are in Figures 20 and 21. All figures are contained at the end of this section. The survey corridor, centered on the existing CSAH 77 centerline, was 20 meters wide (66 feet).

11.2 Physical Setting and Soils

The site extends along the east and west sides of CSAH 77 from 190 to 430 meters south of Archer Road. The site is 100 meters west of Gull Lake and 40 meters north of a wetland that drains into Gull Lake. The site is situated on level to rolling terrain with the south end on a low hill overlooking Gull Lake and the wetland. The survey area on the west side of CSAH 77 adjacent to the middle portion of the site consists of sloping terrain along a depression, and the soils in this area have been bladed and filled, based on soil probes. The survey area adjacent to the north end of the site has also been bladed and filled based on disturbed soils in shovel tests.

The site area is wooded, and there was no surface visibility. A tennis court is adjacent to the south east end of the site, east of XUs 13 and 14. South of Shovel Test 87ES10, the hill within the survey area was cut away during previous road construction. Along the east side of CSAH 77, there is only a narrow strip of land about three meters wide between the edge of the survey corridor and buried utilities. At the south end of the site where the hill has been cut along the ROW the land in the corridor is even narrower, eventually pinching out to the slope of the road cut. Basically, there is only a narrow strip of undisturbed ground, generally three meters or less, in the survey corridor.

Soils are mapped as Mahtomedi loamy sand, with Graycalm loamy sand at far north end of the site (Web Soil Survey 2015). The soils are described as well drained and formed in sandy outwash (glacio-fluvial deposits) of Late Wisconsinan Age on outwash plains.

11.3 Radiocarbon Dating

Radiocarbon dates were obtained from six faunal fragments and charred residue on an Ogechie ceramic sherd (Table 19). The charred residue on the Ogechie (Terminal Woodland) sherd dated to 760 +/- 30 RCYBP (cal. 730 to 665 BP). Five faunal samples dated to 5910 +/- 30 RCYBP (cal. 6790 to 6665 BP), 5870 +/- 30 RCYBP (cal. 6745 to 6640 BP), 5740 +/- 30 RCYBP (cal. 6635 to 6450 BP), and 5690 +/- 30 RCYBP (cal. 6535 to 6405 BP), and 4950 +/- 30 RCYBP (cal. 5735 to 5605 BP). Four of these dates are very similar in age (overlapping or nearly overlapping) and date ca. 5800 RCYBP (cal. 6700 BP), suggesting they are from the same occupation or are approximately contemporaneous. The other date is about 700 years later and is likely a separate occupation. These dates fall at the end of the Middle Archaic period and near beginning of the Late Archaic in Minnesota. One faunal sample dated to 100 +/- 30 BP (cal. 270 BP to post 0 BP - after 1950). The date for this sample ranges from the contact period to modern times. There are no artifacts from the site that support a contact period date, and it is most likely that the bone dates from the period of Euro-American settlement (ca. 1880 to modern).

Table 19. Radiocarbon Dates.

Site and Provenience	Material	Beta Lab No.	$^{13}C/^{12}C$ Ratio (o/oo)	Conventional ^{14}C Age BP RCYBP	2 Sigma Calibrated Results (95% Probability)
21CA772 XU 13 20-30 cmbs	Calcined (cremated) bone carbonate	400914	-15.3 o/oo	5910 +/- 30 BP	Cal BC 4840 to 4715 (Cal BP 6790 to 6665)
21CA772 XU 15 20-30 cmbs	Calcined (cremated) bone carbonate	400917	-25.4 o/oo	5870 +/- 30 BP	Cal BC 4795 to 4690 (Cal BP 6745 to 6640)
21CA772 XU 7N 20-30 cmbs	Calcined (cremated) bone carbonate	400912	-16.6 o/oo	5740 +/- 30 BP	Cal BC 4685 to 4500 (Cal BP 6635 to 6450)
21CA772 XU 10 30-40 cmbs	Calcined (cremated) bone carbonate	400911	-19.1 o/oo	5690 +/- 30 BP	Cal BC 4585 to 4455 (Cal BP 6535 to 6405)
21CA772 XU 15 60-70 cmbs	Calcined (cremated) bone carbonate	400916	-18.0 o/oo	4950 +/- 30 BP	Cal BC 3785 to 3655 (Cal BP 5735 to 5605)
21CA772 XU 1 10-20 cmbs	Potsherd residue	435320	-26.1 o/oo	760 +/- 30 BP	Cal AD 1220 to 1285 (Cal BP 730 to 665)
21CA772 XU 20 10-20 cmbs	Bone collagen	402513	-22.3 o/oo	100 +/- 30 BP	Cal AD 1680 to 1735 (Cal BP 270 to 215) and Cal AD 1755 to 1760 (Cal BP 195 to 190) and Cal AD 1800 to 1935 (Cal BP 150 to 15) and Post AD 1950 (Post BP 0)

11.4 Phase I Survey Methods and Results

The site was first identified during shovel testing conducted at 15-meter intervals. A total of 94 artifacts were recovered from 12 Phase I tests, including 44 pieces of FCR, 17 pieces of lithic debris, 12 faunal fragments, 20 ceramic sherds, and a stone tool (projectile point) (Table 20). Artifacts were recovered from 0 to 80 cmbs, but nearly all were from 0 to 30 cmbs.

Table 20. Site 21CA772 Summary of Artifacts from Phase I Shovel Tests.

Shovel Test	Depth (cmbs)	Count	Artifact Type
49W	0-30	1	Bifacial thinning flake, unidentified chert
		1	FCR
87E	0-20	1	Projectile point, Knife Lake Siltstone
	20-40	2	FCR
88E	0-30	1	Mammalian, medium/large, unidentifiable fragment, calcined
		3	FCR
89E	0-30	1	Bifacial thinning flake, Tongue River Silica
		2	Mammalian, unidentifiable, fragment, burned and calcined
		1	FCR
	30-70	4	Mammalian, unidentifiable, fragment calcined

Table 20. Continued.

Shovel Test	Depth (cmbs)	Count	Artifact Type
90E	0-30	15	Ceramic, body, grit temper, smooth (12) and undetermined surface (3)
		3	FCR
		2	Ceramic, body, grit temper, smooth, trailed line decoration
		3	Ceramic, rim, grit temper, smooth
	30-80	5	Mammalian, unidentifiable, fragment, calcined
		1	Bifacial thinning flake, Knife River Flint
		1	Broken flake, quartz
		3	FCR
91E	0-30	1	Decortication flake, jasper
		3	FCR
	30-60	2	FCR
92E	0-30	1	Bipolar flake, unidentified chert
		2	Broken flake, quartzite and unidentified material
		24	FCR
96E	0-30	1	FCR
	60-80	1	FCR
97E	0-30	3	Broken flake, quartz (2) and unidentified material (1)
		1	Other G4 flake, quartz
98E	0-30	1	Broken flake, rhyolite
		1	Other G4 flake, quartz
		1	Shatter, quartz
99E	0-30	1	Bipolar flake, basaltic
100E	0-40	1	Shatter, quartz
Total	**-**	**94**	**-**

11.5 Phase II Survey Methods and Results

Phase II testing methods consisted of digging close-interval tests adjacent to the positive Phase I tests in order to refine site limits, make a preliminary assessment of site integrity, recover additional artifacts, and provide data on intrasite artifact patterning. The Phase II close-interval shovel tests were numbered based on the direction and distance from the Phase I test. For example, Shovel Test 48WN5 is located five meters grid north of Shovel Test 48W. A total of 17 1-x-1 meter XUs and seven 1-x-0.5 meter XUs were placed in site areas that offered the greatest research potential based on the data from the shovel tests. The seven 1-x-0.5 meter XUs were used to excavate within the narrow survey corridor along the hill cut at the south end of the site and within the narrow area between buried utilities and the survey limit.

11.6 Phase II Shovel Test Results

Phase II shovel tests were typically placed at 5-meter intervals adjacent to positive Phase I tests. A total of 103 artifacts were recovered from 14 Phase II tests, including 65 FCR, 23 pieces of lithic debris, four faunal fragments, ten stone tools (an end scraper and nine netsinkers) and one core (Table 21). Artifacts were recovered from 0 to 90 cmbs, with most from 0 to 30 cmbs.

Table 21. Site 21CA772 Summary of Artifacts from Phase II Shovel Tests.

Shovel Test	Depth (cmbs)	Count	Artifact Type
48WN5	0-30	1	Bifacial thinning flake, rhyolite
87EN5	0-30	1	Bipolar flake, quartz
		1	Nonbifacial flake, chalcedony
		1	Bipolar flake, granitic
		8	FCR
87ES10	0-30	1	Other G4 flake, quartz
		2	FCR
88ES5	0-30	5	FCR
		9	Netsinker
89ES5	0-30	1	Bipolar flake, Lake Superior Agate
		2	Broken flake, quartz
		1	Other G4 flake, quartz
		4	FCR
		1	End scraper, Swan River Chert
	70-90	1	Bipolar flake, quartz
		1	Broken flake, Prairie du Chien Chert (oolitic)
		1	FCR
90EN5	0-30	3	Broken flake, quartz
		1	Broken flake, Lake Superior Agate
		4	FCR
90ES10	0-30	6	FCR
90ES5	0-30	1	Broken flake, Jasper Taconite
		3	FCR
	65-85	3	Mammalian, unidentifiable, fragment
		1	Mammalian, small, unidentifiable fragment
91EN5	0-30	3	FCR
91ES5	0-30	1	Decortication flake, basaltic
		1	Broken flake, quartz
		16	FCR
92ES5	0-30	1	Core, unpatterned (multi-directional), Tongue River Silica
		1	Bipolar flake, Tongue River Silica
		1	Decortication flake, chalcedony
		1	Nonbifacial flake, quartz
		1	Broken flake, quartz
		5	FCR
93ES5	0-30	6	FCR
95ES7	0-30	1	Broken flake, quartz
96EN8	0-75	2	FCR
Total	**-**	**103**	**-**

11.7 XUs 1, 2, 7S, 7N 8, 10, 11, and 12

XUs 1, 2, 7S, 7N, 8, 10, 11, and 12 were contiguous units centered on Phase II Shovel Test 90E, which yielded 20 ceramics, six pieces of FCR, five faunal fragments, and two pieces of lithic debris. The landscape was fairly level. The units were placed in a four meter strip of land between buried utilities and the survey limit. Excavation was terminated at the following depths based on a substantial decrease of artifacts in each unit, as artifact depths varied slightly between units: 60 cmbs in XUs 1, 7N, 7S; 70 cmbs in XUs 2 and 8; and 50 cmbs in XUs 10, 11, and 12. A shovel test was dug in the base of XU 12 to a depth of 80 cmbs, but no artifacts were recovered. XUs 7S, 7N, 11, and 12 were half units that were 1 by 0.5 meter in size. A summary of artifacts from the XUs is presented in Tables 22 and 23.

21CA772 Layout of XUs 1, 2, 7S, 7N, 8, 10, 11, and 12.

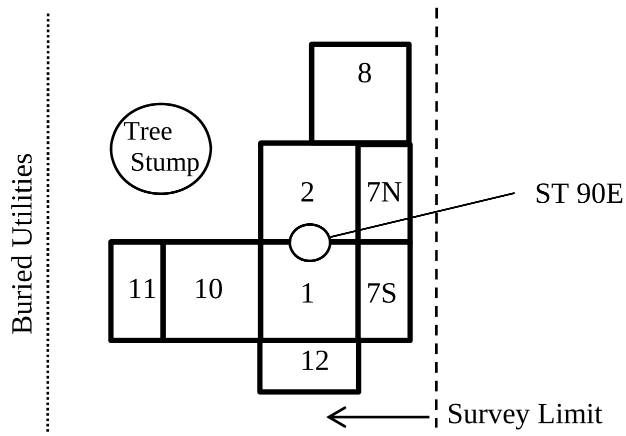


Table 22. Site 21CA772 Artifacts by Count from XUs 1, 2, 7S, 7N, 8, 10, 11, and 12.

Depth (cmbs)	Lithic Debris	Core	Lithic Tool	Ceramic	Faunal	Faunal Thermally Altered	FCR	Total	%
0-10	11	1	-	77	-	-	47	**136**	**10**
10-20	42	-	3	159	3	5	177	**389**	**30**
20-30	74	1	2	42	4	37	218	**378**	**29**
30-40	58	2	1	-	-	70	137	**268**	**21**
40-50	27	-	1	1	-	28	30	**87**	**7**
50-60	11	-	-	2	-	10	16	**39**	**3**
60-70	-	-	-	-	-	3	-	**3**	**<1**
Total	**223**	**4**	**7**	**281**	**7**	**153**	**625**	**1300**	**-**
%	**17**	**<1**	**1**	**22**	**1**	**12**	**48**	**-**	**100**

Table 23. Site 21CA772 Artifacts by Weight (grams) from XUs 1, 2, 7S, 7N, 8, 10, 11, and 12.

Depth (cmbs)	Lithic Debris	Core	Lithic Tool	Ceramic	Faunal	Faunal Thermally Altered	FCR	Total	%
0-10	26.5	49.1	-	132.5	-	-	2240.6	**2448.7**	**7**
10-20	144.8	-	908.3	222.2	1.1	1.6	4196.4	**5474.4**	**16**
20-30	147.2	54.9	9.4	34	1.7	14.4	16,099.1	**16,360.7**	**47**
30-40	92.2	70.9	2.3	-	-	16.1	8097.2	**8278.7**	**24**
40-50	51.6	-	1.5	1.7	-	4.4	764.9	**824.1**	**2**
50-60	4.3	-	-	1	-	2.5	1186	**1193.8**	**3**
60-70	-	-	-	-	-	1	-	**1**	**<1**
Total	**466.6**	**174.9**	**921.5**	**391.4**	**2.8**	**40**	**32,584.2**	**34,581.4**	**-**
%	**1**	**1**	**3**	**1**	**<1**	**<1**	**94**	**-**	**100**

Artifact Summary and Vertical Distribution

A total of 1,300 artifacts were recovered from XUs 1, 2, 7S, 7N, 8, 10, 11, and 12, including 625 FCR, 281 ceramics, 223 pieces of lithic debris, 160 faunal fragments, seven stone tools (four utilized flakes, two retouched flakes, and a dual function anvilstone/chopper tool), and four cores (Tables 22 and 23). The ceramics are all Ogechie ware.

Artifacts were recovered between 0 and 70 cmbd. The zone with the greatest artifact density occurs between 10 and 40 cmbs and contained 80 percent of the artifacts by count and 87 percent by weight. A review of the specific artifact classes by depth and radiocarbon dates indicates that there are two components, which slightly overlap between 20 and 30 cmbs.

The upper component from 0 to 20 cmbs is defined by a concentration of Terminal Woodland Ogechie ceramics (84 percent by count). Residue from a ceramic sherd yielded a date of 760 +/- 30 RCYBP (cal. 730 to 665 BP). The lower component is Middle/Late Archaic and is defined by a concentration of thermally-altered faunal material (88 percent by count) from 20 to 50 cmbs, which dated to approximately 5700 RCYBP (6600 cal BP) from calcined bones recovered in XU 7N at 20 to 30 cmbs and XU 10 at 30 to 40 cmbs.

FCR occurs in moderate quantity in the upper component but is more abundant in the lower component. The 20 to 40 cmbs levels have 1.5 times more FCR by count and four times more by weight than the 0 to 20 cmbs levels. Lithic debris is also more abundant in the lower component, as the 20 to 40 cmbs levels have 2.5 times more by count and 1.3 times more by weight than the 0 to 20 cmbs levels. It is likely that the 20 to 30 cmbs level contains an overlap of these components, based on ceramic sherds in this level (18 percent of all sherds occur in this level). Most of the artifacts from 30 to 70 cmbs are expected to be from the lower (Archaic) component, with a very small amount of displaced artifacts from the upper component, as indicated by the few ceramics recovered from 40 to 60 cmbs. A review of artifact types and lithic materials is conducted below to examine vertical patterning from each component.

Review of Artifact Types by Depth

A review of diagnostic flake types and tools by depth indicates that there is some patterning by depth related to components (Table 24), although the sample size is small for the upper component (Terminal Woodland) from 0 to 20 cmbs. A wide range of diagnostic flake types occur in the lower component (Middle/Late Archaic) below 20 cmbs, with bifacial shaping flakes being particularly abundant, as compared to the upper component where they are very sparse. Also, all of the utilized/retouched flakes are in the lower component below 20 cmbs and most of the bifacial thinning flakes. In the upper component (Terminal Woodland) from 0 to 20 cmbs, bipolar and nonbifacial flakes are most prominent, with only very small amounts of bifacial thinning and shaping flakes. In summary, bifacial flakes and utilized/retouched flakes are primarily associated with the lower component (Middle/Late Archaic).

Table 24. Site 21CA772 Diagnostic Lithic Debris and Tools by Depth in XUs 1, 2, 7S, 7N, 8, 10, 11, and 12.

Depth cmbs	Bipolar Flakes	Bifacial Shaping Flakes	Bifacial Thinning Flakes	Decortication Flakes	Nonbifacial Flakes	Utilized/ Retouch Flakes
0-10	5	-	-	-	4	-
10-20	5	3	2	4	8	-
20-30	6	11	4	5	14	2
30-40	5	15	3	3	5	1
40-50	3	6	3	1	1	1
50-60	-	7	-	-	1	-
60-70	-	-	-	-	-	-

Lithic raw materials show discrete vertically patterning related to site components for a few materials, but many materials occur in similar amounts in both components (Table 25). Prairie du Chien Chert, Swan River Chert, quartzite, rhyolite, and Knife River Flint are notably more numerous or occur only in the lower component (Middle/Late Archaic) below 20 cmbs. The other materials occur in approximately equal amounts in both components.

Table 25. Site 21CA772 Raw Materials by Depth in XUs 1, 2, 7S, 7N, 8, 10, 11, and 12.

Depth cmbs	Basaltic	Chal-cedony	Knife Lake Siltstone	Knife River Flint	Lake Superior Agate	Prairie du Chien Chert	Quartzite	Swan River Chert	Tongue River Silica	Quartz	Rhyolite
0-10	-	1	1	-	2	-	1	1	-	4	
10-20	5	1	8	-	-	3	2	-	3	21	
20-30	7	-	4	2	-	13	6	2	2	33	
30-40	2	2	4	-	2	20	5	2	1	17	2
40-50	1	-	2	-	2	7	2	2	1	10	
50-60	-	-	1	1	1	4	1	1	-	1	
60-70	-	-	-	-	-	-	-	-	-	-	

In summary, at this location the Middle/Late Archaic component was characterized by thermally altered fauna, FCR, lithic debris, cores (n=3), and stone tools. These artifact types are indicative of a habitation where lithic reduction and cooking/heating activities occurred. Faunal remains are mostly small, unidentifiable fragments but include turtle and medium/large and large mammal. The lithic activities from the Middle/Late Archaic component include the initial through final stages of lithic reduction and tool manufacture. A variety of lithic reduction technologies are represented, including nonbifacial, bipolar, and a notable amount of bifacial reduction, particularly late-stage biface shaping. Lithic raw materials associated with the Middle/Late Archaic component include Prairie du Chien Chert, Swan River Chert, quartzite, rhyolite, and Knife River Flint, which are notably more numerous or occur only in the lower component.

The Terminal Woodland component at this location was characterized by ceramics, FCR, lithic debris, stone tools, a core, and very small amounts of faunal material. In contrast to the Middle/Late Archaic component, the Terminal Woodland component has a notable lack of faunal material, lithics from bifacial reduction, and a more limited use of exotic, non-local, and other lithic raw materials.

Soils and Stratigraphy
The soil horizons from selected XUs are depicted in wall profiles and a photographs in Figures 22 to 27. The soil profile consists of a sandy loam A horizon, overlying a loamy sand AB horizon, loamy sand B horizon, and sand C horizon. The soils are fairly undisturbed, as only very slight modern impacts were observed and only a minimal amount of rodent burrows were present in most levels. However, there was a moderate amount of tree roots in most levels.

11.8 XUs 3, 6, and 9

XUs 3, 6, and 9 were contiguous units placed at the location of Phase II Shovel Test 88ES5. XU 3 was placed so that the shovel test was in the northwest corner of the unit. Shovel Test 88ES5 yielded nine netsinkers and five pieces of FCR. The terrain sloped very slightly to the northeast, and XU 9 was adjacent to the hill cut of the ROW. The units were placed in a narrow (1.5 meter) strip of land between the survey limit and the hill cut. XU 9 was a half unit that was 1.0-x-0.5 meter in size. Excavation was terminated at a depth of 60 cmbs in XUs 5 and 9 and 50 cmbs in XU 6 because of the absence of artifacts. A summary of artifacts from the XUs is presented in Tables 26 and 27. A notable find in these units was a cluster of 28 netsinkers.

21CA772 Layout of XUs 3, 6, and 9.

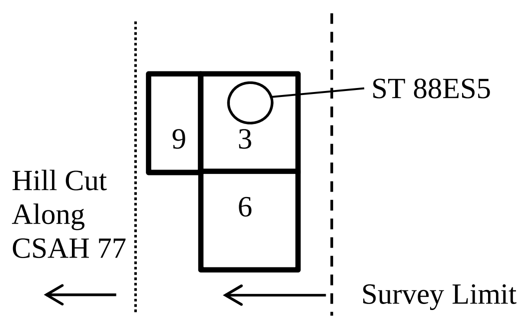


Table 26. Site 21CA772 Artifacts by Count from XUs 3, 6, and 9.

Depth (cmbs)	Lithic Debris	Core	Lithic Tool	Net Sinker*	Faunal Thermally Altered	FCR**	Total	%
0-10	3	-	-	-	1	9	**13**	**6**
10-20	18	2	1	2	6	65	**94**	**44**
20-30	13	-	-	23	3	38	**77**	**36**
30-40	5	-	-	3	2	4	**14**	**7**
40-50	2	-	-	-	1	13	**16**	**7**
50-60	-	-	-	-	-	-	**0**	**0**
Total	**41**	**2**	**1**	**28**	**13**	**129**	**214**	**-**
%	**19**	**1**	**<1**	**13**	**6**	**60**	**-**	**100**

* Netsinkers were recovered as piece plots and not by level; their placement by level in this table was based on the bottom depth of the netsinker. ** Eight FCR were piece plotted, and the method for their placement by level in this table was the same as the netsinkers.

Table 27. Site 21CA772 Artifacts by Weight (grams) from XUs 3, 6, and 9.

Depth (cmbs)	Lithic Debris	Core	Lithic Tool	Net Sinker*	Faunal Thermally Altered	FCR**	Total	%
0-10	1.7	-	-	-	0.3	127.2	**129.2**	**1**
10-20	68.6	239.5	.5	541.5	2.2	3157.8	**4010.1**	**25**
20-30	18.1	-	-	7266.6	2.4	2192.5	**9479.6**	**59**
30-40	14.8	-	-	1055.3	0.9	847.4	**1918.4**	**12**
40-50	2.2	-	-	-	0.2	475.1	**477.5**	**3**
50-60	-	-	-	-	-	-	**0**	**0**
Total	**105.4**	**239.5**	**.5**	**8863.4**	**6.0**	**6800.0**	**16,014.8**	**-**
%	**1**	**1**	**<1**	**55**	**<1**	**42**	**-**	**100**

* Netsinkers were recovered as piece plots and not by level; their placement by level in this table was based on the bottom depth of the netsinker. Most netsinkers were recovered between 19 and 30 cmbs.
** Eight FCR were piece plotted, and the method for their placement by level in this table was the same as the netsinkers.

Artifact Summary and Vertical Distribution

A total of 214 artifacts were recovered from XUs 3, 6, and 9, including 129 FCR, 41 pieces of lithic debris, 28 netsinkers, 13 thermally-altered faunal fragments, two cores, and a stone tool (retouched flake) (Tables 26 and 27). No diagnostic artifacts or radiocarbon dates were obtained from these units.

Artifacts were recovered between 0 and 50 cmbd. The zone with the greatest artifact density by count occurs between 10 and 30 cmbs (80 percent) and by weight occurs between 20 and 30 cmbs (59 percent). Each artifact type clusters in the zone of 10 to 30 cmbs, with smaller amounts above and below this zone. Within this zone, the lithic debris and FCR are slightly more abundant from 10 to 20 than 20 to 30 cmbs. In contrast, the netsinkers are almost exclusively in the 20 to 30 cmbs level, suggesting they may be older than the artifacts in the 10 to 20 cmbs level and that there are likely two components present. If these units contain the same Terminal Woodland and Middle/Late Archaic components identified in nearby sites areas, then the netsinkers would likely be from the Middle/Late Archaic. The uniform vertical patterning of each artifact type (except the netsinkers) suggests that the units contain either a single component or two overlapping components that are indistinguishable. Evidence for multiple components from nearby tests includes the following: 13 meters south, a Terminal Woodland point was recovered from Shovel Test 87E; seven meters south, fauna dating to 5910 +/- 30 RCYBP was recovered from XU 13 at 20 to 30 cmbs; and 20 meters north three dates on fauna were obtained, which are 100 +/- 30 RCYBP from XU 20 at 10 to 20 cmbs, 5870 +/- 30 RCYBP from XU15 at 20 to 30 cmbs, and 4950 +/- 30 RCYBP from XU15 at 60 to 70 cmbs.

Artifact Types

A review of diagnostic flakes and lithic raw materials does not show any clear vertical patterning by depth that indicates the presence of two discrete components (Tables 28 and 29), although the sample size is very small. The following is perhaps noteworthy: Knife Lake Siltstone is slightly more numerous below 20 cmbs; Tongue River Silica most abundant from 10 to 20 cmbs; and unidentified chert occurs only below 30 cmbs.

Table 28. Site 21CA772 Diagnostic Lithic Debris by Depth in XUs 3, 6, and 9.

Depth cmbs	Bipolar Flakes	Bifacial Thinning Flakes	Decortication Flakes	Nonbifacial Flakes
0-10	-	-	-	2
10-20	4	-	2	6
20-30	2	1	1	3
30-40	1	-	1	3
40-50	-	-	1	-
50-60	-	-	-	-
60-70	-	-	-	-

Table 29. Site 21CA772 Raw Materials by Depth in XUs 3, 6, 9.

Depth cmbs	Basaltic	Knife Lake Siltstone	Lake Superior Agate	Quartzite	Swan River Chert	Tongue River Silica	Quartz	Unidentified Chert
0-10	-	-	-	-	-	2	1	-
10-20	1	1	2	1	1	9	5	-
20-30	1	3	3	-	-	4	2	-
30-40	-	-	2	-	1	1	-	1
40-50	-	-	-	-	-	1	-	1
50-60	-	-	-	-	-	-	-	-
60-70	-	-	-	-	-	-	-	-

Netsinkers

A summary of the 28 netsinkers recovered from the units and nine netsinkers from Shovel Test 88ES5 is presented in Table 30. All were unbroken, except one, and they appeared to be finished and in usable condition. Most of the netsinkers were found in a cluster measuring about 30 by 70 cm in diameter, with the overall distribution of the netsinkers being about one meter in diameter. The netsinkers were mapped and photographed in planview (Figures 28 and 29). A photograph of the entire assemblage is presented in Figure 30, with examples in Figures 31 and 32. The depth of most of the netsinkers was between 19 and 30 cmbs. The netsinkers do not appear to have been cached in a pit, based on their diffuse horizontal distribution (one meter wide) and lack of soil discoloration, which would indicate a pit feature. They were likely left on the ground surface and were naturally displaced downward through the soil over time.

Table 30. Site 21CA772 Netsinker Summary from XUs 3, 6, and 9.

Piece Plot (PP) #, Description, Maximum Measurements (mm) for Length (L), Width (W), Thickness (T) and Weight (Wt) grams	Material	Depth cmbs
PP 2; flaked on both edges; L=109.9, W=57.6, T=38.9, Wt=303.5	Granitic	12-17
PP 6; flake on both edges; L=156.4, W=68.5, T=65, Wt=1104	Quartzite	20-27
PP 7; flaked on both edges; L= 108.6, W= 63.5, T= 33.4, WT=351.8	Quartzite	16-20
PP 8; natural notch on one edge, flaked on one edge; L= 105.5, W= 70.1, T= 18.4, WT=229.8	Quartzite	20-22
PP 9; flaked on both edges; L= 97.9, W= 69.5, T= 36, WT= 288.9	Unidentified material	17-22
PP 10; flaked on both edges; L= 109.5, W= 72.2, T= 18, WT=266.8	Quartzite	18-20
PP 11; natural notch on both edges; L= 113.9, W= 54.3, T= 23.9, WT=248.1	Unidentified material	20-22

Table 30. Continued.

Piece Plot (PP) #, Description, Maximum Measurements (mm) for Length (L), Width (W), Thickness (T) and Weight (WT) grams	Material	Depth cmbs
PP 12; broken; natural notch on one edge, refit w/ 160.1; L= 185.1, W= 61.3, T= 9.7, WT=89.9, refits with broken piece from ST88ES5	Quartzite	20-23
PP 13; flaked on both edges; L= 106.5, W= 87.2, T= 16.7, WT=272	Quartzite	17-24
PP 15; flaked on both edges; L= 103.2, W= 61.7, T= 30.9, WT=318.9	Granitic	24-31
PP 16; natural notch on one edge, flaked on one edge; L= 87.6, W= 70, T= 32.8, WT=317.3	Rhyolite*	19-23
PP 17; flaked on both edges; L= 119.6, W= 60.5, T= 25.2, WT=233.3	Quartzite	19-23
PP 18; flaked on both edges; L= 93.9, W= 64.7, T= 34.8, WT=263.7	Granitic	19-23
PP 19; natural notch on one edge, flaked on one edge; L= 133.5, W= 60, T= 27.4, WT=357.2	Granitic	19-24
PP 20; flaked on both edges; L= 133.6, W= 59.5, T= 12.3, WT=196.2	Basaltic	22-25
PP 21; flaked on both edges; L= 116.4, W= 70.4, T= 22.5, WT=290.4	Basaltic	20-25
PP 22; natural notch on one edge, flaked on one edge; L= 78.2, W= 64.8, T= 22.3, WT=220	Rhyolite*	21-24
PP 24; flaked on both edges; L= 103.7, W= 70.3, T= 30.2, WT=313.4	Quartzite	20-24
PP 25; flaked on both edges; L= 108, W= 68.5, T= 29.3, WT=400.9	Metamorphic	13-20
PP 26; flaked on both edges; L= 115.9, W= 67, T= 27.5, WT=376.5	Metamorphic	17-21
PP 27; flaked on both edges; L= 110.1, W= 78.9, T= 19.8, WT=330	Quartzite	20-26
PP 28; natural notch on one edge, flaked on one edge; L= 96, W= 72.1, T= 27.3, WT=238	Unidentified material	13-19
PP 29; flaked on both edges; L= 83.9, W= 66.1, T= 32.5, WT=332.2	Quartzite	16-21
PP 32; natural notch on one edge, flaked on one edge; L= 118.5, W= 49.5, T= 28.8, WT=233.1	Basaltic	24-28
PP 34; flaked on both edges; L= 110.1, W= 66.8, T= 31.5, WT=355.5	Quartzite	24-31
PP 36; flaked on both edges; L= 98.5, W= 55.3, T= 37.2, WT=271.5	Granitic	19-24
PP 37; natural notch on one edge, flaked on one edge; L= 125.8, W= 33.8, T= 27.8, WT=279.6	Basaltic	18-24
PP 38; natural notch on one edge, flaked on one edge; L= 92.9, W= 57.8, T= 39.3, WT= (not on planview map)	Basaltic	29-35
ST 88ES5; natural notch on one edge, flaked on one edge; L= 185.1, W= 61.3, T= 9.7, WT=117.6 refits with PP 12	Quartzite	0-30
ST 88ES5; flaked on both edges; L= 116.5, W=66.4; T= 26.5, WT=364.1	Metamorphic	0-30
ST 88ES5; flaked on both edges; L= 106.6, W= 72, T= 29.4, WT=376.1	Quartzite	0-30
ST 88ES5; natural notch on one edge, flaked on one edge; L= 108.6, W= 65.6, T= 22.1, WT=262.7	Rhyolite*	0-30
ST 88ES5; natural notch on one edge, flaked on one edge; L= 120.6, W= 58.1, T= 25.3, WT=278.4	Metamorphic	0-30
ST 88ES5; flaked on both edges; L= 105.5, W= 71.3, T= 26.7, WT=272.3	Siltstone	0-30
ST 88ES5; flaked on both edges; L= 91, W= 73.3, T= 23.7, WT=249.1	Quartzite	0-30
ST 88ES5; flaked on both edges; L= 99.2, W= 80.2, T= 19.9, WT=205.9	Quartzite	0-30
ST 88ES5; flaked on both edges; L= 97.3, W= 68.5, T= 21.1 WT= 262.9	Quartzite	0-30

* Reddish-brown colored rhyolite similar to the variety found along the north shore of Lake Superior

Soils and Stratigraphy

The soil horizons from the XUs are depicted in a wall profile and a photograph in Figures 33 and 34. The soil profile consists of a sandy loam A horizon, overlying a loamy sand B horizon and a sand C horizon. There is a notable increase in gravels and sand with depth. The soils appear to be fairly undisturbed, as no modern impacts were observed and only a minimal amount of rodent burrows and tree roots were observed.

11.9 XUs 4 and 5

XU 4 was placed between Phase II Shovel Tests 91EN5 and 92ES5, which yielded eight FCR, four pieces of lithic debris, and a core. Excavation was terminated at a depth of 50 cmbs because of the lack of artifacts. XU 5 was located about nine meters south of XU 4 and was placed between Shovel Tests 91E and 91ES5, which yielded 21 FCR and three pieces of lithic debris. The terrain is fairly level at the location of both units. The units were placed 8.5 to 9.5 meters east of the CSAH 77 centerline, and buried utilities were located about one meter west. Excavation was terminated at a depth of 60 cmbs because of the lack of artifacts. A summary of artifacts from XUs 4 and 5 is presented in Tables 31 to 34. The results of the units are presented together because of their proximity and similar artifact assemblage.

Table 31. Site 21CA772 Artifacts by Count from XU 4.

Depth (cmbs)	Lithic Debris	FCR	Total	%
0-10	4	0	**4**	**3**
10-20	17	36	**53**	**34**
20-30	8	74	**82**	**52**
30-40	4	11	**15**	**10**
40-50	2	1	**3**	**2**
Total	**35**	**122**	**157**	**-**
%	**22**	**78**	**-**	**100**

Table 32. Site 21CA772 Artifacts by Weight (g) from XU 4.

Depth (cmbs)	Lithic Debris	FCR	Total	%
0-10	7.7	0	**7.7**	**<1**
10-20	36	639	**675**	**18**
20-30	20.5	2,799	**2,819.5**	**77**
30-40	4.5	106	**110.5**	**3**
40-50	1.1	43	**44.1**	**1**
Total	**69.8**	**3,587**	**3,656.8**	**-**
%	**2**	**98**	**-**	**100**

Table 33. Site 21CA772 Artifacts by Count from XU 5.

Depth (cmbs)	Lithic Debris	FCR	Faunal	Total	%
0-10	8	0	0	**8**	**5**
10-20	3	52	0	**55**	**34**
20-30	2	75	0	**77**	**47**
30-40*	0	22	0	**22**	**13**
40-50	0	1	1	**2**	**1**
50-60	0	0	0	**0**	**0**
Total	**13**	**150**	**1**	**164**	**-**
%	**8**	**91**	**<1**	**-**	**100**

*includes FCR collected from 25 to 35 cmbs from darker soil stain that was determined to not be a feature

Table 34. Site 21CA772 Artifacts by Weight (g) from XU 5.

Depth (cmbs)	Lithic Debris	FCR	Faunal	Total	%
0-10	7.6	0	0	**7.6**	**<1**
10-20	6	638	0	**644**	**14**
20-30	1.5	1164	0	**1165.5**	**25**
30-40*	0	2438	0	**2438**	**52**
40-50	0	439	1.5	**440.5**	**9**
50-60	0	0	0	**0**	**0**
Total	**15.1**	**4679**	**1.5**	**4695.6**	**-**
%				**-**	**100**

*includes FCR collected from 25 to 35 cmbs from darker soil stain that was determined not to be a feature

Artifact Summary and Vertical Distribution

A total of 157 artifacts were recovered from XU 4, including 122 FCR and 35 pieces of lithic debris (Tables 31 and 32). No diagnostic artifacts were recovered, and no features were identified. In XU 4 artifacts were recovered between 0 and 50 cmbs. The zone with the greatest artifact density by count (86 percent) and weight (95 percent) occurs between 10 and 30 cmbs. The small amount of artifacts above and below this zone was likely displaced by natural processes.

A total of 164 artifacts were recovered from XU 5, including 150 FCR, 13 pieces of lithic debris, and one faunal fragment (Tables 33 and 34). No diagnostic artifacts were recovered, and no features were identified. In XU 5 artifacts were recovered between 0 and 50 cmbs. The zone with the greatest artifact density by count (81 percent) was between 10 and 30 cmbs and by weight (77 percent) was between 20 and 40 cmbs. The small amount of artifacts above and below this zone was likely displaced by natural processes. The vertical patterning suggests two components are present, as lithic debris is most numerous from 0 to 10 cmbs and FCR is most abundant from 20 to 30 cmbs. The presence of multiple components is supported by evidence from nearby tests as follows: 15 meters south in XU block 1, 2, 7S, 7N, 8, 10, 11, and 12, a Terminal Woodland component with Ogechie ceramics extended from 0 to 20 cmbs, with most of the ceramics from 10 to 20 cmbs, while fauna dating to c. 5700 RCYBP was recovered from 20 to 40 cmbs; and 15 meters north in XU block 16, 17, 18W, 18N, and 22, a Terminal Woodland component with Ogechie ceramics extended from 10 to 30 cmbs.

Soils and Stratigraphy

The soil horizons from XUs 4 and 5 are depicted in a wall profile and a photograph in Figures 35 to 38. The soil profiles consist of a sandy loam A horizon, overlying loamy sand and sand B horizons. The gravel content was low throughout the profile. The soils appear to be fairly undisturbed in XU 5, as no modern impacts were observed and only a minimal amount of rodent burrows and tree roots were observed. However, XU 4 had a moderate amount of rodent burrows.

11.10 XUs 13 and 14

XUs 13 and 14 were contiguous units placed adjacent to Shovel Test 87EN5, which yielded three pieces of lithic debris and eight FCR. The landscape was fairly level. The units were placed 8.7 to 9.7 meters east of the CSAH 77 centerline, and the road cut is 1.2 meters to the west. Excavation was terminated at a depth of 60 cmbs because of the lack of artifacts. A shovel test was dug in the base of XU 14 to a depth of 90 cmbs, but no artifacts were recovered from the test. A summary of artifacts from the XUs is presented in Tables 35 and 36.

Table 35. Site 21CA772 Artifacts by Count from XUs 13 and 14

Depth (cmbs)	Lithic Debris	Core	Lithic Tool	Faunal	Faunal Thermally Altered	FCR	Total	%
0-10	31	1	-	-	2	25	**59**	**8**
10-20	28	2	4	-	88	118	**240**	**32**
20-30	25	2	1*	1	165	106	**300**	**40**
30-40	13	-	2	-	32	33	**80**	**11**
40-50	6	1	1	15	24	7	**54**	**7**
50-60	5	-	-	-	14	4	**23**	**3**
Total	**108**	**6**	**8**	**16**	**325**	**293**	**756**	**-**
%	**14**	**1**	**1**	**2**	**43**	**39**	**-**	**100**

* one anvilstone was piece plotted at 10 to 23 cmbs

Table 36. Site 21CA772 Artifacts by Weight (grams) from XUs 13 and 14

Depth (cmbs)	Lithic Debris	Core	Lithic Tool	Faunal	Faunal Thermally Altered	FCR	Total	%
0-10	57.4	127	-	-	0.3	1464.2	**1648.9**	**11**
10-20	38.1	26.3	338.4	-	36.6	3421	**3860.4**	**25**
20-30	87.9	88.6	3130	1	75.9	4097	**7480.4**	**48**
30-40	14.3	-	442.6	-	15.4	1522	**1994.3**	**13**
40-50	1.9	12	1.8	1.2	5.4	350	**372.3**	**2**
50-60	10.4	-	-	-	4.5	84	**98.9**	**1**
Total	**210**	**253.9**	**3912.8**	**2.2**	**138.1**	**10,938.2**	**15,455.2**	**-**
%	**1**	**2**	**25**	**<1**	**<1**	**71**	**-**	**100**

* one anvilstone was piece plotted at 10 to 23 cmbs

Artifact Summary and Vertical Distribution

A total of 756 artifacts were recovered from XUs 13 and 14, including 108 pieces of lithic debris, 293 FCR, 325 thermally-altered faunal fragments, 16 faunal fragments, six cores, and eight stone tools (four utilized flakes, a projectile point, a scraper, a large denticulate, and an anvilstone) (Tables 35 and 36). No features were identified. A Table Rock projectile point (Late Archaic) was recovered from XU 13 at 10 to 20 cmbs. A radiocarbon date of approximately 5910 RCYBP (6700 cal BP) was obtained from calcined bone recovered in XU 13 at 20 to 30 cmbs.

Artifacts were recovered between 0 and 60 cmbs. The zone with the greatest artifact density (72 percent by count and 73 percent by weight) occurs between 10 and 30 cmbs. It is likely that the artifacts from the deepest level (50 to 60 cmbs) were displaced downward by natural processes. Despite the cluster of artifacts from 10 to 30 cmbs, there is a notable difference in the vertical distribution of some artifact types. Lithic debris counts are approximately equal for each level between 0 and 30 cmbs. In contrast, there is substantially more FCR from 10 to 30 cmbs than from 0 to 10 cmbs, and there much more faunal material from 20 to 30 cmbs than the 0 to 20 cmbs. This differential vertical patterning of artifact types indicates that there are probably at least two components, which probably overlap in the 10 to 20 cmbs level.

Evidence from nearby tests also indicates that multiple components are probably present in these units as follows: seven meters south, a Terminal Woodland point was recovered from Shovel Test 87E; and 25 meters north, dates of 5870 +/- 30 RCYBP and 4950 +/- 30 RCYBP were obtained from faunal material in XU 15.

Artifact Types and Components

A review of diagnostic flake types and lithic raw materials does show some differences in vertical patterning by depth (Tables 37 and 38). The 0 to 10 cmbs level contains mostly bipolar flakes, with a small amount of nonbifacial flakes, and no decortication flakes. In contrast, flake types below 10 cmbs include moderate amounts of all diagnostic types, excluding bifacial thinning flakes which are rare or absent in all levels.

Notable patterns in raw materials include the following: 1) there is a concentration of basalt and quartzite in the 0 to 10 cmbs level; 2) there is an absence of several materials from 0 to 10 cmbs that are present in deeper levels; 3) there is a cluster of unidentified material from 0 to 20 cmbs; and 4) there is a cluster of quartz from 10 to 30 cmbs.

The vertical distribution data on flake types and raw materials strongly indicates that multiple components are present. It is suggested that the 0 to 10 cmbs level is a Terminal Woodland component with a Middle/Late Archaic component below 20 cmbs. However, there is likely an overlap in these components in the 10 to 20 cmbs level.

Table 37. Site 21CA772 Diagnostic Lithic Debris by Depth in XUs 13 and 14.

Depth cmbs	Bipolar Flakes	Bifacial Thinning Flakes	Decortication Flakes	Nonbifacial Flakes
0-10	6	1	-	2
10-20	4	-	7	5
20-30	6	-	2	6
30-40	4	-	1	1
40-50	-	-	-	1
50-60	1	-	1	1

Table 38. Site 21CA772 Raw Materials by Depth in XUs 13 and 14.

Depth cmbs	Basaltic	Knife Lake Siltstone	Lake Superior Agate	Quartzite	Swan River Chert	Tongue River Silica	Quartz	Unidentified Material	Chalcedony
0-10	13	-	-	4	-	-	6	7	-
10-20	4	2	1	-	3	3	11	7	2
20-30	1	1	-	1	4	1	14	4	2
30-40	2	1	-	-	1	-	8	3	-
40-50	1	-	-	-	-	1	3	-	2
50-60	-	-	1	-	2	-	1	-	-

Soils and Stratigraphy

The soil horizons from the XUs are depicted in a wall profile and a photograph in Figures 39 and 40. The soil profile consists of a sandy loam A horizon, overlying loamy sand B horizons and a gravelly sand C horizon. The soils are minimally to moderately disturbed. The upper five cm in XU 13 had modern soil disturbances and glass. The amount of rodent burrows and roots ranged from minimal to moderate in these units.

11.11 XUs 15, 19, 20, and 21

XUs 15, 19, 20, and 21 were contiguous units placed adjacent to Phase I Shovel Test 89E, which yielded one piece of lithic debris, two thermally altered faunal remains, and one FCR. The landscape was fairly level. The units were placed in a narrow (2.0 meter) strip of land between the survey limit and the hill cut. XU 21 was a half unit that was 1.0-x-0.5 meter in size. Excavation was terminated at a depth of 90 cmbs in XU 15 and 80cmbs in XUs 19, 20, and 21 because of the significant decrease in artifacts. A summary of artifacts from the XUs is presented in Tables 39 and 40.

21CA772 Layout of XUs 15, 19, 20, and 21.

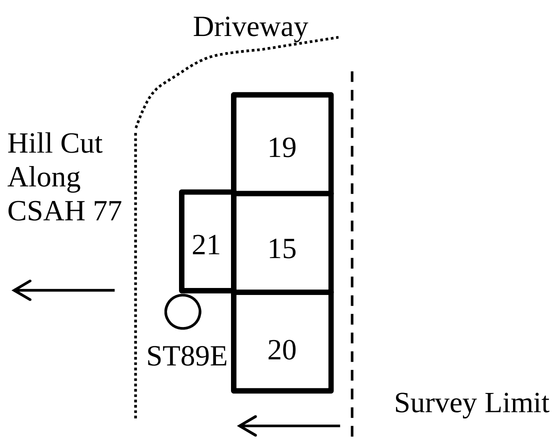


Table 39. Site 21CA772 Artifacts by Count from XUs 15, 19, 20, and 21.

Depth (cmbs)	Lithic Debris	Core	Lithic Tool	Faunal	Faunal Thermally Altered	FCR	Total	%
0-10	-	-	-	-	-	2	**2**	**<1**
10-20	26	-	3	9	1	43	**82**	**12**
20-30	47	4	3	1	35	143	**233**	**33**
30-40	38	4	7	-	48	60	**157**	**23**
40-50	28	1	1	-	44	17	**91**	**13**
50-60	19	2	2	-	23	23	**69**	**10**
60-70	10	1	-	-	18	13	**42**	**6**
70-80	7	-	-	-	5	5	**17**	**2**
80-90	1	-	-	-	2	-	**3**	**<1**
Total	**176**	**12**	**16**	**10**	**176**	**306**	**696**	**-**
%	**25**	**2**	**2**	**1**	**25**	**44**	**-**	**100**

Table 40. Site 21CA772 Artifacts by Weight (grams) from XUs 15, 19, 20, and 21.

Depth (cmbs)	Lithic Debris	Core	Lithic Tool	Faunal	Faunal Thermally Altered	FCR	Total	%
0-10	-	-	-	-	-	390	**390**	**3**
10-20	70.4	-	19.9	35.3	0.6	1528	**1654.2**	**13**
20-30	77	65	965.3	0.4	14.6	5556.7	**6679**	**53**
30-40	82.8	220.6	33.8	-	19.7	1834	**2190.9**	**18**
40-50	73.3	21.9	4.6	-	17.6	338	**455.4**	**4**
50-60	46.9	15.7	27.3	-	9.6	532	**631.5**	**5**
60-70	29.1	24.9	-	-	7.2	383	**444.2**	**4**
70-80	12.2	-	-	-	1.9	34	**48.1**	**<1**
80-90	0.7	-	-	-	0.3	-	**1**	**<1**
Total	**392.4**	**348.1**	**1050.9**	**35.7**	**71.5**	**10595.7**	**12494.3**	**-**
%	**3**	**3**	**8**	**<1**	**1**	**85**	**-**	**100**

Artifact Summary and Vertical Distribution

A total of 696 artifacts were recovered from XUs 15, 19, 20, and 21, including 306 FCR, 176 thermally altered fauna, 10 unmodified fauna, 176 pieces of lithic debris, 12 cores, and 16 stone tools (Tables 39 and 40). Three of the tools are projectile points, including two probable Terminal Woodland types from 20 to 40 cmbs and a broken point from 50 to 60 cmbs that is not classifiable. Other tools include a Stage 3 biface, and two Stage 4 bifaces (including a large, broken biface with well executed, pressure-flaking from 40 to 50 cmbs), one retouched flake, six utilized flakes, two scrapers, and an anvilstone, which appears to have been used as anvil for bipolar reduction, based on the well-defined pitted areas. A total of 96 bipolar flakes and seven bipolar cores were recovered, supporting the use of the anvilstone for bipolar reduction.

Artifacts were recovered between 0 and 90 cmbs, with a notable decrease below 40 cmbs in both count and weight. The zone with the greatest artifact density occurs between 20 and 40 cmbs based on count (56 percent) and weight (71 percent). However, the vertical artifact distribution is quite extensive in these units, with moderate amounts of lithic debris, faunal material, and FCR extending to 70 cmbs. Multiple components are present based on 1) radiocarbon dates and diagnostic artifact types that indicate Terminal Woodland and Middle/Late Archaic components; 2) a moderate density of artifacts was recovered from a broad vertical span (10 to 70 cmbs); and 3) evidence of Terminal Woodland and Middle/Late Archaic components from adjacent site areas. The components are not delineated by bimodal artifact distributions (with the exception of a slight spike in FCR from 50 to 60 cmbs) but are mostly compressed in the zone of greatest artifact density from 20 and 40 cmbs, as indicated by the faunal date of 5870 +/- 30 RCYBP from 20 to 30 cmbs.

It is unlikely that there has been any substantial deposition of sediment on the land surface during the Holocene that would bury cultural components, although slight soil building from organics and wind-blown sediment may have occurred. The main explanation for the extensive vertical distribution of artifacts is most likely displacement caused by natural processes in sandy soils (such a rodent burrows, tree roots/throws, and freeze-thaw cycles), with the older artifacts being subject to a greater amount of displacement over time and having a greater tendency to move downwards to form a “lower” component.

Radiocarbon Dates by Component

Three bone samples from these units were submitted for radiocarbon dating. The dates by depth are as follows: a date of 100 +/- 30 RCYBP from XU 20 at 10 to 20 cmbs; a date of 5870 +/- 30 RCYBP from XU 15 at 20 to 30 cmbs; and a date of 4950 +/- 30 RCYBP from XU 15 at 60 to 70 cmbs (Table 19). The oldest (5870 +/- 30 RCYBP) and youngest (100 +/- 30 RCYBP) faunal material are in very close vertical proximity to each other (within 10 to 20 cm), indicating a probable overlap of Terminal Woodland and Archaic components, which is supported by the provenience of the Terminal Woodland projectile points that occur at the same depth as the oldest fauna. The faunal date of 5870 +/- 30 RCYBP from 20 to 30 cmbs is at least 30 cm above the fauna dated at 4950 +/- 30 RCYBP from 60 to 70 cmbs, which indicates there is considerable vertical displacement of some artifacts from their original position at time of deposition.

Artifact Types by Component

Two of the three projectile points are probably Terminal Woodland types, based on their size, shape, and manufacturing technology. These types include a Nodena type (or preform) that was recovered from 20 to 30 cmbs, and a small side-notched point base that was recovered from 30 to 40 cmbs. The blade fragment of a broken point was recovered from 50 to 60 cmbs, but it is not classifiable. The large, broken biface with well executed, pressure-flaking from 40 to 50 cmbs is most likely from the Archaic component. There is a slight increase in FCR (count and weight) from 50 to 60 cmbs that is also likely associated with the Archaic component.

A review of diagnostic flake types and tools by depth indicates that there is some patterning by depth that may related to site components, although the sample size is very limited (Table 41). It is notable that the 10 to 20 cmbs level has a cluster of bipolar flakes but an absence of bifacial flakes and nonbifacial flakes, which occur in moderate amounts below 20 cmbs. Bipolar flakes and cores also occur from 20 to 80 cmbs, indicating that bipolar technology was used by the earlier component or there is extensive vertical displacement of artifacts. The small sample of bifacial thinning flakes is concentrated from 30 to 40 cmbs, and bifacial shaping flakes occur in equal amounts from 20 to 60 cmbs. The depth of the bifacial flakes suggests that most are likely associated with an early component. Nonbifacial flakes are clustered from 20 to 50 cmbs and decortication flakes from 10 to 30 cmbs. The sample of utilized/retouched flakes and bifaces is small but most occur from 30 to 50 cmbs, with a smaller amount from 10 to 20 cmbs.

Based on the vertical patterning of flake types and tools, it is suggested that the 0 to 20 cmbs level is a Terminal Woodland component, and the Middle/Late Archaic component is below 20 cmbs. The 20 to 30 cmbs level likely contains overlap of these components. However, there is clearly some mixing of components based on the vertical patterning of projectile points and radiocarbon dates.

Table 41. Site 21CA772 Lithic Debris, Cores, and Tools by Depth in XUs 15, 19, 20, and 21.

Depth cmbs	Bipolar Flakes	Bipolar Cores	Bifacial Shaping Flakes	Bifacial Thinning Flakes	Decortication Flakes	Nonbifacial Flakes	Scrapers	Utilized/ Retouch Flakes	Bifaces
0-10	0	0	0	0	0	0	0	0	0
10-20	12	0	0	0	3	3	0	2	1
20-30	6	3	2	2	4	9	1	0	0
30-40	6	2	1	7	2	5	1	4	1
40-50	4	0	2	1	1	7	0	0	1
50-60	2	2	1	1	2	0	0	1	0
60-70	2	0	0	1	0	2	0	0	0
70-80	1	0	0	0	0	0	0	0	0

In general, raw materials don't show any discrete vertically patterning that could be useful to delineate separate components (Table 42). However, several observations are notable: 1) most materials for which there are only a sparse amount (9 or fewer pieces - see materials on the left side of Table 42) have a greater likelihood of being from a single flint knapping event or component. These materials are present in approximately equal amounts throughout several levels (a vertical span of 30 to 60 cm), indicating either that there is substantial vertical displacement or these materials were used by various components; 2) materials that are most abundant (Swan River Chert, Tongue River Silica, and quartz) are most numerous below 20 cmbs, indicating they are more likely associated with the Archaic component; and 3) most materials have a vertical span of 40 cm (four levels) or more.

The following materials occur in fairly tight vertical clusters, and they may be from a single flint knapping event or component: Prairie du Chien Chert from 20 to 40 cmbs; Knife Lake Siltstone is mostly from 30 to 60 cmbs; Knife River Flint from to 20 to 50 cmbs; and quartzite from to 10 to 40 cmbs. The materials below 30 cmbs (such as Knife Lake Siltstone) are more likely to be associated with the Archaic component. However, there is undoubtedly vertical displacement of artifacts and no clear component delineation. Therefore, the association of these materials with specific components is unknown.

Table 42. Site 21CA772 Raw Materials by Depth in XUs 15, 19, 20, and 21.

Depth cmbs	Basaltic	Gunflint/ Animike Silica	Knife Lake Siltstone	Knife River Flint	Lake Superior Agate	Prairie du Chien Chert	Quartzite	Swan River Chert	Tongue River Silica	Quartz
0-10	0	0	0	0	0	0	0	0	0	0
10-20	3	0	0	0	5	0	1	6	6	7
20-30	1	1	1	1	0	1	6	17	12	11
30-40	3	1	2	1	1	2	2	15	11	8
40-50	0	2	2	1	1	0	0	10	5	6
50-60	1	1	2	0	2	0	0	9	6	2
60-70	1	0	0	0	0	0	0	5	1	4
70-80	0	0	0	0	0	0	0	4	1	2

Evidence of Components from Adjacent Site Areas

Terminal Woodland and Archaic artifacts recovered nearby also suggest that multiple components are likely also present in these units. Ogechie ceramics (dating to 760 +/- 30 RCYBP - Terminal Woodland) and fauna dating to c. 5700 RCYBP were recovered in XU block 1, 2, 7S, 7N, 8, 10, 11, and 12 about 20 meters north. About 35 meters south, a Terminal Woodland point was recovered from Shovel Test 87E. About 30 meters south, fauna dating to 5910 +/- 30 RCYBP was recovered from XU 13 at 20 to 30 cmbs.

Soils and Stratigraphy

The soil horizons from the XUs are depicted in a wall profile and a photograph in Figures 41 and 42. The soil profile consists of a sandy loam A horizon, overlying loamy sand B horizons and a sand C horizon. The soils appear to be fairly undisturbed, as no modern impacts were observed and rodent burrows were minimal. However, there was a moderate amount of tree roots in most levels.

11.12 XUs 16, 17, 18W, 18N, and 22

XUs 16, 17, 18W, 18N, and 22 were contiguous units placed adjacent to Phase II Shovel Test 93ES5, which yielded six pieces of FCR. The landscape was fairly level. The units were placed in a narrow (4.0 meter) strip of land between the survey limit and buried utilities. XU 18N was a half unit that was 1.0-x-0.5 meter in size. Excavation was terminated at a depth of 50 cmbs in XUs 16 and 18N, 45 cmbs in XU 17, and 40 cmbs in XU 18W because of the absence of artifacts. A summary of artifacts from the XUs is presented in Tables 43 and 44.

21CA772 Layout of XUs 16, 17, 18W, 18N, and 22.

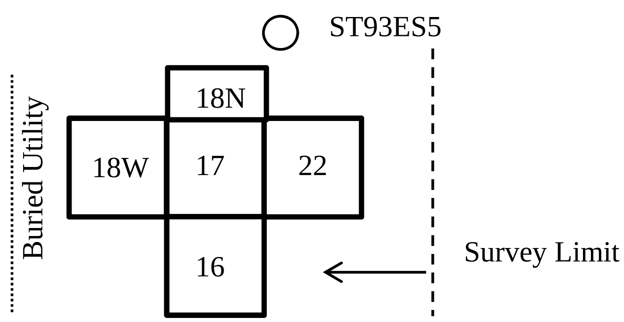


Table 43. Site 21CA772 Artifacts by Count from XUs 16, 17, 18W, 18N, and 22.

Depth (cmbs)	Lithic Debris	Core	Ceramic	FCR	Total	%
0-10	3	1	-	34	**38**	**14**
10-20	15	1	62	63	**141**	**52**
20-30	3	-	19	50	**72**	**27**
30-40	2	1	-	14	**17**	**6**
40-50	-	-	-	1	**1**	**<1**
Total	**23**	**3**	**81**	**162**	**269**	**-**
%	**9**	**1**	**30**	**60**	**-**	**100**

Table 44. Site 21CA772 Artifacts by Weight (grams) from XUs 16, 17, 18W, 18N, and 22.

Depth (cmbs)	Lithic Debris	Core	Ceramic	FCR	Total	%
0-10	5.2	18.9	-	1278	**1302.1**	**12**
10-20	73.3	3.4	208.1	3939	**4223.8**	**40**
20-30	10.8	-	45.3	3961	**4017.1**	**38**
30-40	4.3	41.3	-	844	**889.6**	**8**
40-50	-	-	-	92	**92**	**1**
Total	**93.6**	**63.6**	**253.4**	**10114**	**10524.6**	**-**
%	**1**	**1**	**2**	**96**	**-**	**100**

Artifact Summary and Vertical Distribution

A total of 269 artifacts were recovered from XUs 16, 17, 18W, 18N, and 22, including 162 FCR, 81 ceramics, 23 pieces of lithic debris, and three cores (Tables 43 and 44). The ceramics are Ogechie ware. No features were identified.

Artifacts were recovered between 0 and 50 cmbs, with a significant decrease below 30 cmbs. The zone with the greatest artifact density occurs between 10 and 30 cmbs and contained 79 percent of the artifacts by count and 78 percent by weight. All of the artifact types in this zone, except FCR, are most abundant from 10 to 20 cmbs and decrease abruptly below 20 cmbs. In contrast to the other artifact types, there are moderate amounts of FCR from both the 10 to 20 cmbs and 20 to 30 cmbs levels. The upper portion (10 to 20 cmbs) of this zone is a Terminal Woodland occupation based on the Ogechie ceramics, and this component extends slightly into the 20 to 30 cmbs level, based on a small amount of ceramics. The lower portion (20 to 30 cmbs) of this zone, which contains a moderate amount of FCR, but few other artifacts, is likely an Archaic component, as there is no clear evidence to indicate that the moderate amounts of deeper FCR are associated with the Terminal Woodland component. For example, no soils stains or features from a pit or depression were identified. The small amount of artifacts above and below the 10 to 30 cmbs zone was likely displaced by natural processes.

Artifact Types

Although the sample size is very sparse, a review of diagnostic flake types shows that bipolar flakes occur from 0 to 20 cmbs, while decortication and nonbifacial lakes have a broader range from 0 to 40 cmbs (Table 45). The bipolar flakes are likely associated with the Terminal Woodland component. Bifacial flakes are notably absent in these units. The sample size is too small to provide data on whether other components, besides the Terminal Woodland, are represented by lithic debris.

Table 45. Site 21CA772 Diagnostic Lithic Debris by Depth in XUs 16, 17, 18W, 18N, and 22.

Depth cmbs	Bipolar Flakes	Bifacial Shaping Flakes	Bifacial Thinning Flakes	Decortication Flakes	Nonbifacial Flakes
0-10	1	0	0	1	2
10-20	5	0	0	1	0
20-30	0	0	0	1	0
30-40	0	0	0	1	1
40-50	0	0	0	0	0

Quartz is the primary lithic material that occurs mostly from 10 to 20 cmbs, with smaller amounts of other locally-available materials (Table 46). The 0 to 20 cmbs depth for most of these materials suggests that they are probably Terminal Woodland. The sample size is too small to provide data on whether other components, besides the Terminal Woodland, are represented.

Table 46. Site 21CA772 Raw Materials by Depth in XUs 16, 17, 18W, 18N, and 22.

Depth cmbs	Basaltic	Chalcedony	Unidentified Material	Lake Superior Agate	Quartzite	Quartz	Rhyolite
0-10	0	2	1	0	0	1	0
10-20	1	2	2	2	1	7	1
20-30	0	1	0	0	0	2	0
30-40	0	0	0	0	0	3	0
40-50	0	0	0	0	0	0	0

Soils and Stratigraphy

The soil horizons from the XUs are depicted in a wall profile and a photograph in Figures 43 and 44. The soil profile consists of a sandy loam A horizon, overlying loamy sand B horizons and a sand C horizon. The soils appear to be fairly undisturbed, as modern impacts were limited to 0 to 10 cmbs and rodent burrows were minimal. However, there was a moderate amount of tree roots in most levels.

11.13 Artifact Summary

A total of 3,758 artifacts, weighing 112,916.2 grams, were recovered from the site during the Phase I and Phase II investigations (Table 47). FCR was by far the most abundant artifact type by count and weight, followed by lithics, faunal material, and ceramics.

Table 47. Site 21CA772 Summary of Artifacts.

Artifact Type	**Total by Count (Weight g)**	**% by Count (Weight g)**
FCR	**1900 (91,648.4)**	**51 (81)**
Lithic	**759 (20,290.7)**	**20 (18)**
Faunal	**717 (304.6)**	**19 (<1)**
Ceramic	**382 (672.5)**	**10 (1)**
Total	**3758 (112,916.2)**	**-**
%	**-**	**100**

11.14 Lithic Analysis

The lithic assemblage consists of 759 artifacts, including 659 pieces of lithic debris, 29 cores, and 71 stone tools (Table 48). A variety of flake types, cores, and lithic materials are present in the assemblage, which is discussed below.

Table 48. Site 21CA772 Lithic Artifacts by Material, Flake, and Tool/Core Types.

Material	Nonbifacial Flake	Decortication	Bifacial Shaping	Bifacial Thinning	Bipolar Flake	Other Grade 4	Shatter	Broken Flake	Edge Preparation	Tool/Core	Total	%
Quartz	28	6	-	4	54	34	25	71	-	2 bipolar cores 3 freehand nonbifacial cores 2 tested cobble cores 1 utilized flake 1 retouched flake	**231**	**30**
Swan River Chert	15	4	6	4	7	8	5	28	1	2 bipolar cores 1 Stage 4 biface 3 projectile points 2 retouched flakes 1 utilized flake 1 end scraper	**88**	**12**
Tongue River Silica	14	-	1	7	9	7	2	24	1	4 bipolar cores 4 freehand nonbifacial cores 1 projectile point 4 utilized flakes 1 retouched flake	**79**	**10**
Quartzite	8	6	2	-	2	3	1	16	-	16 netsinkers 1 anvilstone tool	**55**	**7**
Basaltic	9	2	-	-	4	-	2	24	-	4 freehand nonbifacial cores 1 tested cobble core 5 netsinkers 1 anvilstone & chopper tool 2 utilized flakes 1 denticulate	**55**	**7**
Prairie du Chien Chert	-	-	34	5	-	9	-	3	-	-	**51**	**7**
Knife Lake Siltstone	6	3	1	5	1	1	-	9	2	1 freehand nonbifacial core 1 Stage 4 biface 1 Stage 3 biface 4 utilized flake tools 1 projectile point	**36**	**5**
Unidentified material	7	11	-	2	5	5	2	11	-	1 freehand nonbifacial core 3 netsinkers 1 anvilstone tool	**48**	**6**
Lake Superior Agate	4	4	-	-	14	4	-	2	-	1 bipolar core 1 tested cobble core 1 utilized flake	**31**	**4**
Chalcedony	6	7	-	-	1	-	1	5	-	2 freehand nonbifacial cores	**22**	**3**
Rhyolite	1	1	-	1	1	-	1	5	-	1 bipolar core 3 netsinkers	**14**	**2**
Unidentified Chert	1	4	1	3	1	3	-	1	-	-	**14**	**2**

Table 48. Continued.

Material	Nonbifacial Flake	Decortication	Bifacial Shaping	Bifacial Thinning	Bipolar Flake	Other Grade 4	Shatter	Broken Flake	Edge Preparation	Tool/Core	Total	%
Knife River Flint	-	-	3	1	-	-	-	1	-	1 side and end scraper 1 utilized flake	**7**	**1**
Gunflint Silica	1	3	-	-	3	-	1	2	-	-	**10**	**1**
Granitic	-	-	-	-	1	-	-	-	-	5 netsinkers	**6**	**1**
Metamorphic	-	-	-	-	-	-	-	-	-	4 netsinkers	**4**	**1**
Red River Chert	-	1	-	-	-	-	-	-	-	-	**1**	**<1**
Jasper Taconite	1	-	-	-	-	-	-	1	-	-	**2**	**<1**
Animikie Silica	-	-	-	-	-	-	-	1	-	1 end scraper	**2**	**<1**
Jasper	-	1	-	-	-	-	-	-	-	-	**1**	**<1**
Siltstone	-	-	-	-	-	-	-	-	-	1 netsinker	**1**	**<1**
Silicified Wood	-	-	-	-	-	-	-	-	-	1 end scraper	**1**	**<1**
Total	**101**	**53**	**48**	**32**	**103**	**74**	**40**	**204**	**4**	**100**	**759**	**-**
%	**13**	**7**	**6**	**4**	**14**	**10**	**5**	**27**	**1**	**13**	**-**	**100**

Size grade counts for the lithic debris were as follows: SG1≥ 1.0 inch (n=9; 1%); SG2 <1.0 inch to ≥0.5 inch (n=118; 18%); SG3 <0.5 inch to ≥0.233 inch (n=418; 63%); and SG4 < 0.233 inch (n=114; 17%). Lithics that showed evidence of excessive heating, as indicated by crazing and potlid fractures include two pieces of Lake Superior Agate, one piece of Knife Lake Siltsone, and one unidentified material. A total of 186 lithic artifacts were heat treated, and most of these were Tongue River Silica, Swan River Chert, and Prairie du Chien Chert. The amount of cortex on lithic debris is as follows: 0% cortex (n=449; 68%); >0 to <50% (n=76; 12%); 50 to <100% (n=50; 8%); and 100% (n=84; 13%).

Flake Types

The wide variety of flake types in the assemblage indicates a range of lithic-reduction technologies and stages. Diagnostic flake types, along with their associated technologies and stages of reduction, are summarized in Table 49. Nonbifacial, bifacial, and bipolar technologies are well represented. The assemblage includes lithics from the early, middle, and late stages of reduction. Additional supporting evidence for the various technologies includes: 1) ten bipolar cores are indicative of bipolar technology; 2) 15 nonbifacial cores and 25 tools made on flakes (scrapers, utilized flakes, and projectile points) are indicative of nonbifacial technology; and 3) 6 bifacial tools (projectile points and bifaces) are made on are indicative of bifacial technology.

Types of lithic debris that are not indicative of specific technologies or reduction-stages comprise the largest portion of the assemblage and include broken and other SG4 flakes. These nondiagnostic flake types are not included in Table 49.

Table 49. Site 21CA772 Summary of Diagnostic Flake Types, Technologies, and Reduction Stages.

Count & Flake Type	Technology	Stage of Reduction
103 - Bipolar flakes	Bipolar	N/A
53 - Decortication flakes	Nonbifacial	Earliest stage of core reduction
101- Nonbifacial flakes	Nonbifacial	Cobble testing, reducing unprepared nonbifacial cores for flake blank production, and the early stages of nonbifacial tool reduction (early to middle-stages of reduction)
32 - Bifacial thinning flake	Bifacial	Early to middle-stage of reduction
48 - Bifacial shaping flake	Bifacial	Late-stage of reduction (final shaping or tool maintenance)
40 - Shatter	N/A	Mostly from cobble testing, core reduction, and earlier stages of reduction

Lithic Material Types and Use

Lithic materials consisted primarily of quartz (30%) with significantly small amounts with a wide range of other materials, including Swan River Chert (12%), Tongue River Silica (10%), quartzite (7%), basaltic (7%), Prairie du Chien Chert (7%), and other materials that occur as five percent or less. Nearly all of the materials are locally available. The unidentified chert and unidentified materials may be local or exotic. There are four decortication flakes of unidentified chert and eleven decortication flakes of unidentified materials, suggesting that at least some of these materials were local acquired. The only materials that are conclusively non-local are Prairie du Chien Chert (oolitic) from south-central or southeastern Minnesota and Knife River Flint from western North Dakota.

Although the lithic data is sparse, there are some patterns of differential material use that are indicated by the raw material debris profiles. The quality of the raw material, cobble size, and material abundance are likely the primary factors in the use patterns. The most notable lithic use characteristics are discussed below for those materials that have adequate sample sizes of diagnostic flakes. However, most materials lack an adequate sample size.

Quartz occurs in moderate or large amounts in most flake types, but is notably absent or sparse in bifacial flake types. The use of quartz was likely limited by its flaking qualities. Swan River Chert and Tongue River Silica occur in a wide variety of flake types, and are notably well represented in nonbifacial and bifacial flake types, suggesting a versatile use of these materials. Quartzite and basalt occur mostly as broken and nonbifacial flakes and small amounts of other types, but these materials are absent or present only in very small amounts in bifacial flake types. Prairie du Chien Chert (oolitic) occurs mostly as bifacial thinning flakes, and this material was probably transported to the site, likely as blanks or bifaces. Knife River Flint occurs as bifacial shaping and thinning flakes, and this material was likely brought to the site in the form of finished tools or blanks. Lake Superior Agate most commonly occurs as bipolar flakes, probably because bipolar technology is suited to the small cobbles in which this material typically occurs. Chalcedony occurs mostly as nonbifacial and decortication flakes.

Stone Tools
A total of 71 stone tools were recovered (Table 50), including 37 netsinkers, 14 utilized flakes, five projectile points, four retouched flakes, two broken unfinished stage 4 bifaces, and one broken unfinished stage 3 biface, three end scrapers, one side and end scraper, two anvilstones, one anvilstone/chopper, and a large denticulate.

The tools were manufactured from a wide variety of lithic materials. Netsinkers were made from coarse to moderate-grained materials, primarily quartzite with much lesser amounts of basalt, granite, rhyolite, metamorphic, unidentified material, and siltstone. Projectile points were made from Swan River Chert (n=3), Knife Lake Siltstone (n=1), and Tongue River Silica (n=1). Utilized and retouched flakes were typically made from fine-grained materials, primarily Knife Lake Siltstone, Tongue River Silica, and Swan River Chert with small amounts of other materials. The anvilstones, chopper, and large denticulate were made from moderate-grained materials including quartzite and basalt.

The broken, late-stage bifaces may have been used as cutting tools, but they were likely broken in manufacture. Utilized and retouched flakes are primarily light-duty cutting and slicing tools used on animal remains, wood, and plants. Scrapers are typically associated with scraping tasks on a variety of soft materials (meat, hides, and plant material) or moderately resistant materials (wood and bone). Anvilstones were used for bipolar reduction or food processing. The netsinkers were used for fishing. Projectile points are hunting weapons. These tools suggest that the following activities occurred: hunting, fishing, animal butchering, animal/plant processing, hide working, and bone and woodworking.

Table 50. Site 21CA772 Tool Type by Material Type.

Materials	**Netsinkers**	**Utilized Flake**	**Projectile Point**	**Retouched Flake**	**Scraper**	**Unfinished Biface, Stage 4**	**Unfinished Biface, Stage 3**	**Anvil Stone**	**Anvil Stone/ Chopper**	**Denticulate**	**Total**
Quartzite	16							1			**17**
Basaltic	5	2							1	1	**9**
Swan River Chert		1	3	2	1	1					**8**
Knife Lake Siltstone		4	1			1	1				**7**
Tongue River Silica		4	1	1							**6**
Granitic	5										**5**
Metamorphic	4										**4**
Unid. material	3							1			**4**
Rhyolite	3										**3**
Quartz		1		1							**2**
Knife River Flint		1			1						**2**
Lake Superior Agate		1									**1**
Siltstone	1										**1**
Silicified Wood					1						**1**
Animikie Silica					1						**1**
Total	**37**	**14**	**5**	**4**	**4**	**2**	**1**	**2**	**1**	**1**	**71**

Middle to Late Archaic - Table Rock Projectile Point

A Table Rock Stemmed projectile point made of heat-treated Swan River Chert was recovered in XU 13 from 10 to 20 cmbs (Figure 45; Catalog # 2016.75.78.93). The point is manufactured from a biface and has well-executed pressure flaking covering almost all of the percussion flakes. The pressure flakes extend to near the midline in some places. The blade form is triangular, and appears to have been resharpened. The base is slightly concave and has been thinned on both sides. The base and stem are very slightly ground. The basal ears are narrower than the blade. In cross-section, the point is symmetrical with a lenticular shape. The point is 42.7 mm long, the maximum width at the shoulder above the stem is 25.1 mm, the stem width (narrowest width) is 15.6 mm, the width of the base is 18.9 mm, and the thickness is 6.7 mm.

The Table Rock Stemmed point is typically assigned to the Late Archaic (Alex 2000; Benn and Thompson 2009; Justice 1987; Morrow et al. 2016), with an estimated age of 3,000 B.C. to 1,000 B.C. (Justice 1987). However, evidence from west-central Illinois indicates that Table Rock points may date much earlier, perhaps as early as about cal. 7,700 BP (Nolan and Fishel 2009). These points have symmetrical blades, rounded shoulders, and expanding stems that have been ground. Manufacturing methods included refined percussion and pressure flaking. Table Rock points and their regional variant, the Bottleneck Stemmed type, are primarily documented from the mid-continent states bordering the Mississippi and Ohio Rivers. However, they are present across a wider area of the Midwest and into Minnesota (Morrow et al. 2016).

Terminal Woodland - Small Side-Notched Projectile Point

A small, side-notched Terminal Woodland point made of Knife Lake Siltstone was recovered from Shovel Test 875E from 0 to 20 cmbs (Figure 45; Catalog # 2016.74.13.1). The point is made on a flake and has fine, pressure-flaking on both faces along the base and blade margins. The blade form is triangular, and the base is straight and slightly ground. In cross-section, the point is thin and asymmetrical, having a lenticular shape on one side and flat shape on the other. The side notches are very narrow and shallow. The point is 16.5 mm long, the shoulder width above the notches is 11.5 mm, the basal ear width is 11.3 mm, the width between the notches is 10.1 mm, and the thickness is 3.6 mm. Although the specific type of this point is uncertain, it is similar to the small, side-notched points of the Terminal Woodland and Late Prehistoric periods, based on morphological and technological attributes (Kehoe 1973; Morrow 1984; Morrow et al. 2016). This type is common throughout the Midwest.

Terminal Woodland - Nodena Projectile Point

A small, unnotched point (Figure 46; Catalog # 2016.75.109.29) made of heat treated Tongue River Silica and recovered in XU 19 from 20 to 30 cmbs is similar to the Nodena cluster (Justice 1987; Morrow 1984), which is a Terminal Woodland type. The point could also be a preform for a notched point, as the blade edges are not well defined, but in neither case its small size suggests that it is Terminal Woodland. The point is manufactured from a small biface or a flake and has well-executed pressure flaking covering both faces, with the flaking extending to the mid line. The blade form is convex on one edge and parallel on the other. The base is unground and has been thinned on both sides. The corners of the base are rounded. In cross-section, the point is symmetrical with a lenticular shape. The point is 32.9 mm long, the maximum width is 18.2 mm, and the thickness is 6.9 mm.

The Nodena cluster projectile points date from about A.D. 1400 to at least A.D. 1700 and are diagnostic of the late Mississippian and proto-Historic periods. They are distributed across a wide area of the central United States, extending from southern Wisconsin and southern Minnesota to Alabama and Arkansas. They are generally elliptical in shape, ranging in form from bi-pointed to teardrop shaped. According to Justice (1987:230), Nodena are “excurvate-bladed (i.e., willow- leaf shaped), elliptical forms. Maximum width of the blade varies from a placement at the middle of the blade to between the midpoint and the proximal end or base. The latter appears to be most typical, while a few specimens of the type may exhibit maximum width between the midpoint and tip. Overall shape characteristics vary from elliptical bi-pointed forms to specimens exhibiting a narrow tear-drop shape with a rounded base. Refined pressure flaking is the characteristic method of finishing and resharpening, while combinations of percussion and pressure flaking were used in manufacture."

Terminal Woodland - Small Side-Notched Projectile Point
A broken base from a small, side-notched Terminal Woodland point made of Swan River Chert was recovered in XU 19 from 30 to 40 cmbs (Figure 46; Catalog # 2016.75.110.60). The point is made on a flake and has pressure-flaking on both faces along the base and blade margins, although some areas have flaking on only one face. The blade portion is absent. The base is slightly concave and ground. In cross-section, the point is thin and asymmetrical, having a lenticular shape on one side and flat shape on the other. The flat side has a large spalled or flaked surface. The side notches are broad. The point is 13.1 mm long, the shoulder width above the notches is 15.3 mm, the basal ear width is 15.7 mm, the width between the notches is 12.3 mm, and the thickness is 4.0 mm. Although the specific type of this point is uncertain, it is similar to the small, side-notched points of the Terminal Woodland and Late Prehistoric periods, based on morphological and technological attributes (Kehoe 1973; Morrow 1984; Morrow et al. 2016). This type is common throughout the Midwest.

Indeterminate - Projectile Point
A broken projectile point blade made of heat treated Swan River Chert was recovered in XU 15 from 50 to 60 cmbs (Figure 46; Catalog # 2016.75.93.21). The point is made on a biface and has pressure-flaking on both faces along the blade margins. A few larger percussion flakes are visible and not covered by pressure flakes. The base is absent, although it appears that one face was flaked and thinned after it was broken. In cross-section, the point is moderately thick, having a lenticular shape on one side and convex shape on the other side. The point is 26.2 mm long, the width is 18.8 mm, and the thickness is 7.0 mm. It is not possible to type this point because of its broken and fragmentary condition.

Biface
A broken late-stage biface (classified as stage 4 biface) of Knife Lake Siltstone was recovered in XU 15 from 40 to 50 cmbs (Figure 45; Catalog # 2016.75.92.20). The biface contains broad percussion flaking that is covered by well-executed pressure-flaking that extends to or near the midline. In cross-section, the biface is very thin, with a symmetrical lenticular shape. The biface appears to have been broken in manufacture. The biface is 43.1 mm long, the maximum width is 21.4 mm, and the thickness is 4.7 mm.

Netsinkers from 21CA772

A total of 37 netsinkers were recovered from an area about one meter in diameter at the location of XUs 3, 6, and 9 and Shovel Test 88ES5 (Figures 28 to 32). The depth of most of the netsinkers was between 19 and 30 cmbs. The netsinkers do not appear to have been cached in pit, based on their diffuse horizontal distribution (one meter wide) and lack of soil discoloration, which would indicate a pit feature. They were likely left on the ground surface and were naturally displaced downward through the soil profile over time. A summary table on the netsinkers including a description, measurements, and raw material was presented with the XUs 3, 6, and 9 discussion in Table 30.

The netsinkers were typically manufactured by percussion flaking to remove a shallow notch on opposing ends of the stone, presumably these notches were used to secure the rope that tied the netsinker to the net. Typically, one or two flake removals was sufficient to create a shallow notch. The flake removals are quite subtle, typically leaving a short and shallow notch or indentation. In some cases there was a natural indentation in the stone that was utilized as a notch. The notches are generally located on opposite sides of the narrow (short) axis of the netsinker. This type of sinker is termed “side-notched”. A small percentage of netsinkers also have flaking modifications on the long ends of the netsinker, which was presumably done to shape the stone.

The netsinkers from 21CA772 were made from coarse to moderate-grained materials, primarily quartzite with much lesser amounts of basalt, granite, rhyolite, metamorphic, unidentified material, and siltstone. These well-rounded, smooth stones were locally deposited in glacial outwash and were likely collected from nearby lake shores. The typical netsinker stone is oval shaped (longer along one axis), the size of an adult hand, and nearly always much thinner than it is wide or long.

The raw materials, manufacturing method, and morphology of the netsinkers conforms to that described by in a recent article by Prowse (2008), who examined netsinker manufacture and use patterns during the Woodland period in southern Ontario, Canada, including a wider review of netsinkers in the pre-contact period of Upper Great Lakes region. The following discussion is derived primarily from her work and from Cleland (1982).

Netsinkers - Regional Review

Netsinkers have been recovered from archaeological sites throughout North America, with sites in the Upper Great Lakes region dating from the Archaic (e.g. the Lamoka Lake in eastern New York State, at c. 5500 BP) through the historical periods. Prowse (2008:69) points out that despite their relative frequency, netsinkers have attracted little analytical interest and have often been misidentified as mauls, clubs, bone-breakers, weft-weights for weaving, or rakes. Prior to the recovery of a carbonized fishing net still attached to netsinkers at the Early Woodland Morrow site (in New York State), the main evidence for netsinkers was from ethnographic accounts. Perhaps due to the lack of research on netsinkers, it has often been assumed that these artifacts were essentially expedient in nature, requiring little skill or design effort. Prowse disputes this assumption and provides evidence that netsinkers were thoughtfully selected and crafted to accomplish different fishing tasks in a variety of aquatic settings. She also points out (2008:73) that

> Given the amount of energy required for net manufacture, fishing nets along with the attached netsinkers were likely not discarded without thought concerning whether they could be reused in the future. If return to a site or its general area was anticipated, semi-nomadic peoples would likely not carry the nets to the next site, especially if fishing was not scheduled, but rather would cache the nets with the netsinkers still attached which was likely what happened at the Morrow site. But if return to the site was not planned, the netsinkers would likely have been removed from the net and discarded making it easier to transport the net as the people followed their seasonal round. The net would then have to be refitted with ‘new’ netsinkers the next time it was used.

Two basic types of aboriginal fishing nets made use of stone netsinkers; the gill net and the seine net. Gill nets are used in open water and are suspended in the water column through the use of netweights, larger sinker stones, wooden floats, and wooden buoys. The gill net is “anchored” to the bottom with the heavier sinker stones, while the smaller netweights and floats keep the net extended, but not necessarily in contact with the bottom. These nets were typically left in the path of migrating fish for a period of time and were used in open water where there is little vegetation to cause entanglement.

Ethnographic accounts document gill nets being set to depths of more than 50 meters in the Great Lakes.

Seine nets work like a barrier to corral fish in shallower waters and streams and then move the mass of fish and the net in one operation to the shore. Prowse (2008:71) points out that these nets can take many forms and configurations, but all seem to share the basic characteristics of using many netsinker stones to seal the base of the net to the lake or stream bottom, while a number of wooden floats keep the top of the net at the surface. Seine nets typically employ a finer mesh than gill nets and are used to catch smaller fish. The author (2008:72) cites an ethnographic account from the late nineteenth century of a Red Lake Ojibwa woman who used four different seine nets with varying mesh sizes and with correspondingly larger or smaller netsinkers to accommodate different water and wind conditions. The description of these nets suggests that a combination of larger stones on the corners and smaller stones along the margins was used, and that the heavier stones were attached just at the time of use while the smaller stones were attached permanently to the net at the time of manufacture.

Five general types of netsinkers are described, based on general shape and notching patterns. These are:

- *Side-notched* sinkers are oval or roughly-oval in shape with notches on opposite sides of the short axis of the rock. These are the most common types recovered at most sites. This type of attachment would be the least likely to become entangled in lake- or stream-bottom vegetation, as the cordage does not protrude beneath the stone.
- *End-notched* sinkers are oval to oblong stones with notches on the opposing ends of the long axis of the rock. These are the second most commonly-recovered type.
- *Both-notched* sinkers tend to be oblong stones with notches on both the sides and ends. These type are not common, and it is suggested that they may have been originally of either the side- or end-notched type and were subsequently modified, or they may represent a type that was attached with an extra level of security.
- *Atypical-notched* sinkers appear to have been a more expedient type, where a stone with a naturally-occurring notch was used with little or no modification.
- *Unknown* sinkers include examples that lack a clear notching pattern due to wear or breakage.

A wide variety of raw materials have been identified in netsinker assemblages; including calcareous, sandstone, siltstone, metamorphic, and igneous rocks. There appears to have been a preference for calcareous and siltstone raw materials and in general for water-worn stones (Prowse 2008:81). The author also suggests that netweights were selected carefully to provide the optimum balance between effectively sinking the net, while not making the entire apparatus too heavy to maneuver when full of fish, or to sink too deeply into the lake or river bottom.

Manufacturing and fishing with either type of net required a significant amount of labor and coordinated social effort, and Prowse cites Cleland (1982) as the primary source for research into the cultural importance of the precontact period inland fishery of the Upper Great Lakes region. Cleland suggest that the demands and rewards of fishing were instrumental in the cultural evolution of native peoples, and should perhaps even be viewed as "…the most important single factor (1982:761)" in that cultural evolution. Prowse (2008:92) states that:

> Although this model has been criticized for being applied too broadly, not taking into account fish availability … and lacking clear cut archaeological evidence … it provides a baseline for comparison between sites and time periods…. In particular, Cleland (1982:774) proposed that it was the larger temporary working groups' requirements for the seine net fishery that can be credited for leading to significant changes in the Middle Woodland settlement system involving larger and more numerous lakeshore habitation sites.

Cleland's model also suggests that there would have been a shift in preference for gill nets over seine nets as population densities increased in the Late Woodland period, based on the theory that a greater volume of fish (and fatter, higher-energy fish) would be available in deeper waters where gill nets were used during the late-season migrations (1982:768). The fish caught in the fall would be more easily preserved for the winter and therefore would provide sustenance for a larger population. The relatively short duration of the fall migration would require a highly-coordinated large group effort, which Cleland (1982:774) argues was an instrumental factor in the cultural evolution of the Middle to Late Woodland periods. Prowse did not find evidence for this proposed shift from seine to gill nets at the sites she analyzed (2008:93), but she concludes that "Research on netsinkers is just beginning" and that there is a great need for additional data with which to fill in the picture of precontact period fishing and evaluate roles of fishing in cultural evolution.

<u>Cores</u>
A total of 29 cores were recovered, including fifteen freehand nonbifacial cores, ten bipolar cores, and four tested cobbles (Table 51). All but two of the fifteen freehand nonbifacial cores have unpatterned multidirectional flaking, and all of these cores have unprepared platforms, except one core. Seven of the bipolar cores are rotated and have crushing on two sets of opposing ends, which suggests an intensive use of these cores to fully exhaust their flake potential. Cores occur on a variety of raw materials, with Tongue River Silica and quartz being the most common materials for all core types. Basalt, chalcedony, Knife Lake Siltstone, and unidentified material occur as freehand cores but not bipolar cores.

Table 51. Site 21CA772 Core Types and Raw Material.

Core Type	Tongue River Silica	Quartz	Basaltic	Lake Superior Agate	Swan River Chert	Chalcedony	Knife Lake Siltstone	Unid. material	Rhyolite	**Total**
Freehand nonbifacial, patterned	1	-	1	-	-	-	-	-	-	**2**
Freehand nonbifacial, unpatterned (multi-directional	3	3	3	-	-	2	1*	1	-	**13**
Bipolar (not rotated)	1	1	-	-	-	-	-	-	1	**3**
Bipolar (rotated)	3	1	-	1	2	-	-	-	-	**7**
Tested cobble	-	2	1	1		-	-	-	-	**4**
Total	**8**	**7**	**5**	**2**	**2**	**2**	**1**	**1**	**1**	**29**

* prepared platforms

11.15 FCR

A total of 1,900 pieces of FCR recovered at the site. FCR was found across the site area and from nearly every test (Table 52). The FCR are mostly small-sized pieces, with 94 percent being SG1 or smaller. The angular FCR type (55%) was the most numerous, followed by spalls (19%) and angular/spalls (8%). There were only three whole or mostly whole cobbles. Most of the FCR is granitic (53%), with much smaller amounts of quartzite (19%), basalt (14%), and a variety of other materials.

Table 52. Site CA772 FCR Count by Material, Size, and Type.

Material	Size Grade (SG)						FCR Type										Total	%
	00	0	1	2	3	4	Angular	Friable Rounded	Split Cobble	Cobble (friable)	Cobble (nonfriable	Angular/Spall	Cobble with Spall	Cobble with Angular	Crumb	Spall		
Granitic	3	71	260	359	186	123	533	72	2	19	22	81	24	16	147	86	**1002**	**53**
Quartzite	1	19	113	165	57	-	232	1	3	-	10	19	5	4	2	79	**355**	**19**
Metamorphic	-	1	17	46	13	-	52	-	-	-	-	7	1	-	-	17	**77**	**4**
Unid. Material	-	10	56	88	35	5	94	-	2	-	1	23	3	1	6	64	**194**	**10**
Basaltic	1	5	81	139	33	2	117	-	-	3	-	21	4	3	1	112	**261**	**14**
Igneous	-	1	2	5	2	1	10	-	-	-	1	-	-	-	-	-	**11**	**1**
Total	**5**	**107**	**529**	**802**	**326**	**131**	**1038**	**73**	**7**	**19**	**37**	**151**	**37**	**24**	**156**	**358**	**1900**	**-**
%	**<1**	**6**	**28**	**42**	**17**	**7**	**55**	**4**	**<1**	**1**	**2**	**8**	**2**	**1**	**8**	**19**	**-**	**100**

11.16 Ceramic Analysis

A total of 382 ceramics were recovered from two areas at the site, which are 35 meters apart. All of the ceramics from both areas are Ogechie ware based on their attributes and close vertical and horizontal association. One cluster of ceramics (n=301) is located at XU block 1, 2, 7S, 7N 8, 10, 11, and 12 and includes 276 body sherds, 17 rim sherds, and eight neck sherds. These sherds all have a fine grit temper. The surface treatment is smooth on 231 sherds and cordmarked on 70 sherds. Trailed line decoration is present on 19 body sherds and one rim. Examples of sherds with trailed line decoration are shown in Figures 47 and 48. Measurements on a sample of trailed lines sherds from XUs 1 and 2 had a width that varied from 3.5 to 6.0 mm. There were 212 sherds with intact interior and exterior surfaces that were measured for thickness. The minimum sherd thickness was 2.1 mm, and the maximum was 5.6 mm, with an average thickness of 3.9 mm.

The other cluster of ceramics (n=81) is located at XU block 16, 17, 18W, 18N, and 22 and includes 77 body sherds, one neck sherd, two rim sherds, and one neck/rim sherd. Trailed line decoration is present on four body sherds and one neck sherd. These sherds all have a fine grit temper. The surface treatment is cordmarked on 54 sherds, 23 have a smooth surface, and four have an undetermined surface. The trailed lines on sherds from XU 18 had a width that varied from 4.5 to 6.0 mm. Three rim sherds have faint, narrow (c. 1.0 mm wide) vertical incised lines. There were 74 sherds with intact interior and exterior surfaces that were measured for thickness. The minimum sherd thickness was 4.4 mm, and the maximum was 7.9 mm, with an average thickness of 6.1 mm.

Arzigian (2008) summarized the current research of Ogechie ceramics, which is the basis for the following discussion. Ogechie ceramics were defined from the type site Petaga Point (21ML11) (Elden Johnson, personal communication, as cited in Bleed 1969; Ready and Anfinson 1979b). Ogechie ware is part of the Psinomani complex (A.D. 1100–1750), which extends across central and northern Minnesota. Ogechie ware is described as a Mississippian-Woodland blend with similarities to both Oneota pottery and Sandy Lake (Ready and Anfinson 1979b) or as a locally made variant of Oneota ceramics (Birk and Johnson 1992:209). The temper is usually shell, though fine granite also is reported. Vessels are globular with flattened lips, straight or everted rims, constricted necks, round shoulders, and a round bottom. Paired loop handles are occasionally found, and lip notching is common. Ready and Anfinson (1979b) describe two decorative styles: Allamakee Trailed, which has broad trailed lines on the shoulder in vertical or oblique slashes or chevrons, often with linear punctates; and Ogechie Plain, which has no decoration except for occasional lip notching. "Sandyota" is a term applied to ceramics that show a crossover between Sandy Lake and Oneota. However, this "type" is not well defined and is probably underreported, with assemblages being identified as Oneota rather than the local variant, Ogechie. LeVasseur and Yourd (2006:83) describe a Sandyota sherd of Sandy Lake form with an Oneota trailed decorative motif from the Sucker Lakes site (21CA50) in the Chippewa National Forest of Cass County. Anfinson (personal communication, 2008 in Arzigian 2008:132) lists additional sites with Sandyota sherds from Cass County: Steamboat Lake (21CA27) and the Thunder Lake Burial (21CA506).

Ogechie Rim Sherds

In XU 1 from 0 to 10 cmbs, there were two undecorated rim fragments with a smooth surface and fine grit temper (Figure 49; Catalog # 2016.75.11.55 and 2016.75.11.60). The lips are flat, and on the larger rim the lip is thickened on the exterior side, having a slightly pinched appearance. The larger rim has a straight profile, and they are too small to determine rim angle. Thickness of the larger rim is 5.2 mm at lip, 4.4 mm immediately below lip, and 5.5 mm two cm below lip. The thickness of the smaller rim is 3.3 mm at lip and 3.1 mm immediately below lip.

In XU 1 from 10 to 20 cmbs, there were two small, undecorated rim fragments with fine grit temper. One rim has a smooth surface, and the other is exfoliated. The lips are slightly rounded. The lip on the non-exfoliated rim is thickened slightly on the exterior side. They are too small to determine rim angle or profile. Thickness of the nonexfoliated rim is 3.9 mm at lip and 3.5 mm one cm below lip. This rim refits with the rim from XU 1 from 20 to 30 cmbs.

In XU 1 from 10 to 20 cmbs, there were six small, refit fragments from an undecorated rim with a smooth surface and fine grit temper. The lip is slightly rounded and thickened on the exterior side. The rim profile is straight. The rim retains a small fragment of the neck, which shows that the rim/body angle is very pronounced, but there is not enough of rim to determine rim/body angle. Thickness of the rim is 4.7 mm at lip and 5.7 mm two cm below the lip.

In XU 1 from 20 to 30 cmbs, there were two small, undecorated rim fragments with a smooth surface and fine grit temper. The lips are slightly rounded and thickened slightly on the exterior side. They are too small to determine rim angle or profile. The thickness of one rim is 4.5 mm at lip, 3.5 mm immediately below lip, and 4.5 mm one cm below lip. The thickness of the other rim is 4.5 mm at lip with unknown thickness below lip as it is broken. This rim refits with the rim in XU 1 from 10 to 20 cmbs.

In XU 2 from 10 to 20 cmbs, there were six small, refit fragments from an undecorated rim with a smooth surface and fine grit temper. Most of the exterior surface of the sherds is absent. The lip is slightly rounded. It is too small to determine rim angle or profile.

In XU 2 from 10 to 20 cmbs, there were three rim sherds. Rim 1 is a smooth undecorated rim with a slightly rounded lip and interior absent. Rim 2 is a smooth undecorated rim that has a flat lip that is very slightly thickened on the interior. The thickness of Rim 2 is 4.1 mm at lip and 4.0 mm one cm below lip. Rim 3 is a smooth decorated rim with a trailed line or tool impression extending below the lip, which is slightly rounded (Figure 48; Catalog # 2016.75.18.87). The thickness of Rim 3 is 6.2 mm at lip and is lacking the surface below the lip. The rims are too small to determine rim angle or profile.

In XU 2 from 20 to 30 cmbs, there is a small, smooth undecorated rim with fine grit temper. The lip is flat, and most of the exterior surface of the sherd is absent. It is too small to determine rim angle or profile. The thickness of the rim is 3.3 mm at lip.

In XU 16 from 20 to 30 cmbs, there is a decorated rim that has a smooth surface and fine to medium grit temper, with a slightly sandy texture. Decoration on the top of the lip consists of an oval tool impression. There are also faint, very narrow vertical incised lines about 2.5 cm below the lip. The lip is flat and has a pinched appearance, extending over the exterior wall and to a lesser extent the interior wall also. The lip has a "T" shape in profile. However, the actual technique that produced the lip is probably not pinching, but a flattening technique. The rim is straight in profile and has almost no curvature. The thickness is 7.0 mm at lip, 5.5 mm immediately below lip, and 6.4 mm two cm below lip. This rim refits with the rim in XU 17 from 10 to 20 cmbs.

In XU 17 from 10 to 20 cmbs, there is a decorated rim that has a smooth surface and fine to medium grit temper, with a slightly sandy texture (Figure 50; Catalog # 2016.75.100.16). The rim consists of nine fragments that refit. Decoration on the top of the lip consists of consecutive oval tool impressions, each approximately 4 mm apart. Each oval impression is about 7.0 by 5.5 mm in diameter. There are also faint, very narrow vertical incised lines that are about one cm long, each located about 2.5 cm below the lip. A trailed line, approximately 3.5 mm wide, extends horizontally along the rim/neck juncture. The lip is flat and has a pinched appearance, extending over the exterior wall and to a lesser extent the interior wall also. The lip has a "T" shape in profile. However, the actual technique that produced the lip is probably not pinching, but a flattening technique. The rim is flat in profile and has almost no curvature. Thickness is 7.0 mm at lip, 5.5 mm immediately below lip, and 6.4 mm two cm below lip. The rim retains a small fragment of the neck, which shows that the rim/body angle is very pronounced, indicating that the rim was everted and the vessel had a globular shape. The rim profile is slightly out-curved. This rim refits with the rim XU 16 from 20 to 30 cmbs. The vessel diameter is approximately 40 cm based on measuring the refit pieces on a rim diameter chart.

In Shovel Test 90E from 0 to 30 cmbs, there were three small, refit fragments from an undecorated rim with a smooth surface and fine grit temper. The interior surface of the sherds is absent. The lip is slightly rounded. It is too small to determine rim angle or profile.

11.17 Faunal Analysis

A moderate amount of faunal material was recovered (n=717; w=304.6g; Table 53), and all of it is from the southern portion of the site. Most of the fauna appears to be associated with the Middle/Late Archaic component, based on its general vertical patterning below the Terminal Woodland components and its association with dated bone and diagnostic artifacts.

Nearly all of the faunal material could be identified only as mammalian (91% by count and 64% by weight) because the small size and fragmentary condition of the remains do not allow for specific identification of species or element. Small amounts of faunal remains were identified as deer, turtle, small-size mammal, medium to large-size mammal, and large-size mammal. The thickness of some of the large mammal bones indicates they are larger than deer, and these specimens may be elk, moose, or bear. Nearly all of the remains (95 percent by count and 86 percent by weight) were thermally altered (calcined) from discard into a fire or use as a fuel. The extreme heat and calcination of the bone is likely what caused it to break into small fragmentary pieces.

Table 53. Site 21CA772 Faunal Material by Count and Weight (g).

Class	Unmodified Count (Weight)	Thermally Altered Count (Weight)	Total by Count (Weight)	% by Count (Weight)
Mammalian, medium/large	8 (19.9)	31 (28.2)	**39 (48.1)**	**5 (16)**
Mammalian	20 (3.2)	630 (191.7)	**650 (194.9)**	**91 (64)**
Mammalian, large	3 (4.9)	17 (39.8)	**20 (44.7)**	**3 (15)**
Odocoileus Virginianus (White-Tailed Deer)	2 (12.7)	-	**2 (12.7)**	**<1 (4)**
Mammalian, small	-	2 (0.4)	**2 (0.4)**	**<1 (<1)**
Mammalian, Medium	1 (1.5)	-	**1 (1.5)**	**<1 (<1)**
Turtle	-	3 (2.3)	**3 (2.3)**	**<1 (1)**
Total	**34 (42.2)**	**683 (262.4)**	**717 (304.6)**	**-**
%	**5 (14)**	**95 (86)**	**-**	**100**

11.18 Artifact Patterning and Components

Horizontal Patterning

No diagnostic artifacts or radiocarbon dates were obtained for the north half of the site, and the age and cultural affiliation of this area is unknown. Diagnostic artifacts and radiocarbon dates in the southern half of the site indicate horizontally overlapping Terminal Woodland and Middle/Late Archaic components. These components also lack clear, discrete vertical patterning in most areas, and therefore the association of artifacts and activities associated with specific components is uncertain in most areas. In the one area where the components can be confidently delineated vertically (XU block 1, 2, 7S, 7N, 8, 10, 11, and 12), the Middle/Late Archaic component contains calcined bones, FCR, lithic debris, cores, and retouched/utilized flakes and the Terminal Woodland contains ceramics, FCR, lithic debris, and a core.

Lithic debris was recovered from across the site area. FCR occurred in all areas, except the north end. Faunal material and projectile points were recovered only from the southern one-third of the site. Ceramics were recovered in the northern portion of the southern half of the site from two XU blocks (XU block 1, 2, 7S, 7N, 8, 10, 11, 12 and XU block 16, 17, 18W, 18N, 22).

Vertical Patterning

Vertically discrete components were clearly defined only in one small area of the site (XU block 1, 2, 7S, 7N, 8, 10, 11, and 12) where a Terminal Woodland component with Ogechie ceramics overlies a Middle/Late Archaic component. In some areas (XU block 3, 6, and 9 and XU block 13 and 14) there is some evidence of vertically distinct components based on artifact types, flake types, and lithic raw material types, although the sample size is often small and components appear to overlap. However, the absence of diagnostic artifacts or radiocarbon dates does not allow for the identification of specific components in these areas. The block of XUs 15, 19, 20, and 21 provides clear evidence Archaic and Terminal Woodland components based projectile points and radiocarbon dates. However, while there is some limited evidence of vertical patterning in these XUs based on flake and lithic raw material types, the provenience of the projectile points and radiocarbon dates indicates that there is extensive vertical displacement of artifacts and the components are mixed.

Vertical patterning of flake and lithic raw material types was discussed in the XUs section. The following summary includes data from units that had adequate sample sizes and vertical patterning that appears relevant to the interpretation of components.

XU block 1, 2, 7S, 7N, 8, 10, 11, and 12 had a wide range of diagnostic flake types (bipolar, bifacial, and nonbifacial) in the lower component (Middle/Late Archaic) below 20 cmbs, with bifacial shaping flakes being particularly abundant. In contrast, bipolar and nonbifacial flakes are most prominent in the upper component (Terminal Woodland) from 0 to 20 cmbs, with only very small amounts of bifacial thinning and shaping flakes. Prairie du Chien Chert, Swan River Chert, quartzite, rhyolite, and Knife River Flint are notably more numerous or occur only in the Archaic component (Middle/Late Archaic) below 20 cmbs. Knife Lake Siltstone and quartz occur in approximately equal amounts in both components.

Although there are no diagnostic artifacts or dates from XUs 13 and 14, the vertical distribution of flake types and raw materials strongly indicates that there are upper and lower components that overlap. The 0 to 10 cmbs level, which is likely a Terminal Woodland component, contains mostly bipolar flakes, with a small amount of nonbifacial flakes, and no decortication flakes. In contrast, flake types in levels below 10 cmbs (probable Middle/Late Archaic component), include moderate amounts of all diagnostic types, excluding bifacial thinning flakes, which are rare or absent in all levels. However, there is likely an overlap in these components in the 10 to 20 cmbs level. Notable patterns in raw materials include 1) a concentration of basalt and quartzite in the upper component (0 to 10 cmbs); and 2) an absence of several materials from the upper component (0 to 10 cmbs) that are present in deeper component.

In XU block 15, 19, 20, and 21, two components (Terminal Woodland and Middle/Late Archaic) are defined by projectile points and radiocarbon dates. However, there is vertical overlap and mixing of artifacts to varying degrees from the components. Based on artifact types, it is suggested that the 0 to 20 cmbs level is a Terminal Woodland component, and the Middle/Late Archaic component is below 20 cmbs, with the 20 to 30 cmbs level likely containing an overlap of these components. Notable vertical patterning of lithic debris includes a cluster of bipolar flakes from 10 to 20 cmbs and an absence of bifacial flakes and nonbifacial flakes, which occur below 20 cmbs. A smaller amount of bipolar flakes and cores occur from 20 to 80 cmbs, indicating bipolar technology was also used by the earlier components and/or there is vertical displacement of artifacts. Utilized/retouched flakes and bifaces are most numerous from 30 to 50 cmbs but do occur from 10 to 30 cmbs. Swan River Chert, Tongue River Silica, Knife River Flint, Knife Lake Siltstone, and quartz are most abundant below 20 cmbs and are more likely associated with the Archaic component.

The A horizon in XU block 1, 2, 7S, 7N, 8, 10, 11, and 12, which was near the base of the hill, was about ten cm thicker than in XU block 3, 6, and 9, which was near the hill crest. It is likely that the soils on the hill crest were slightly deflated. So, comparing the vertical patterning of artifacts across the site is more complex than a simple comparison of artifacts by depth, as there may be slightly different soil formation processes on the higher and lower elevations.

11.19 Site Integrity

There was only slight evidence of modern disturbances at the site, and these were limited to the upper 10 cm in a few tests, thereby having minimal effect on the archaeological deposits. The amount of rodent runs was generally minimal, but undoubtedly caused some artifact displacement. Many tests contained extensive tree roots, and it is likely that soil disturbances from root growth and decay and also from tree throws is one of the main causes for artifact displacement at the site, along with freeze-thaw processes. It is also commonly observed that many archaeology sites situated in sandy soils have a broad vertical distribution of artifacts unrelated to deposition, presumably because sand (as opposed to silts and clay) allows for easier displacement of artifacts. The extent of artifact displacement appears variable at the site and can be easily assessed in the units with ceramics, which can be used as a tracer for movement. In XU block 16, 17, 18W, 18N, and 22 ceramics occur from 10 to 30 cmbs, with approximately 75 percent in the 10 to 20 cmbs level. There appears to be a high degree of integrity in this unit based on the tight cluster of ceramics that show minimal vertical displacement. In XU block 1, 2, 7S, 7N, 8, 10, 11, and 12 ceramics occur from 0 to 30 cmbs, with 28 percent from 0 to 10 cmbs, 57 percent from 10 to 20 cmbs, and 15 percent from 20 to 30 cmbs. Integrity in these units is moderate because of the broader vertical distribution of ceramics, which spans 30 cm. Also, it is noteworthy that the ceramic component partially vertically overlaps an Archaic component dated to approximately 5740 RCYBP (6550 cal BP) from bone at 20 to 30 cmbs.

With the exception of calcined bone, faunal material is poorly preserved, probably because of the acidic soils. The interpretive value of calcined bone is low because of its small, fragmentary condition that does not generally allow for species identification.

In summary, the site has varying degrees of integrity, although overall integrity is assessed as moderate to low. In areas where multiple components could be confidently identified by diagnostics and radiocarbon dates, the vertical artifact distribution data shows a range of minimal to extensive mixing of site components. There was only one area (XU block 1, 2, 7S, 7N, 8, 10, 11, and 12) where site components were clearly vertically delineated, despite there being a slight overlap of components. In a few areas vertical artifact patterning in XUs suggests that multiple components are present, but the delineation of vertically discrete components was hindered in these areas by 1) the lack of diagnostics or dateable material; 2) low artifact sample size, such as when reviewing flake and lithic material types by depth; and/or 3) inverted and mixed cultural deposits, where younger artifacts were located below older artifacts.

11.20 Conclusions and Recommendations

Site 21CA772 is a multicomponent site that consists of Terminal Woodland (Ogechie) and Middle/Late Archaic occupations. The site is on an upland setting above Gull Lake and a wetland. Diagnostic artifacts from the Terminal Woodland component include three projectile points and Ogechie ceramics with trailed line decoration from two discrete areas. Charred residue on an Ogechie ceramic sherd dated to 760 +/- 30 RCYBP (cal. 730 to 665 BP). The Middle/Late Archaic component includes a Table Rock project point and five faunal samples that dated to 5910 +/- 30 RCYBP (cal. 6790 to 6665 BP), 5870 +/- 30 RCYBP (cal. 6745 to 6640 BP), 5740 +/- 30 RCYBP (cal. 6635 to 6450 BP), and 5690 +/- 30 RCYBP (cal. 6535 to 6405 BP), and 4950 +/- 30 RCYBP (cal. 5735 to 5605 BP). Four of these dates are very similar in age (overlapping or nearly overlapping) and date ca. 5800 RCYBP (cal. 6700 BP), suggesting they are from the same occupation or are approximately contemporaneous. The other date is about 700 years later and is likely a separate occupation. These dates fall at the end of the Middle Archaic and near the beginning of the Late Archaic.

Table Rock points are typically placed in the Late Archaic period, although there is evidence from western Illinois that they may date as early as about 6900 RCYBP (cal. 7,700 BP) (Nolan and Fishel 2009) and thus be older than the Late Archaic period in Minnesota. The Table Rock point at 21CA772 was recovered from XU 13 at 10 to 20 cmbs. XU 13 also contained fauna dating to ca. 5900 RCYBP (cal. 6700 BP) from 20 to 30 cmbs. While there is not a conclusive association of the fauna with the Table Rock point, it is likely that they are associated given their proximity. Alternatively, the Table Rock point may be from a later site component that was not defined and for which there is no radiocarbon date.

The Phase I and II investigations included 26 positive shovel tests, 17 1-x-1 meter XUs, and seven 1-x-0.5 meter XUs. Artifacts were recovered from 0 to 90 cmbs. Artifact density is moderate across the southern portion of the site and low in the northern portion.

The Terminal Woodland (Ogechie) and Middle/Late Archaic components occur in the southern half of the site. There was only one location (XU block 1, 2, 7S, 7N, 8, 10, 11, and 12) where these components were clearly vertically delineated, although with a slight vertical overlap. Other areas in the southern half of the site contain evidence suggestive of multiple components based on vertical artifact patterning, diagnostic artifacts, and radiocarbon dates, but the delineation of the components in these areas is not clear, as discussed in the previous sections. The cultural affiliation of the northern half of the site is unknown, as no diagnostic artifacts or radiocarbon dates were obtained for that area.

Artifacts recovered from the Terminal Woodland (Ogechie) and Middle/Late Archaic components include FCR, lithic debris, stone tools, cores, and faunal material. Both components contain evidence of hunting, animal/plant processing, lithic reduction, stone tool manufacture, and cooking/heating. The presence of FCR and thermally-altered fauna suggests that fire heaths or cooking pits were present, although none were identified. Nearly all of the faunal material from the site is calcined and nearly all is associated with the Middle/Late Archaic component. Identifiable fauna were sparse and included deer, turtle, small-size mammal, medium to large-size mammal, and large-size mammal. The scarcity of fauna from the Terminal Woodland component may be a preservation bias. If the fauna was not calcined, it would likely not be preserved in the acidic soil conditions.

Bipolar and nonbifacial reduction technologies occur in the Terminal Woodland and Middle/Late Archaic components. However, bifacial reduction, including bifacial thinning and shaping, appears to be mostly associated with the Middle/Late Archaic component. The initial and middle stages of lithic reduction occur in both components, but evidence for the final stage of stone tool production and resharpening occurs only in the Middle/Late Archaic component. A wide variety of locally available materials occur in both components. Non-local Prairie du Chien Chert is associated with the Middle/Late Archaic component. Exotic Knife River Flint occurs in very small amounts, but its association with site components is not conclusive. In one area it appears to be associated with the Middle/Late Archaic component. These non-local materials were procured though long-distance trade networks or possibly travel to source areas.

No features were identified, although a cluster of 37 netsinkers was recovered, and they are most likely associated with the Middle/Late Archaic component based on their vertical distribution.

The site has varying degrees of integrity, although overall integrity is assessed as moderate to low. There was only one area (XU block 1, 2, 7S, 7N, 8, 10, 11, and 12) where site components were clearly vertically delineated, despite there being some overlap of components. In other areas, there was either a lack of diagnostic or datable material to identify components or the delineation of vertically discrete components low artifact sample size and/or inverted and mixed cultural deposits. With the exception of calcined bone, faunal material is poorly preserved, probably because of the acidic soils. The interpretive value of calcined bone is low because of its small, fragmentary condition does not generally allow for species identification.

The research potential of the site is low because of 1) the low artifact density in many areas, particularly the north half of the site; 2) the lack of vertically or horizontally discrete components; 3) the absence of features; and 4) the information potential was exhausted by the Phase II testing for the portion of the site within the APE, which was a very narrow corridor typically less than a few meters wide outside of the area previously disturbed from previous road construction and buried utilities. For example in the two XU blocks with ceramics, peripheral units placed adjacent to units with concentrations of ceramics had only small quantities of ceramics, indicating most of the sherds in the APE were recovered.

Beyond the data already recovered during the Phase II, the site is not capable of providing information important to relevant research themes under NRHP Criterion D (See Section 2.3 Research Themes). The site is recommended not eligible for listing on the National Register of Historic Places because it does not meet National Register Criteria A, B, C, or D. No further archaeological work is recommended at the site.

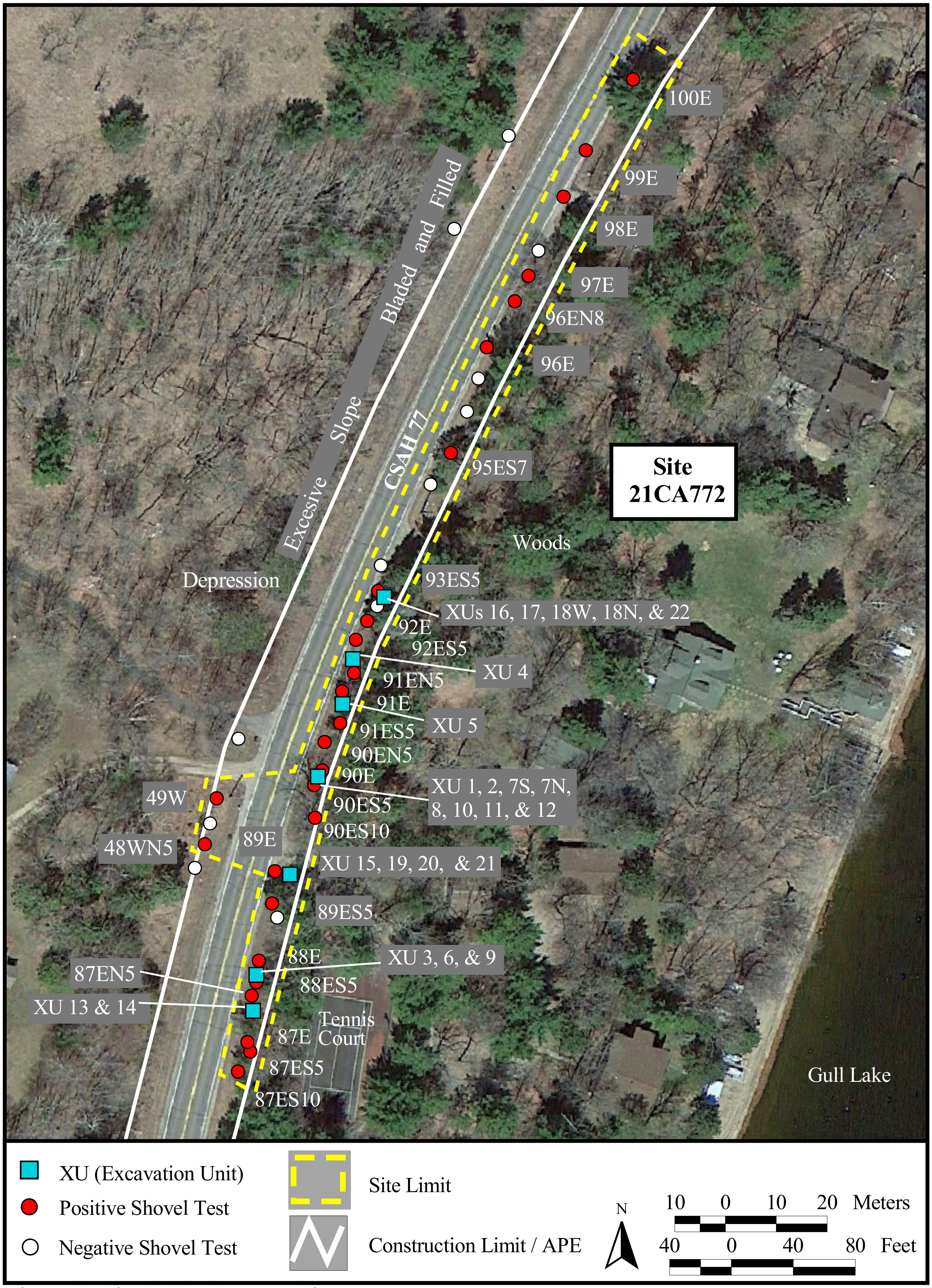


Figure 19. Site 21CA772 Map on Air Imagery.

Figure 20. Site 21CA772 Photo of XUs 15, 19, 20, and 21 at South End of Site, Showing Hill Cut, Facing Southeast from CSAH 77.

Figure 21. Site 21CA772 Photo of XUs 16, 17, 18W, 18N, and 22 in Central Portion of Site, Facing North from CSAH 77.

Figure 22. Site 21CA772 Photo of XUs 1 and 2 East Wall Profile.

Figure 23. Site 21CA772 Photo of XU 8 East Wall Profile.

Figure 24. Site 21CA772 Photo of XUs 10 and 11 North Wall Profile.

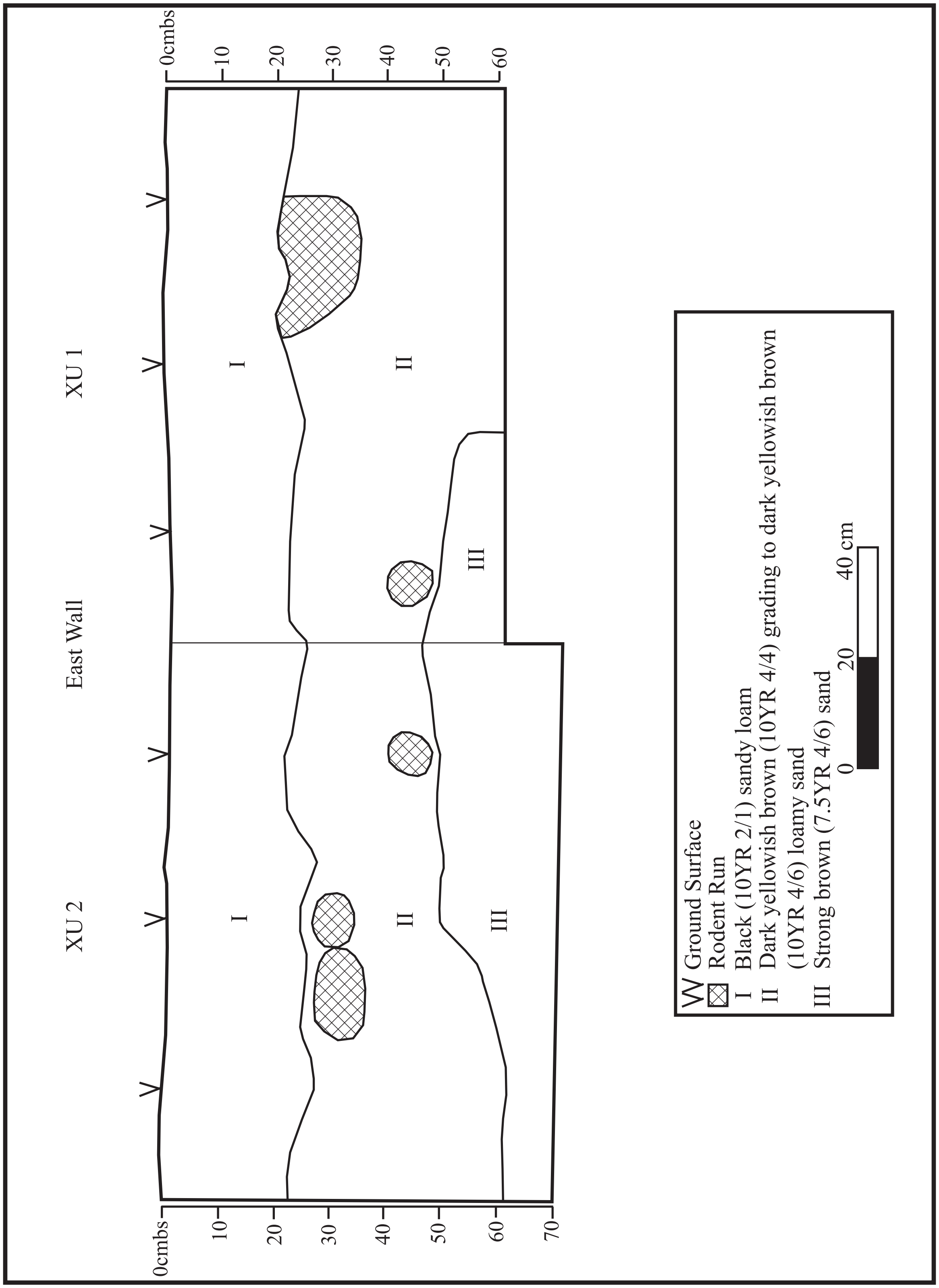


Figure 25. Site 21CA772 XUs 1 and 2 East Wall Profile.

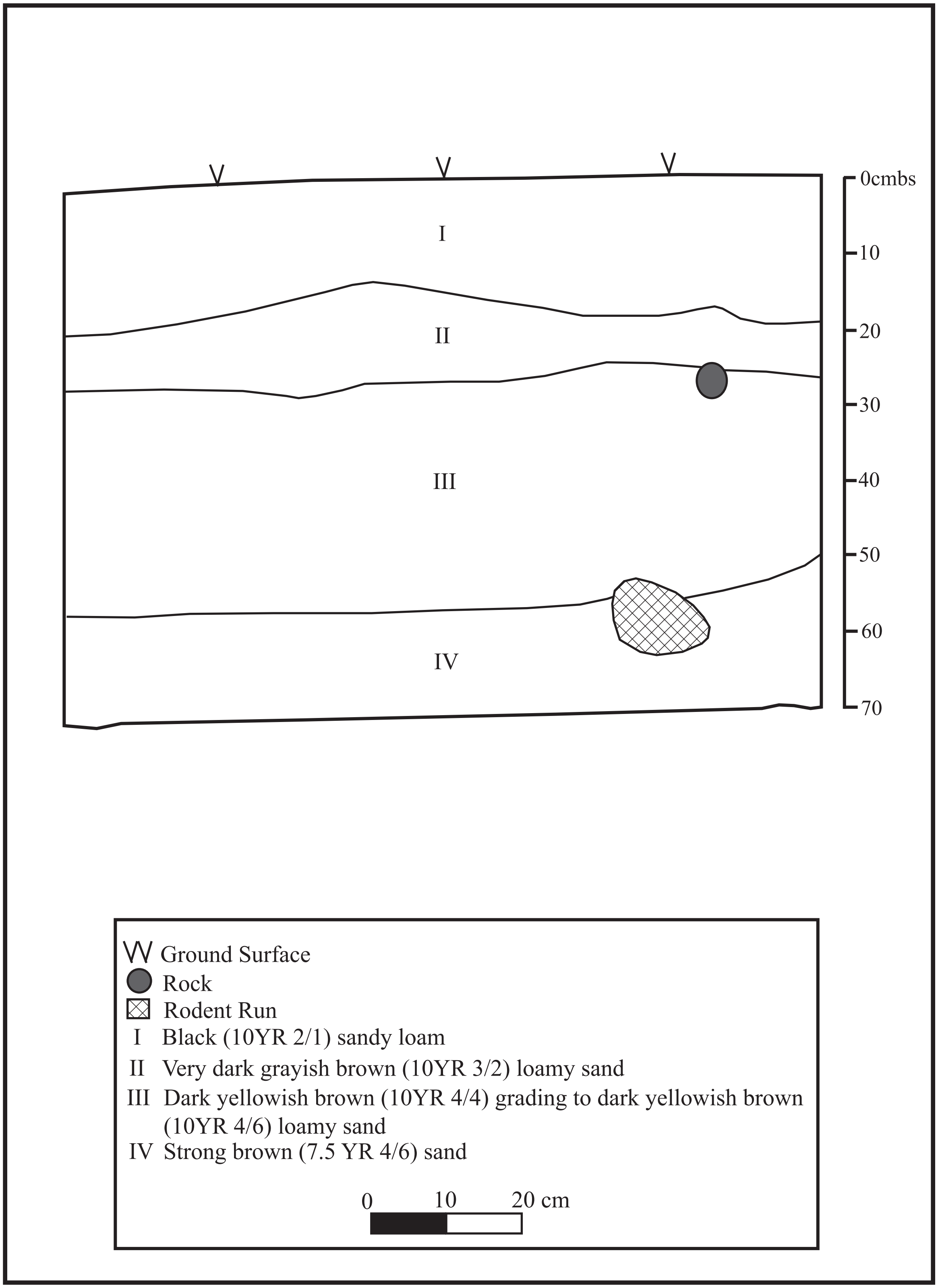


Figure 26. Site 21CA772 XU 8 East Wall Profile.

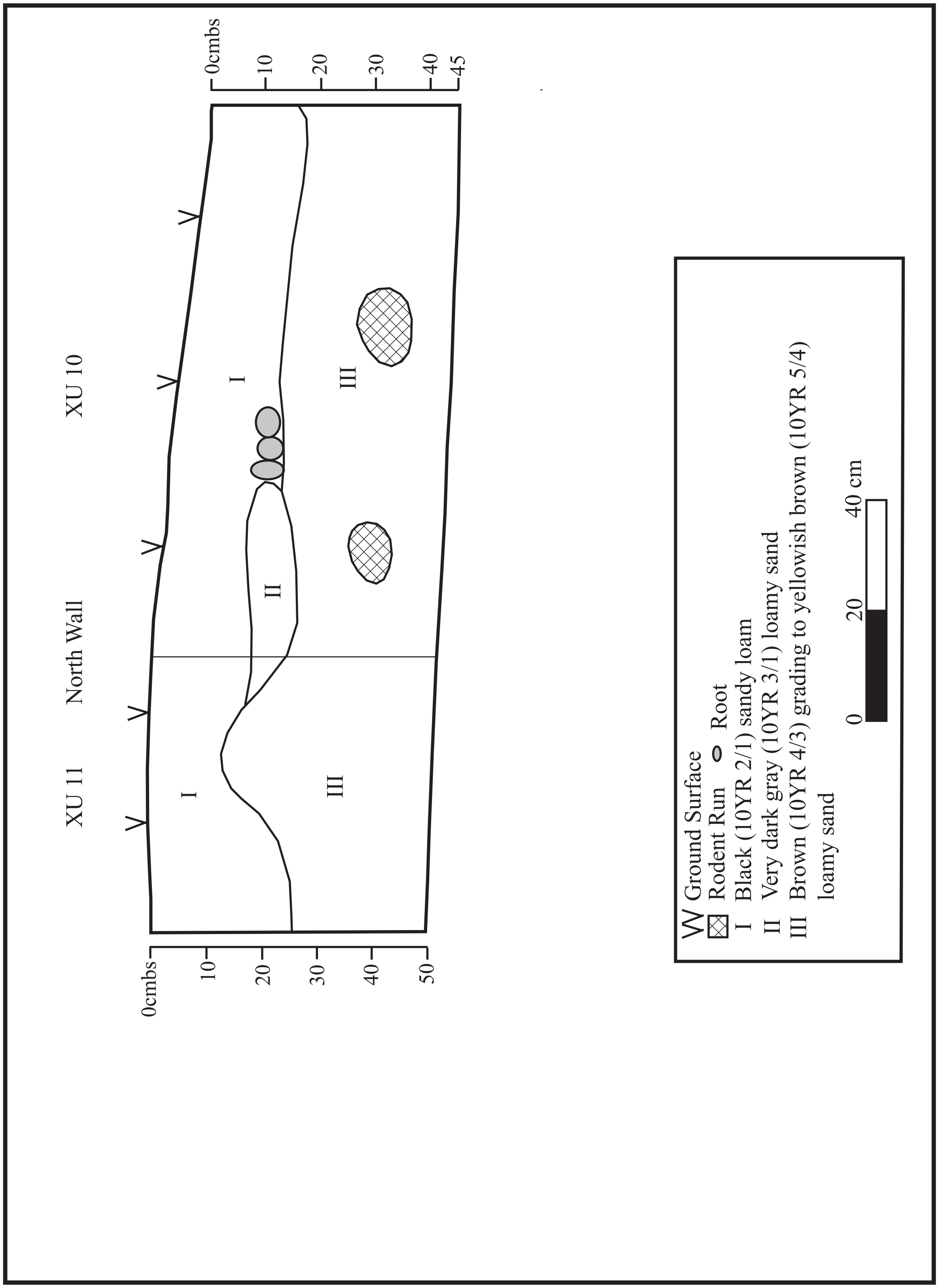


Figure 27. Site 21CA772 XUs 10 and 11 North Wall Profile.

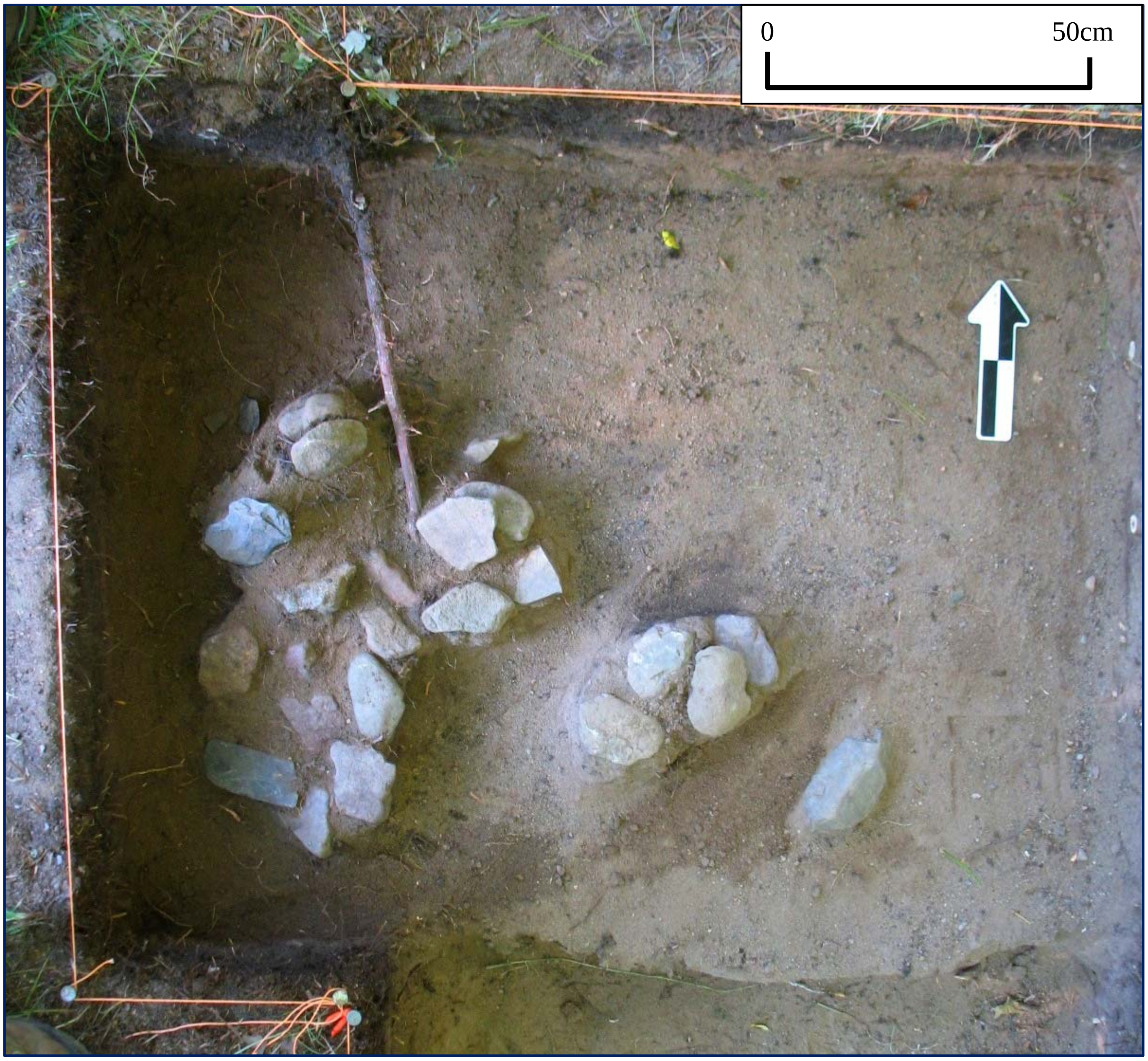


Figure 28. Site 21CA772 XUs 3 and 9 Photo of Netsinkers in Planview at 15 to 25 cmbd.

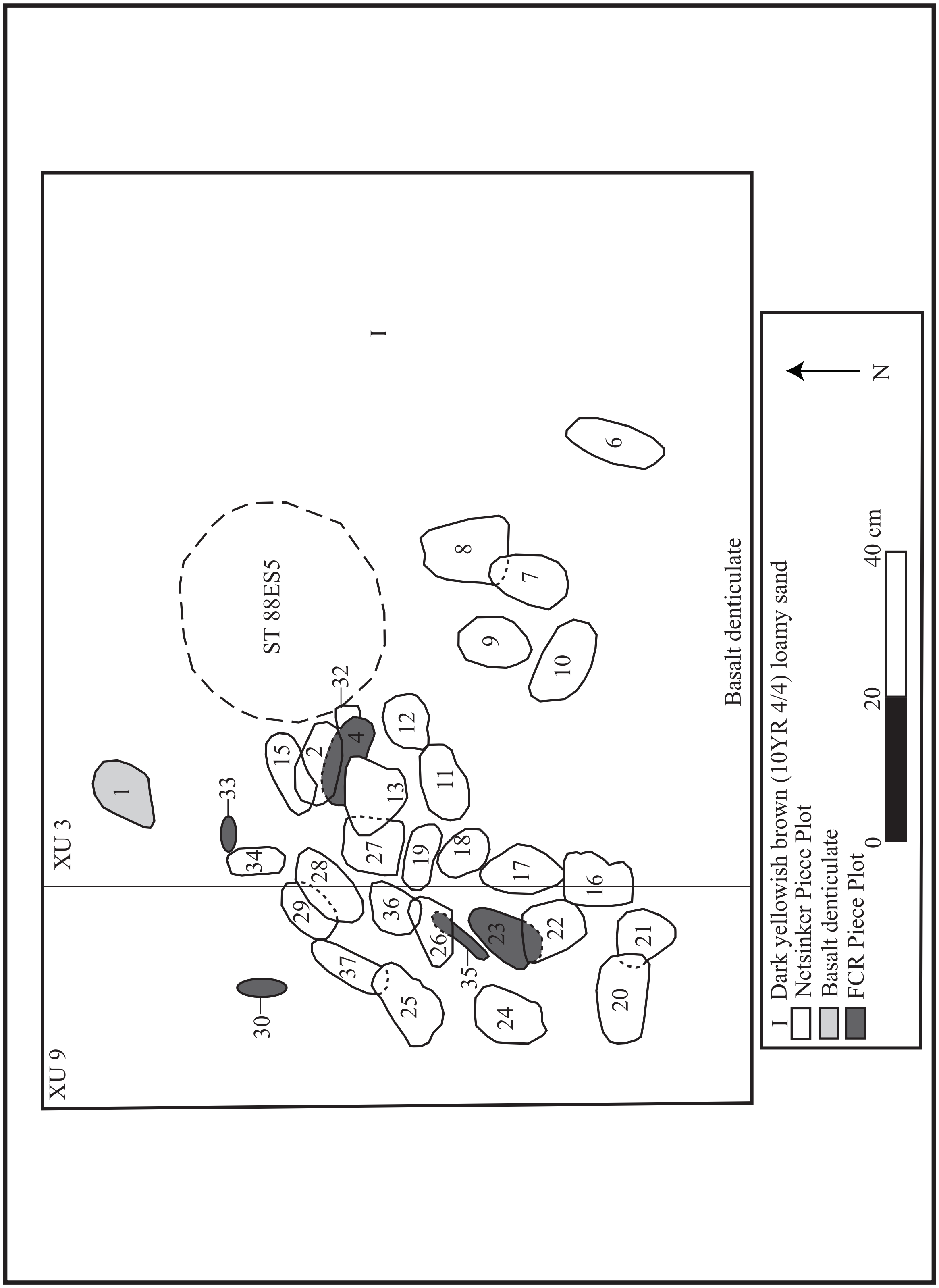


Figure 29. Site 21CA772 XUs 3 and 9 Planview of Netsinkers at 15 to 25 cmbd.

Figure 30. Site 21CA772 Netsinker Assemblage.

Figure 31. Site 21CA772 Netsinker from XU 9, PP 25.

Figure 32. Site 21CA772 Netsinker from XU 9, PP 29.

Figure 33. Site 21CA772 Photo XU 3 and 9 North Wall Profile.

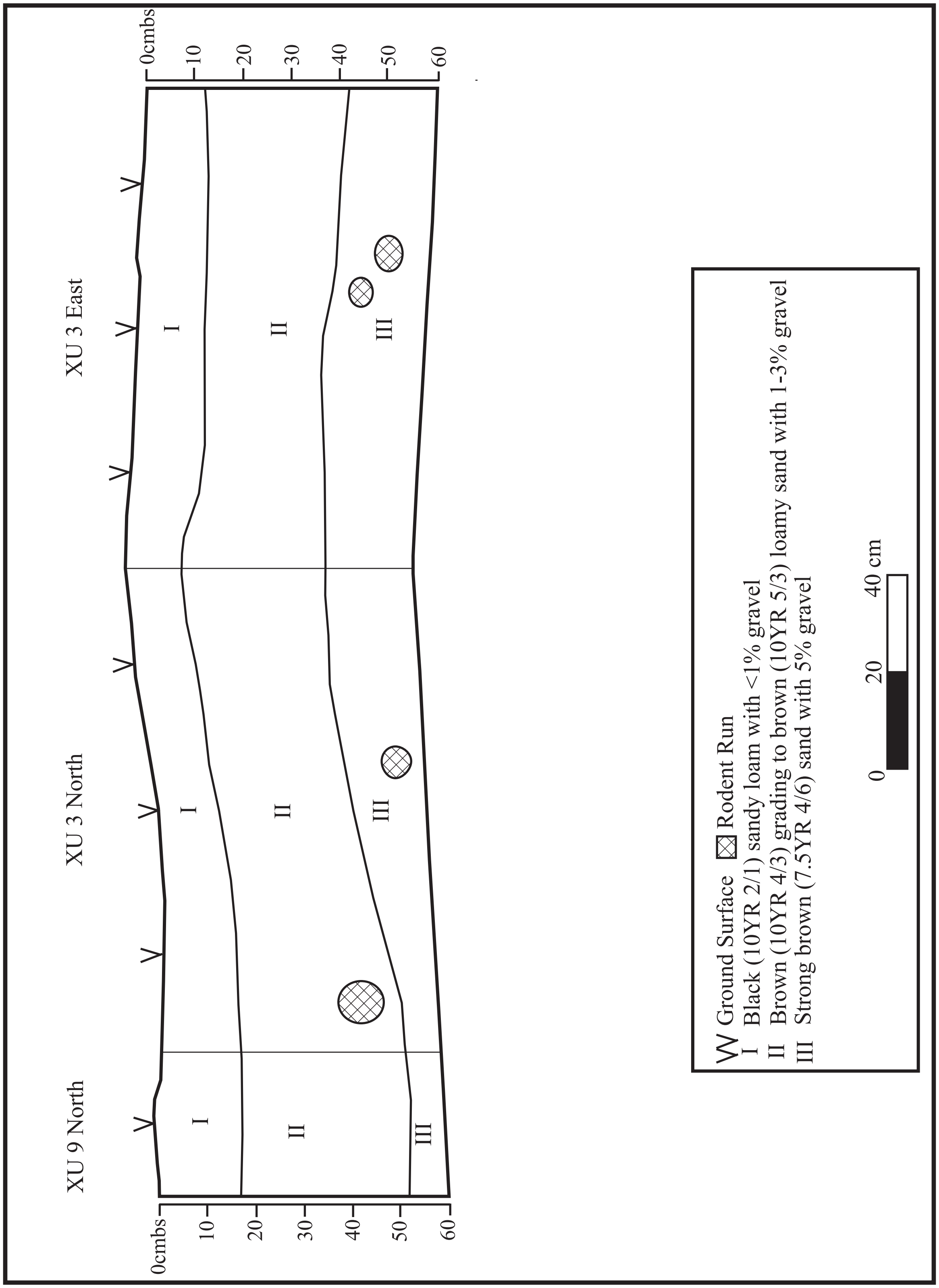


Figure 34. Site 21CA772 XUs 3 and 9 North Wall and XU 3 East Wall Profile.

Figure 35. Site 21CA772 Photo XU 4 East Wall Profile.

Figure 36. Site 21CA772 Photo XU 5 West Wall Profile.

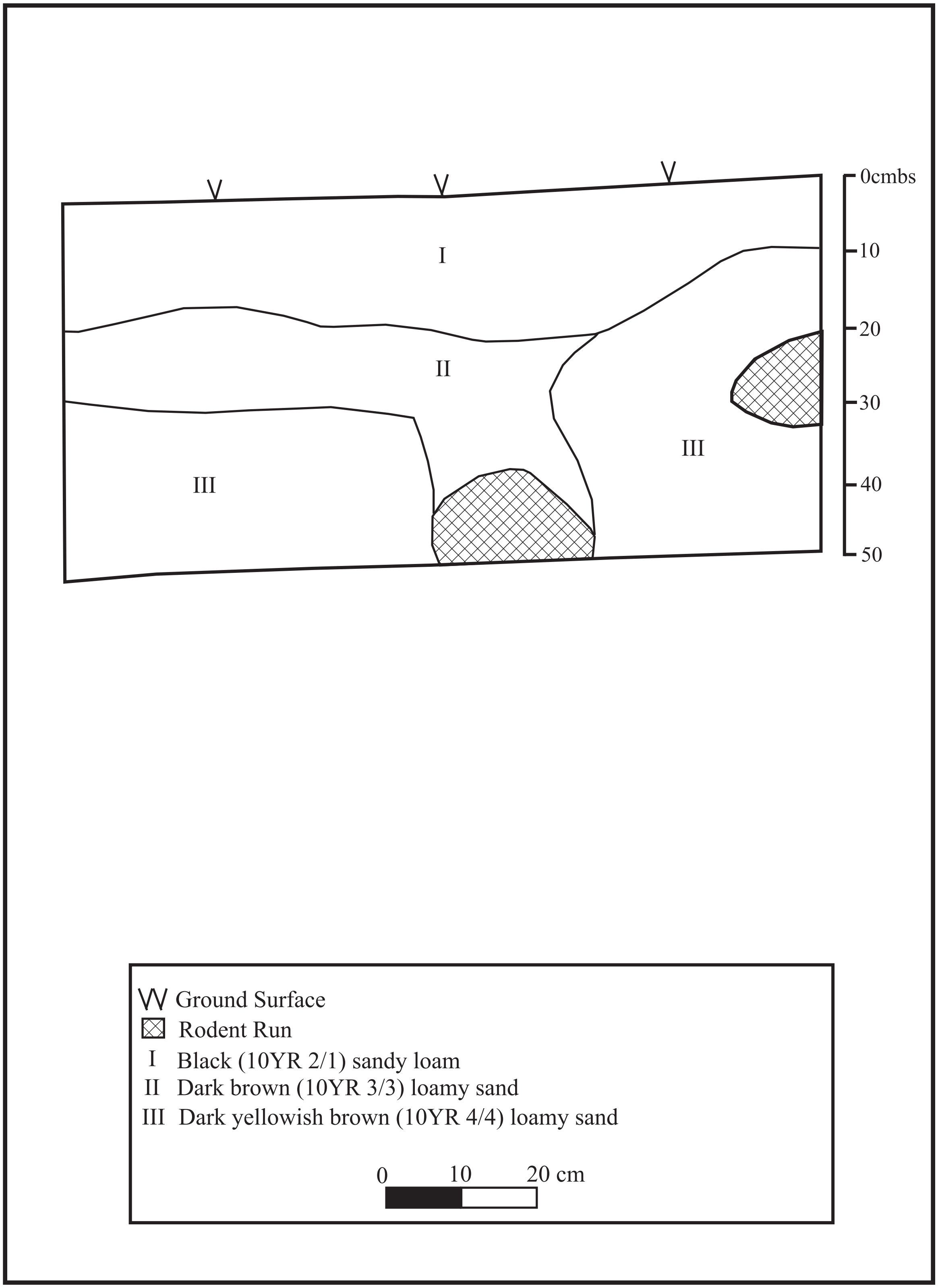


Figure 37. Site 21CA7722 XU 4 East Wall Profile.

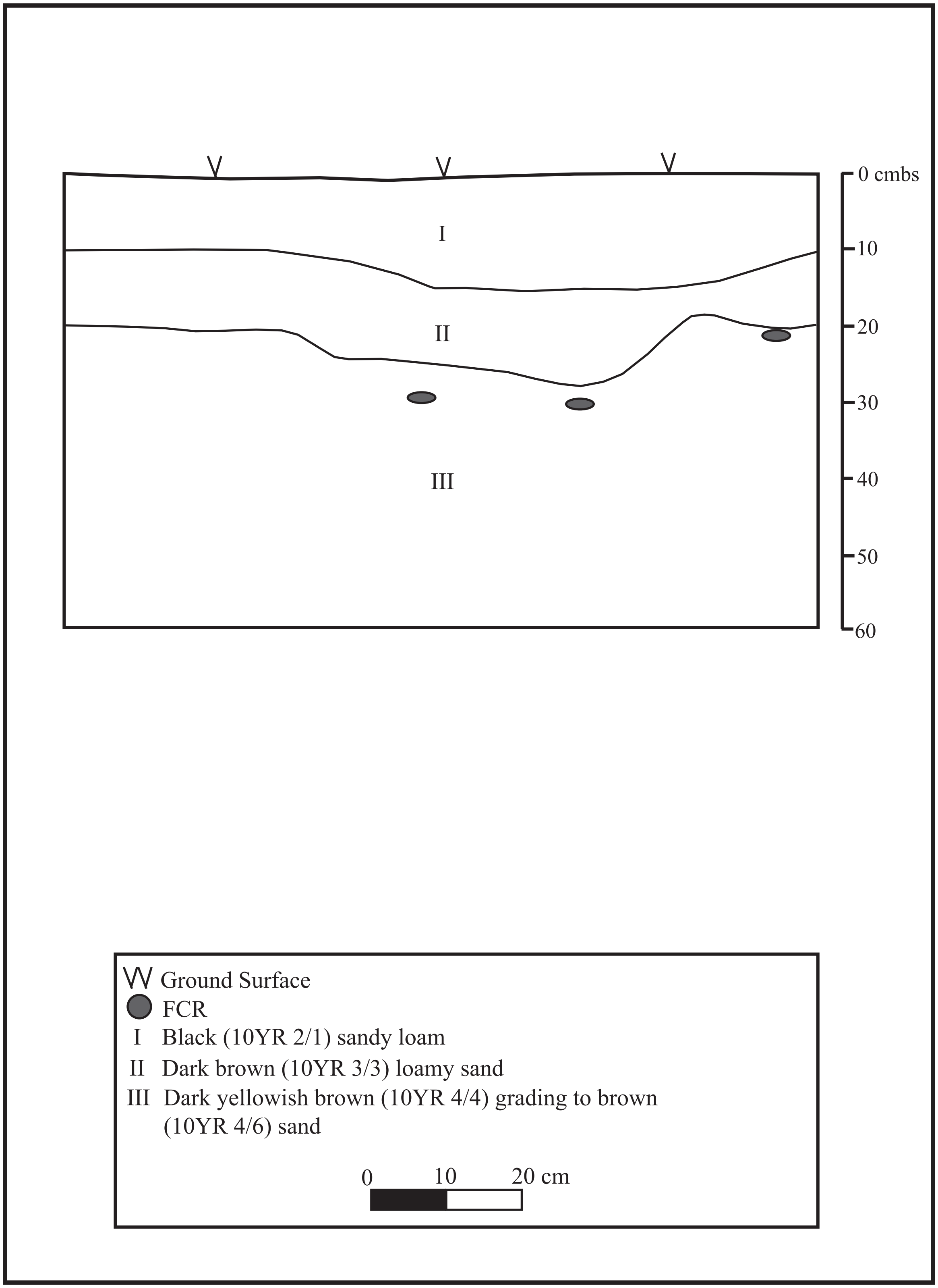


Figure 38. Site 21CA772 XU 5 West Wall Profile.

Figure 39. Site 21CA772 Photo XUs 13 and 14 East Wall Profile.

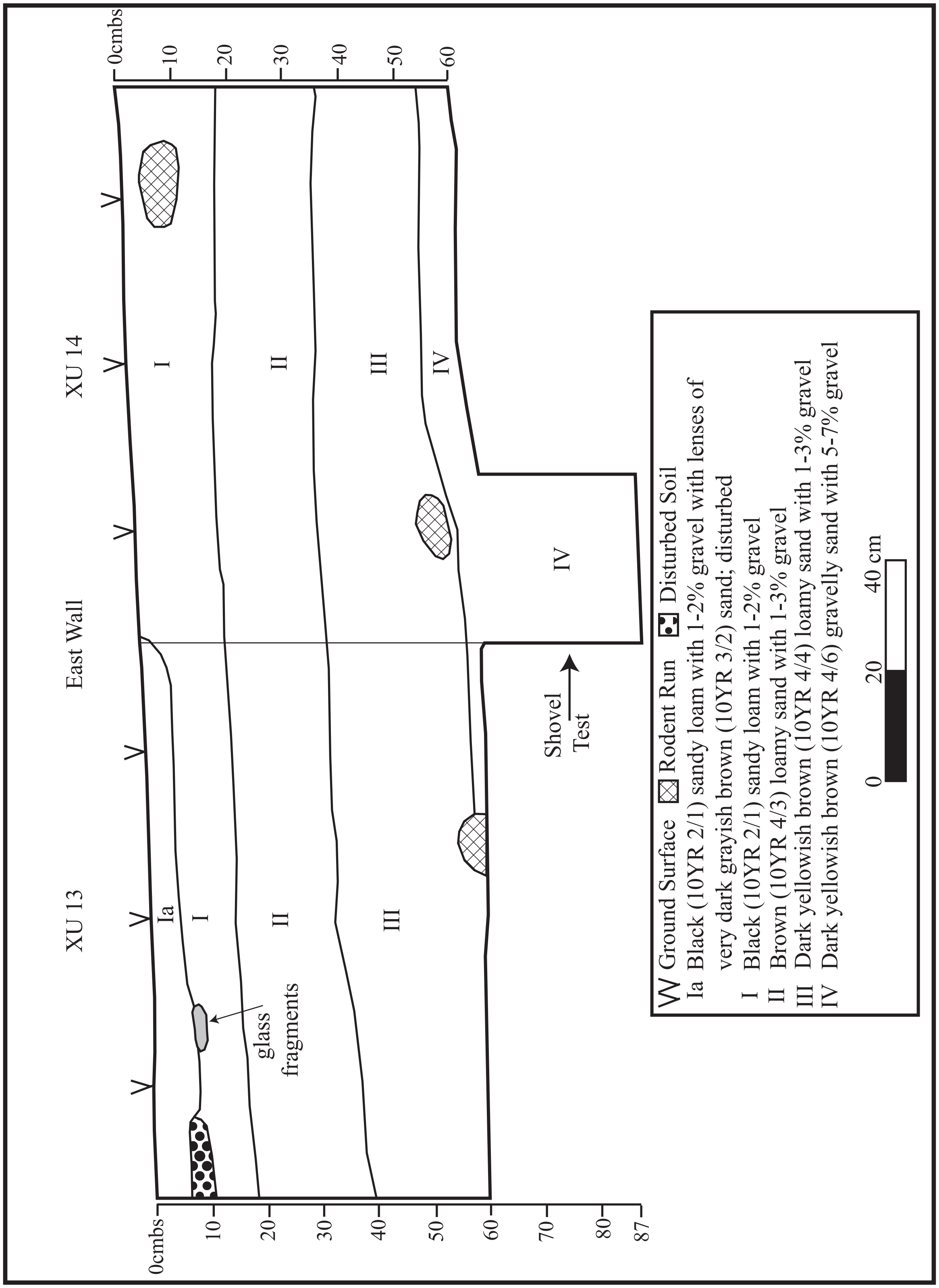


Figure 40. Site 21CA772 XUs 13 and 14 East Wall Profile.

Figure 41. Site 21CA772 Photo XUs 15, 19, and 20 East Wall Profile.

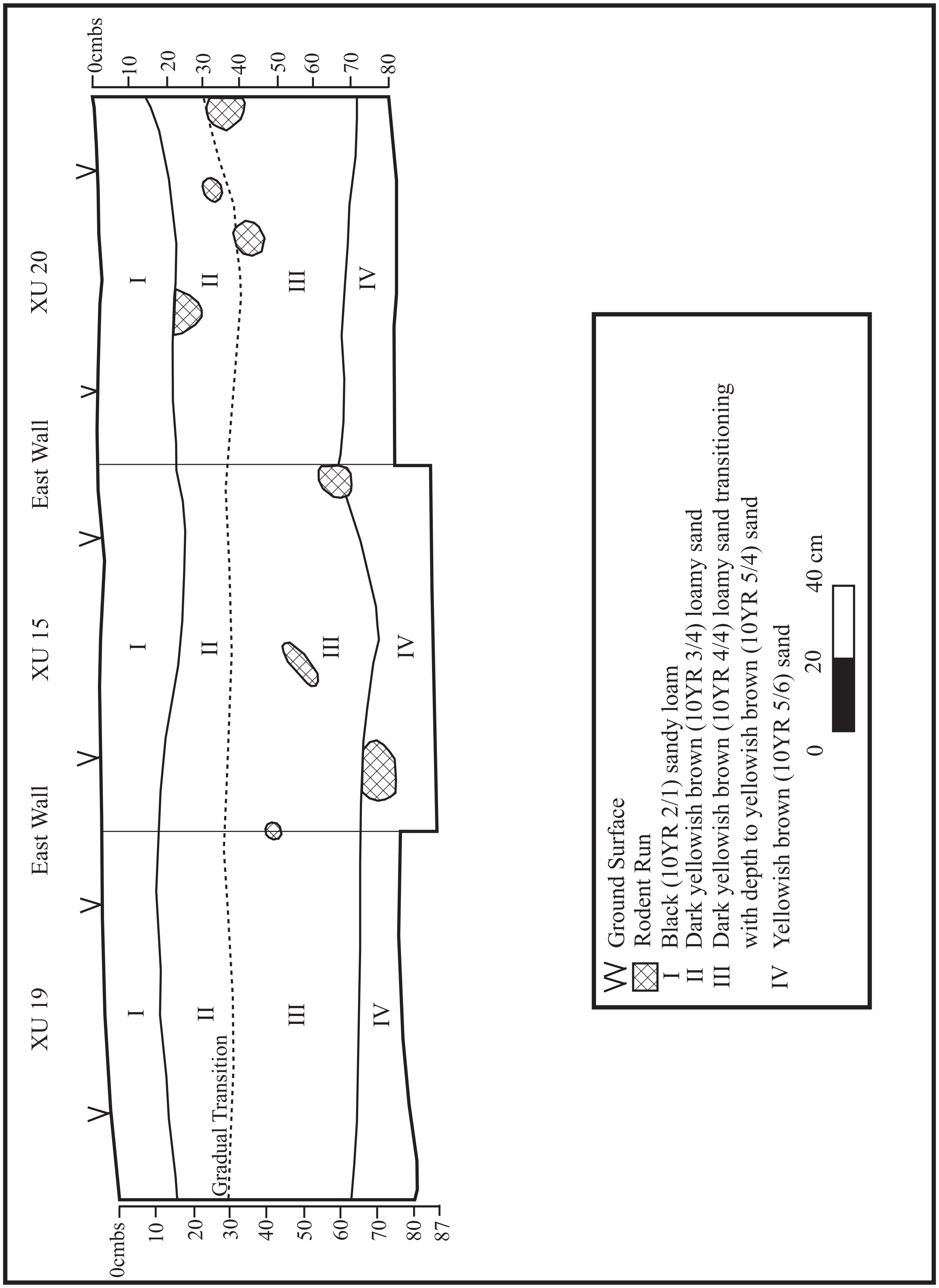


Figure 42. Site 21CA772 XUs 15, 19, and 20 East Wall Profile.

Figure 43. Site 21CA772 Photo XUs 16, 17, and 18N East Wall Profile.

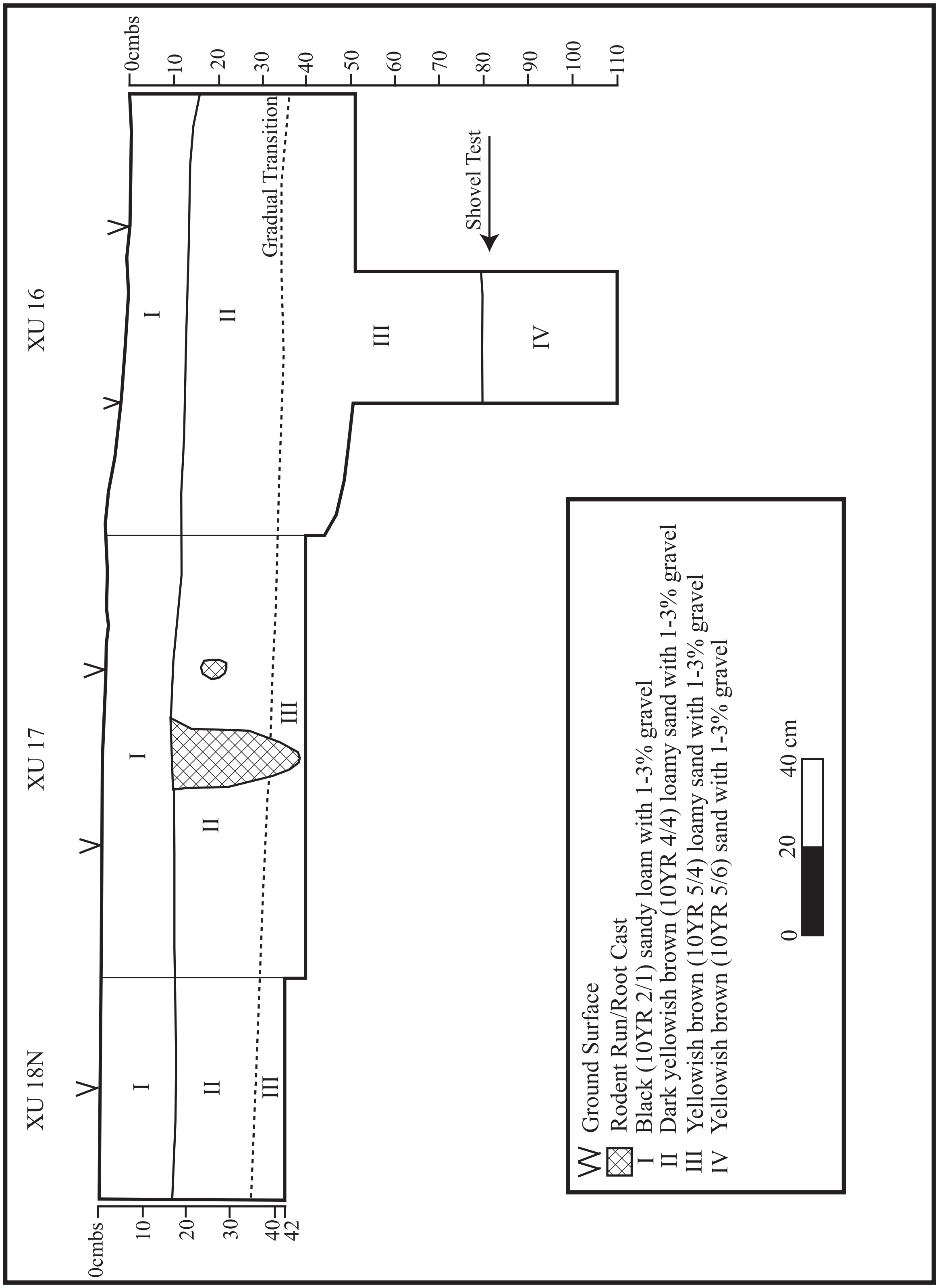
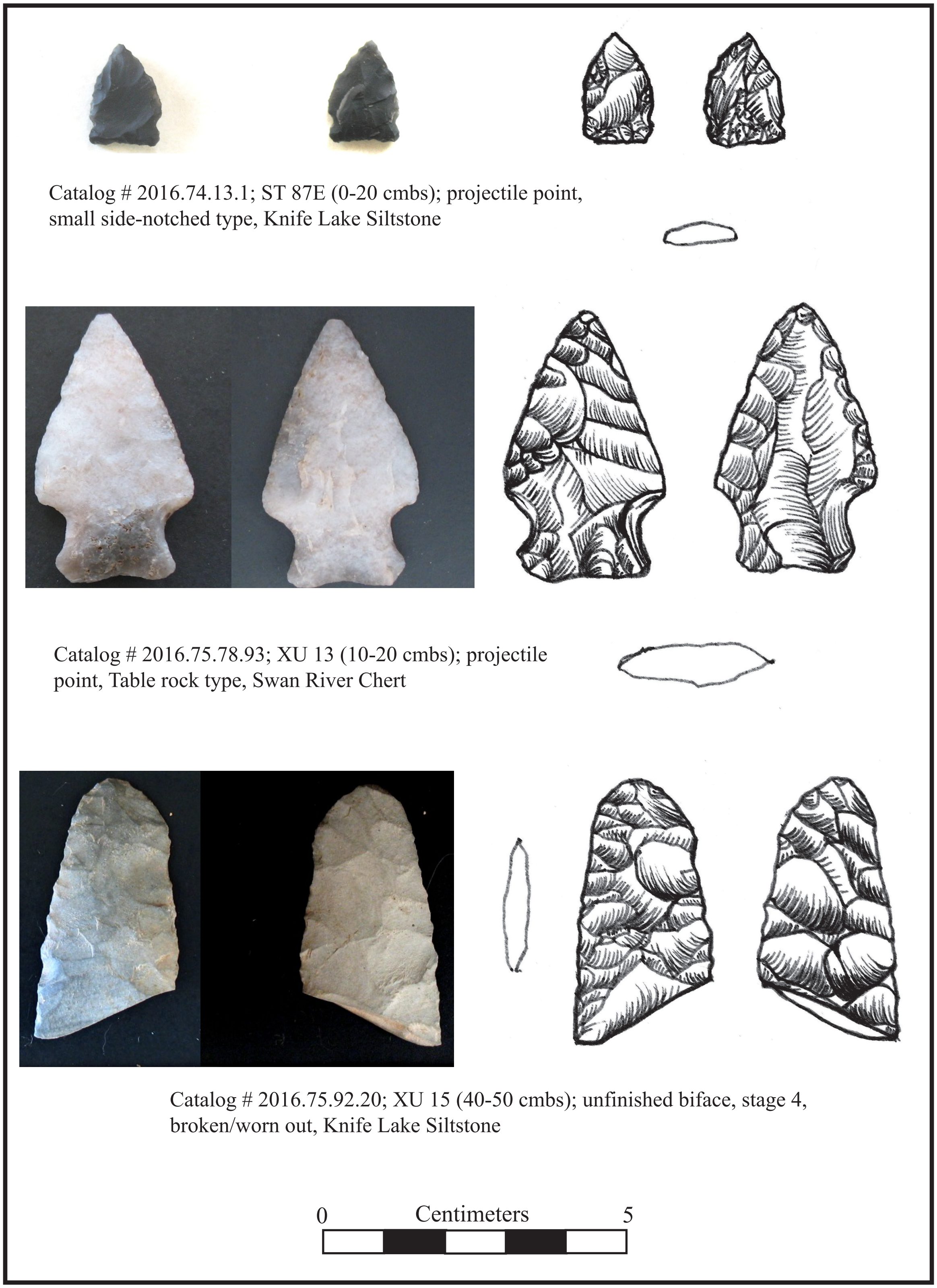


Figure 44. Site 21CA772 XUs 16, 17, and 18N East Wall Profile.

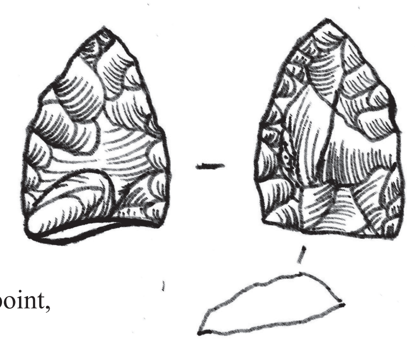


Catalog # 2016.74.13.1; ST 87E (0-20 cmbs); projectile point, small side-notched type, Knife Lake Siltstone

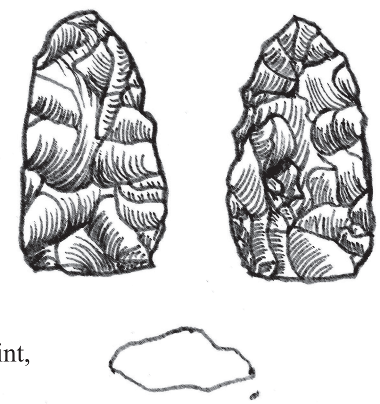
Catalog # 2016.75.78.93; XU 13 (10-20 cmbs); projectile point, Table rock type, Swan River Chert

Catalog # 2016.75.92.20; XU 15 (40-50 cmbs); unfinished biface, stage 4, broken/worn out, Knife Lake Siltstone

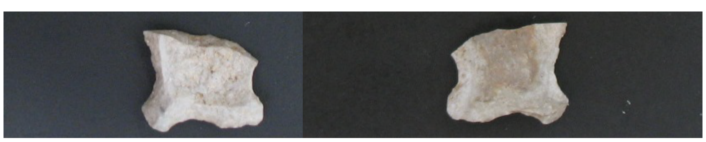
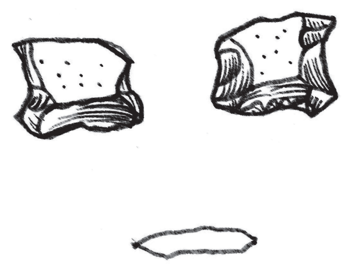
Figure 45. Site 21CA772 Photos and Illustrations of Projectile Points.

Catalog # 2016.75.93.21; XU 15 (50-60 cmbs); projectile point, broken/worn out, distal fragment, Swan River Chert

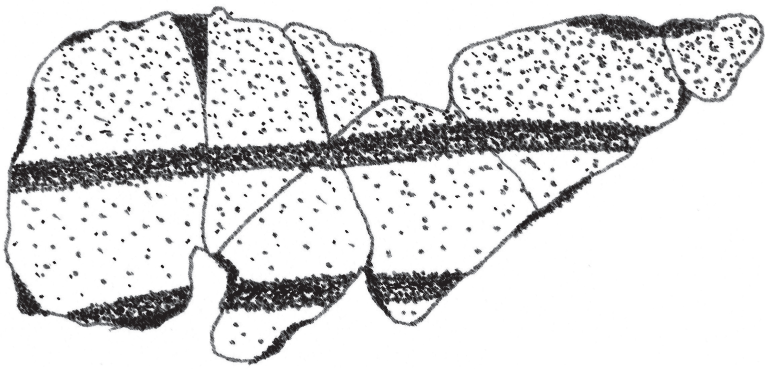



Catalog # 2016.75.109.29; XU 19 (20-30 cmbs); projecile point, heat-treated, Tongue River Silica

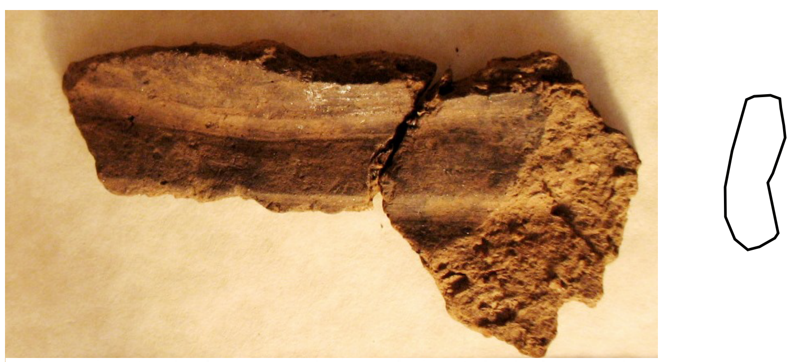



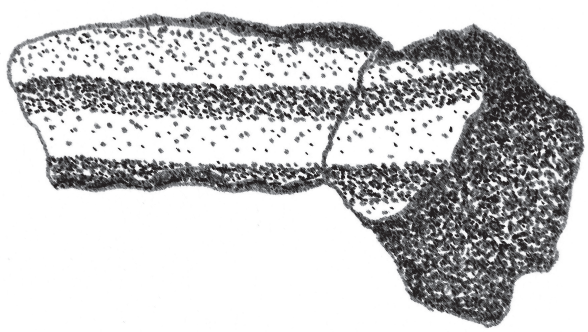
Catalog # 2016.75.110.60; XU 19 (30-40 cmbs); projectile point, broken/worn out, distal fragment, Swan River Chert

Figure 46. Site 21CA772 Photos and Illustrations of Projectile Points.



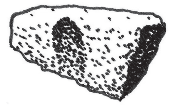
Catalog # 2016.75.12.46; XU 1 (10-20 cmbs); Body, smooth surface with trailed line decoration



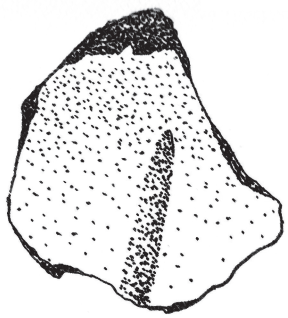


Catalog # 2016.75.12.47; XU 1 (10-20 cmbs); Neck, smooth surface with trailed line decoration

Figure 47. Site 21CA772 Photos and Illustrations of Trailed Line Ceramics from XU 1, 10-20 cmbs.



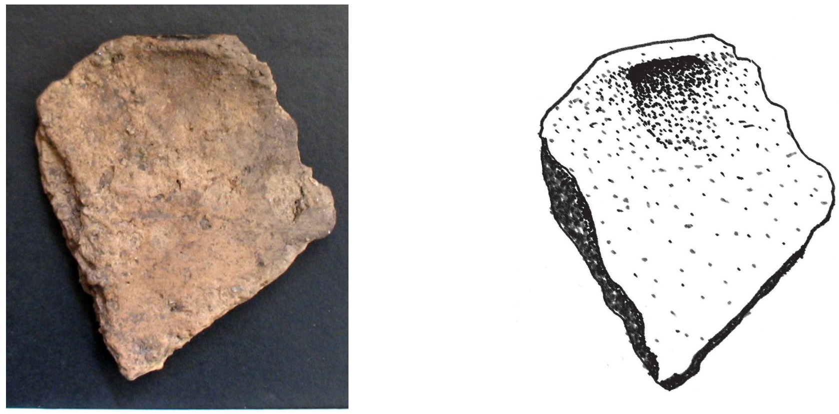
Catalog # 2016.75.18.87; XU 2 (10-20 cmbs); Rim, interior and exrterior absent, trailed line or tool impression on interior or exterior



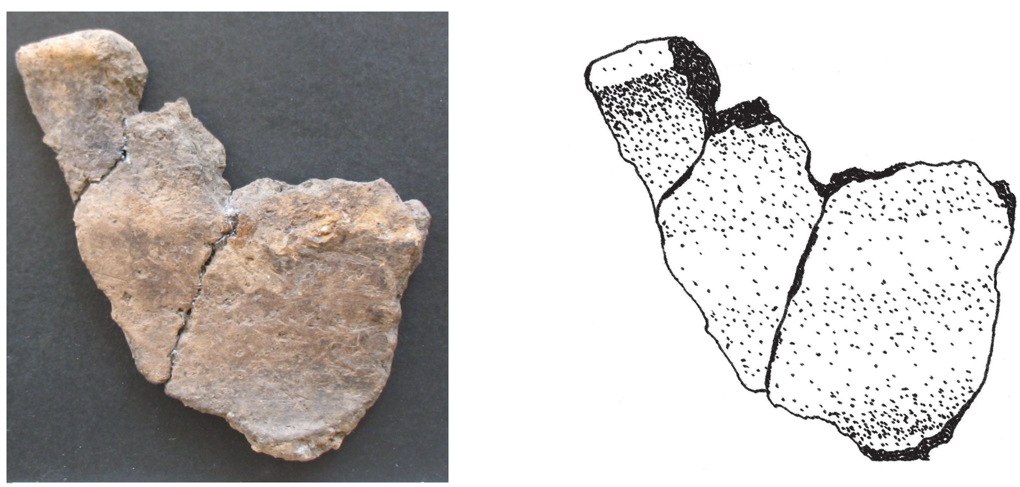
Catalog # 2016.75.103.39; XU 18W (0-20 cmbs); Neck sherd on far left, body sherds on right, cord marked surface with trailed line decoration

XUs 1 and 2 (0-20 cmbs); Body sherds with smooth surface and trailed line decoration

Figure 48. Site 21CA772 Photos and Illustrations of Trailed Line Ceramics.

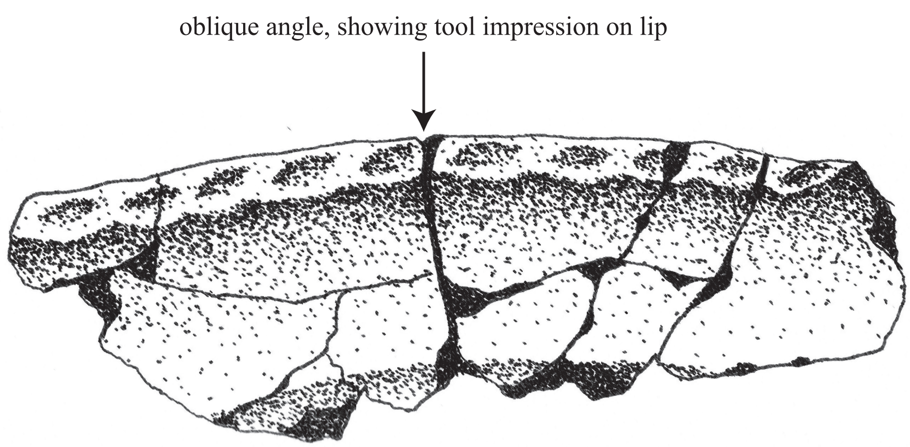


Catalog # 2016.75.11.55 XU 1 (0-10 cmbs); Rim, smooth surface



Catalog # 2016.75.11.60 XU 1 (0-10 cmbs); Rim, smooth surface

Figure 49. Site 21CA772 Photos and Illustrations of Ceramic Rim Sherds from XU 1, 0-10 cmbs.



Catalog # 2016.75.100.16; XU 17 (10-20cmbs); Rim and neck, Ogechie ware, smooth surface with trailed line decoration.

Figure 50. Site 21CA772 Photo and Illustration of Ogechie Ware Rim from XU 17, 10-20 cmbs.

12. SITE 21CA773

12.1 Overview

Site 21CA773 is a multicomponent site that consists of a large, precontact period artifact scatter and habitation. One of the precontact occupations included a Late Archaic earthen oven that dates to ca. 3900 RCYBP (cal. 4500 BP). The age and cultural affiliation of the other precontact occupations are unknown because of the absence of diagnostic artifacts or dateable materials. The site is in T135N, R29W, N1/2 Section 29 (Figures 1 and 2) and is 535 by 20 meters in size, encompassing 2.6 acres. UTM coordinates are E395570 N5148860 for the north end and E395305 N5148395 for the south end (1983 NAD Zone 15). A map of the site on aerial imagery is presented in Figure 51. A photo of the site is in Figure 52. All figures are contained at the end of this section. The survey corridor, centered on the existing CSAH 77 centerline, was 20 meters wide (66 feet).

12.2 Physical Setting and Soils

The site extends along the east and west sides of CSAH 77. The north end of the site is about 20 meters south of Cobbanwood Way and the south end is about 125 meters south of Archer Road. The site ranges from 100 to 250 meters east of Lake Margaret and from 90 to 140 meters west of Gull Lake. The site is situated on level to rolling terrain that is wooded. There was no surface visibility.

Soils are mapped as Graycalm loamy sand (Web Soil Survey 2015). These soils are somewhat excessively drained and formed in formed in sandy glaciofluvial deposits on outwash plains, glacial drainage channels, moraines, kames, and stream terraces.

12.3 Radiocarbon Dating

Radiocarbon dates were obtained from charcoal from a feature in XU 2 and from a calcined faunal fragment in XU 6 (Table 54). The age of the charcoal sample is 3990 +/- 30 RCYBP (cal. 4525 to 4415 BP), dating to the Late Archaic period. The age of the fauna is 200 +/- 30 RCYBP (cal. 300 to 265, 220 to 140, and 25 to Post 0 BP, after 1950). The faunal date ranges from the contact period to modern times. There are no artifacts from the site that support a contact period date.

Table 54. Radiocarbon Dates.

Site and Provenience	Material	Beta Lab No.	$^{13}C/^{12}C$ Ratio (o/oo)	Conventional ^{14}C Age BP RCYBP	2 Sigma Calibrated Results (95% Probability)
21CA773 XU 2 F1 42-60 cmbd	Wood charcoal (charred material)	400915	-26.2 o/oo	3990 +/- 30 BP	Cal BC 2575 to 2465 (Cal BP 4525 to 4415)
21CA773 XU 6 0-10 cmbs	Calcined (cremated) bone carbonate	400913	-26.3 o/oo	200 +/- 30 BP	Cal AD 1650 to 1685 (Cal BP 300 to 265) and Cal AD 1730 to 1810 (Cal BP 220 to 140) and Cal AD 1925 to Post 1950 (Cal BP 25 to Post 0)

12.4 Phase I Survey Methods and Results

The site was first identified during shovel testing at 15-meter intervals. A total of 55 artifacts were recovered from 25 Phase I tests, including 36 pieces of lithic debris, 14 FCR, four faunal fragments, and a stone tool (Table 55). Artifacts were recovered from 0 to 60 cmbs, but nearly all were from 0 to 30 cmbs.

Table 55. Site 21CA773 Summary of Artifacts from Phase I Shovel Tests.

Shovel Test	Depth (cmbs)	Count	Artifact Type
103E	0-30	1	Broken flake, basaltic
106E	0-30	1	FCR
107E	0-30	1	Nonbifacial flake, basaltic
109E	0-30	3	FCR
113E	0-30	4	Mammalian, unidentifiable fragment, calcined
		1	Broken flake, quartzite
115E	0-30	1	Utilized flake, Knife Lake Siltstone
116E	0-20	2	Broken flake, basaltic and unidentified material
117E	0-30	1	Other G4 flake, quartz
118E	0-30	2	FCR
120E	0-30	1	FCR
121E	0-30	1	Nonbifacial flake, basaltic
124E	0-30	1	Shatter, quartz
		2	FCR
125E	0-30	2	Bipolar flake, Lake Superior Agate and unidentified material
		2	Broken flake, quartz
		4	Shatter, quartzite (1) and quartz (3)
		3	FCR
59W	0-30	1	Broken flake, quartzite
60W	0-30	1	Bipolar flake, quartzite
	30-60	1	FCR
61W	0-30	1	Broken flake, quartz
64W	0-30	1	FCR
65W	0-30	1	Nonbifacial flake, basaltic
		2	Broken flake, rhyolite and quartzite
66W	0-30	1	Nonbifacial flake, quartzite
		3	Broken flake, Lake Superior Agate
	30-60	1	Nonbifacial flake, Lake Superior Agate
67W	0-30	1	Decortication flake, basaltic
68W	0-30	1	Edge preparation flake, basaltic
70W	0-30	1	Broken flake, igneous
73W	40-60	1	Broken flake, quartzite
75W	0-30	1	Broken flake, basaltic
	30-60	1	Decortication flake, quartz
		1	Nonbifacial flake, basaltic
76W	0-30	1	Nonbifacial flake, igneous
		1	Broken flake, basaltic
Total	-	**55**	-

12.5 Phase II Survey Methods and Results

Phase II testing methods consisted of digging close-interval tests adjacent to the positive Phase I tests in order to refine site limits, make a preliminary assessment of site integrity, recover additional artifacts, and provide data on intrasite artifact patterning. The Phase II close-interval shovel tests were numbered based on the direction and distance from the Phase I test. For example, Shovel Test 103EN5 is located five meters grid north of Shovel Test 103E. Twelve XUs were placed in site areas that offered the greatest research potential based on the data from the shovel tests.

12.6 Phase II Shovel Test Results

Phase II shovel tests were typically placed at 5-meter intervals adjacent to positive Phase I tests. A total of 87 artifacts were recovered from 27 Phase II tests, including 42 FCR, 36 pieces of lithic debris, seven faunal fragments, and two stone tools (Table 56). Artifacts were recovered from 0 to 80 cmbs, with most from 0 to 30 cmbs.

Table 56. Site 21CA773 Summary of Artifacts from Phase II Shovel Tests.

Shovel Test	Depth (cmbs)	Count	Artifact Type
102ES10	0-30	1	Nonbifacial flake, Tongue River Silica
102ES15	0-30	2	FCR
103EN5	0-30	8	FCR
103ES10	0-30	3	FCR
103ES15	0-30	1	Nonbifacial flake, quartzite
103ES20	0-30	1	Decortication flake, quartz
103ES5	0-30	1	Shatter, quartz
		3	Broken flake, Swan River Chert (1) and quartzite (2)
		1	FCR
106EN5	0-30	3	Broken flake, basaltic
		1	FCR
107EN5	0-30	2	Broken flake, quartzite and basaltic
		2	FCR
109EN5	0-40	1	Nonbifacial flake, basaltic
		13	FCR
113EN5	0-30	2	Broken flake, basaltic
		1	Shatter, quartz
		3	FCR
114ES5	0-30	1	Bird, unidentifiable fragment
		2	Fish, dentary, fragment, calcined
		2	Mammalian, unidentifiable fragment, calcined
	30-80	1	Nonbifacial flake, basaltic
115EN5	0-30	1	Broken flake, unidentified material
115ES5	30-80	1	Nonbifacial flake, Lake Superior Agate
117EN8	40-80	1	Bipolar flake, quartz
		1	Broken flake, basaltic
		2	FCR
121ES5	0-30	2	Broken flake, basaltic and quartz
124ES7	0-30	2	Mammalian, medium/large, unidentifiable fragment
59WN7	30-60	1	FCR
	0-30	1	Side scraper, Tongue River Silica
		1	FCR
59WS5	40-60	1	FCR

Table 56. Continued.

Shovel Test	Depth (cmbs)	Count	Artifact Type
60WN7	0-30	2	FCR
61WN15	20-40	1	Shatter, quartz
65WN9	0-30	2	Broken flake, quartz and quartzite
66WS8	0-30	1	Nonbifacial flake, basaltic
		1	Broken flake, quartz
		2	Shatter, quartz
67WS8	0-30	1	Nonbifacial flake, quartz
		1	Broken flake, basaltic
68WN7	0-30	1	Broken flake, quartz
		1	Shatter, quartz
70WN5	0-30	1	Utilized flake, Hudson Bay Lowland Chert
		1	Nonbifacial flake, basaltic
		1	FCR
73WS5	0-30	1	Other G4 flake, rhyolite
		1	FCR
Total	**-**	**87**	**-**

12.7 XUs 1 and 2

XUs 1 and 2 were contiguous units centered on Phase II Shovel Test 109EN5, which yielded 13 pieces of FCR and a piece of lithic debris. The landscape sloped very slightly to the south and east. In the expectation of finding a feature, these units were dug below a datum and not the ground surface, in contrast to the other units. Excavation was terminated at a depth of 50 cmbd in XU 1 because of the lack of artifacts. However XU 2 was dug to 80 cmbd because of Feature 1. A summary of artifacts from the XUs is presented in Table 57. Feature 1, an earthen oven, was identified and is discussed below. Most of the artifacts in these XUs were recovered from the feature.

Table 57. Site 21CA773 Summary of Artifacts from XUs 1 and 2, Excluding Feature 1.

Depth (cmbd)	Lithic Debris	FCR	Total	%
0-10	-	-	**0**	**0**
10-20	-	-	**0**	**0**
20-30	-	89	**89**	**78**
30-40	1	18	**19**	**17**
40-50	2	4	**6**	**5**
50-80	-	-	**0**	**0**
Total	**3**	**111**	**114***	**-**
%	**3**	**97**	**-**	**100**

* Feature 1 contained 9 lithic debris and 196 FCR; total artifacts from XU 1 and 2 are 12 lithic debris and 307 FCR

Artifact Summary and Vertical Distribution

A total of 114 artifacts were recovered from XUs 1 and 2 (excluding Feature 1), including 111 FCR and three pieces of lithic debris (Table 57). No diagnostic artifacts were recovered. The FCR recovered from these units are like likely associated with Feature 1, an earthen oven, which was identified in these units and is discussed below.

Artifacts were recovered between 20 and 50 cmbd. The zone with the greatest artifact density (78 percent) occurs between 20 and 30 cmbd. The small amount of artifacts recovered below 30 cmbd is interpreted to be from the same occupation as materials from 20 to 30 cmbd. The entire assemblage is within a 30 cm zone and has likely been displaced slightly by natural processes over time.

The moderate amount of FCR (n=111; Table 58) recovered from XUs 1 and 2 was probably associated with Feature 1 before it was officially defined as a feature. The FCR are mostly small-sized pieces, with 95 percent being SG1 or less and five percent were cobbles or large fragments SG0 (2-4 inches). Angular FCR types (69 percent) were the most numerous, followed by much smaller amounts of other types. There were five cobbles. The FCR includes granitic, quartzite, basaltic, and unidentified material.

Table 58. Site 21CA773 XUs 1 and 2 FCR Count by Material, Size, and Type, Excluding Feature 1.

	Size Grade (SG)					FCR Type										
Material	**0**	**1**	**2**	**3**	**4**	**Angular**	**Friable Rounded**	**Cobble (friable)**	**Cobble (nonfriable**	**Angular/Spall**	**Cobble with Spall**	**Cobble with Angular**	**Crumb**	**Spall**	**Total**	**%**
Granitic	4	19	8	5	1	30	-	-	2	1	1	1	1	1	**37**	**33**
Quartzite	2	9	9	2	-	7	7	3	-	1	1	-	-	3	**22**	**20**
Unid. Material	-	3	9	2	-	10	-	-	-	-	-	-	-	4	**14**	**13**
Basaltic	-	19	17	2	-	30	-	-	-	1	-	-	-	7	**38**	**34**
Total	**6**	**50**	**43**	**11**	**1**	**77**	**7**	**3**	**2**	**3**	**2**	**1**	**1**	**15**	**111**	**-**
%	**5**	**45**	**39**	**10**	**1**	**69**	**6**	**3**	**2**	**3**	**2**	**1**	**1**	**14**	**-**	**100**

Soils and Stratigraphy

The soil horizons from the XUs are depicted in wall profiles and photographs along with Feature 1, which is discussed below. The soil profile consists of a sandy loam A horizon, overlying sandy loam E horizon, and gravelly sand 2BC horizon. The soils are fairly undisturbed, as no modern impacts were observed, and there was only a minimal amount of rodent burrows. There was a moderate amount of tree roots in most levels.

Feature 1 in XUs 1 and 2

Initial indications of Feature 1 were apparent in XUs 1 and 2 based on numerous FCR at about 25 cmbd and darker soils in the north half of XU 2 between 30 and 40 cmbd. However, it was not until approximately 40 cmbd that the feature could be clearly defined in contrast to the lighter-colored, non-feature soil. Clearly the top portion of the feature was in the black colored A horizon, which extends to about 30 cmbd in XU 2. Feature 1 was a dark, circular-shaped soil stain with a concentration of FCR. The feature extends north and east of XU 2. Based on the extent of the feature in planview, probably about 60 percent of the feature was contained in XU 2.

The planview and profile of Feature 1 was recorded in illustrations and photos during excavation (Figures 53 to 58). Feature 1 is estimated to be about 75 cm in diameter, extrapolating from the planview of the feature in XU 2 at 42 cmbd. However, in profile the feature expands above 42cmbd, and so it was likely about 90 to 100 in diameter at 25 to 30 cmbd. In profile, the feature was at least 42 cm deep and had a deep, steep-walled basin shape. The actual vertical extent of the feature, taking into account that its top was at about 25 cmbd, was likely about 50 cm. The feature fill had notably less gravel than the non-feature soils.

All feature fill (49.25 liters) was troweled and bagged for flotation. Flotation and analysis of the botanicals recovered from the light and heavy fractions was conducted by Connie Arzigian (paleoethnobotanist) and staff at MVAC.

The dark color of the feature was caused by caused by infilling of the pit with topsoil and carbon-stained sediments from charcoal. A moderate amount (between a teaspoon and tablespoon) of charcoal fragments was recovered from feature fill during flotation. The feature also contained an “arm” or extension of unknown function. This extension could be a large rodent burrow or perhaps was a small shaft for providing air to the cooking facility to aid in combustion. The feature is interpreted as an earthen oven for cooking, where the FCR were heated in a fire that was built in the pit, food was then added, and the pit was sealed (with plants and soil) during cooking, which likely took between one half and two days (See FCR Analysis Section x.x). Evidence for this interpretation includes: carbon-stained soils and the presence of charcoal and other charred plant remains; thermally-altered (oxidized – orangish colored) sediments, which are particularly noticeable on the east wall of XU 2; small to large pieces of FCR in the feature; and the deep basin shape (1–3 m in diameter and 0.1–0.3 m deep, typically 30-40 cm deep). Both plant and animal foods were cooked in earth ovens, however, plants were cooked more often (Driver and Massey 1957:233).

Feature 1 contained a moderate amount of FCR (n=196; w=1,430.9 grams) and nine pieces of lithic debris (Other G4 flakes) (Table 59). All of the other FCR recovered from XUs 1 and 2 (n=111; w=1430.9 grams) and Shovel Test 109EN5 (n=13; w=912.0 grams) are also from Feature 1, but they were recovered before Feature 1 was officially defined. Thus, the total amount of FCR actually associated with Feature 1 was 320 FCR, weighing 7,288.9 g. No faunal material was recovered from the feature.

Table 59. Site 21CA773 Feature 1 Artifact Summary by Count and Weight (g).

Lithic Debris Count (Weight)	**FCR** Count (Weight g)
9 (4.0)	**196 (1430.9)**

FCR occurred in moderate amounts throughout feature (Table 60). The FCR are mostly small-sized pieces, with 94 percent being SG2 or less, and none are larger than SG1 (two inches). Excluding crumbs, angular and angular/spall types were the most numerous FCR types followed by angular/spall and friable rounded types. There were no whole or mostly whole cobbles. Most of the FCR is granitic (83%), with much smaller amounts of a variety of other materials. Granitic rock was often preferred for earth ovens (See FCR analysis Section x.x).

Table 60. Site 21CA773 FCR Feature 1 Count by Material, Size, and Type.

Material	Size Grade (SG)				FCR Type						Total	%
	1	2	3	4	Angular	Friable Rounded	Split Cobble	Angular/Spall	Crumb	Spall		
Granitic	5	155	2	-	5	4	1	8	139	5	**162**	**83**
Quartzite	2	5	2	-	3	-	-	1	-	5	**9**	**4**
Unid. Material	-	6	2	-	-	-	-	8	-	-	**8**	**4**
Basaltic	5	6	5	-	8	-	-	-	-	8	**16**	**8**
Igneous	-	-	1	-	1	-	-	-	-	-	**1**	**1**
Total	**12**	**172**	**12**	**-**	**17**	**4**	**1**	**17**	**139**	**18**	**196**	**-**
%	**6**	**88**	**6**	**-**	**9**	**2**	**1**	**9**	**71**	**9**	**-**	**100**

A summary of charred botanical materials recovered from feature flotation is presented in Table 61. Only a very small amount of charred plant remains were recovered, including the following: nutmeat that is probably from an acorn or hazelnut; one apparently charred seed from cf. Cruciferae (Mustard family) but too eroded and fragmented to identify; and one unknown small, flat specimen with an interior that was hard and resinous but appeared charred. The extension off of Feature 1 contained one unidentifiable seed embryo that was possibly charred. The nutmeat likely indicates a fall or winter time of occupation. There was also a moderate quantity of wood charcoal in the feature. The light fraction also contained modern uncharred seeds, particularly Chenopodium.

Acorns have bitter tannins that are removed by boiling in multiple changes of water or leaching with wood ash (Moerman 1998). Hazelnuts can be eaten raw but were often cooked. The nuts may have been cooked in or processed near the feature, or they could be an incidental natural inclusion in the feature.

Table 61. Site 21CA773 Feature 1 Botanical Summary.

Provenience	Soil Volume Floated (liters)	Light Fraction >10 mesh (% sorted)	Light Fraction 10-20 mesh (% sorted)	Light Fraction <20 mesh (% sorted)	Charred Flora Recovered, Excluding Wood Charcoal
42-70 cm	44.25	100%	100%	25%	1/2 of a nutmeat, probably from acorn or hazelnut; Cf. Cruciferae (Mustard family), 1 seed apparently charred, but too eroded and fragmented to identify; Unknown, 1 small flat specimen with an interior that was hard and resinous, but appeared charred;
Extension, 42-64 cm	5.0	100%	100%	100%	seed embryo, 1 possibly charred, unidentifiable

10 mesh = .0787 inches / 2 mm; 20 mesh = .0331 inches / 0.8 mm

One charcoal sample from Feature 1 was submitted to Beta Analytic, Inc for AMS dating (Table 62; Appendix C). The age of the sample, 3990 +/- 30 RCYBP (Cal BP 4525 to 4415), is assumed to provide an accurate date for the feature.

Table 62. Site 21CA773 Feature 1 Radiocarbon Date.

Material/ Provenience	Beta Lab No.	$^{13}C/^{12}C$ Ratio (o/oo)	Conventional ^{14}C Age B.P.	2 Sigma Calibrated Results (95% Probability)
Charcoal Feature 1 20-335 cmbs	400915	-26.2 o/oo	3990 +/- 30 BP	Cal BC 2575 to 2465 (Cal BP 4525 to 4415)

12.8 XU 3

XU 3 was placed adjacent to Phase II Shovel Test 103EN5, which yielded eight pieces of FCR. XU 3 is in a swale at an elevation considerably below the road grade. The landscape sloped slightly down to the east. Excavation was terminated at a depth of 50 cmbs because of the absence of artifacts. A shovel test was dug in the base of the unit to a depth of 80 cmbs to ensure no deeply buried artifacts were present. A summary of artifacts from the XUs is presented in Table 63.

Table 63. Site 21CA773 Summary of Artifacts from XU 3.

Depth (cmbs)	Lithic Debris	Lithic Core	FCR	Total	%
0-10	10	-	-	**10**	**53**
10-20	6	1	1	**8**	**42**
20-30	1	-	-	**1**	**5**
30-40	-	-	-	**0**	**0**
40-50	-	-	-	**0**	**0**
Total	**17**	**1**	**1**	**19**	**-**
%	**89**	**5**	**5**	**-**	**100**

<u>Artifact Summary and Vertical Distribution</u>
A total of 19 artifacts were recovered from XU 3, including 17 pieces of lithic debris, one core, and one FCR (Table 63). No diagnostic artifacts were recovered, and no features were identified.

Artifacts were recovered between 0 and 30 cmbs. The zone with the greatest artifact density (95 percent) occurs between 0 and 20 cmbs. Road gravel and a few modern items (a nail, a staple, and a piece of asphalt) were present in the 0 to 10 cmbs level.

<u>Soils and Stratigraphy</u>
The soil horizons from the XU are depicted in a wall profile and photograph in Figures 59 and 60. The soil profile consists of a sandy loam A horizon, overlying loamy sand AB, E, B horizons, and a sand 2C horizon. There is an increase in gravels, cobbles, and sand with depth. The soils appear to be fairly undisturbed, as no modern impacts were observed, and there was only a minimal amount of rodent burrows. There was a minimal to moderate amount of tree roots.

12.9 XUs 4 and 5

XUs 4 and 5 were contiguous units, and the southeast corner of XU 4 was placed adjacent to Phase II Shovel Test 103ES5, which yielded four pieces of lithic debris and one FCR. These units are in a swale at an elevation considerably below the road grade. The landscape sloped fairly moderately down to the east. Excavation was terminated at a depth of 40 cmbs in XU 5 and 50 cmbs in XU 4 because of the lack of artifacts. A shovel tests was dug in the base of the unit to a depth of 80 cmbs to ensure no deeply buried artifacts were present. A summary of artifacts from the XUs is presented in Table 64.

Table 64. Site 21CA773 Artifacts by Count from XUs 4 and 5.

Depth (cmbs)	Lithic Debris	FCR	Lithic Tool	Core	Total	%
0-10	15	2	1	-	**18**	**24**
10-20	16	3	-	-	**19**	**25**
20-30	27	1	-	3	**31**	**41**
30-40	3	2	-	-	**5**	**7**
40-50	-	1	-	1	**2**	**3**
Total	**61**	**9**	**1**	**4**	**75**	**-**
%	**81**	**12**	**1**	**5**	**-**	**100**

Artifact Summary and Vertical Distribution

A total of 75 artifacts were recovered from XUs 4 and 5, including 61 pieces of lithic debris, nine FCR, four cores, and one stone tool (Stage 4 biface) (Table 64). No diagnostic artifacts were recovered, and no features were identified. Road gravel was present in the 0 to 10 cmbs level.

Artifacts were recovered between 0 and 50 cmbs. The zone with the greatest artifact density (41 percent) occurs between 20 and 30 cmbs, with moderate amounts above and below this depth. The vertical distribution of lithic raw materials reveals that the 20 to 40 cmbs levels consist almost exclusively of Swan River Chert and Tongue River Silica lithic debris, while the lithics from 0 to 10 cmbs level consist of about one-third of these materials, the other two-thirds consists of quartz, quartzite, and basalt. This indicates that either there are two components or the 0 to 10 cmbs level includes quartz, quartzite, and basalt road gravels that are indistinguishable from artifacts.

Because a moderate amount of lithic debris and a Stage 4 biface were recovered, a 25 percent sample of soil from the 0 to 30 cmbs levels in XU 5 was water-screened through 1/8” mesh to recover micro debitage. Four SG 4 flakes were recovered from the 1/8” mesh, compared to seven SG 4 flakes recovered from the 1/4" mesh in XU 4.

Soils and Stratigraphy

The soil horizons from the XUs are depicted in a wall profile and photograph in Figures 61 and 62. The soil profile consists of a sandy loam A and AB horizon, overlying a loamy sand E horizon, and a sand BC horizon. The soils appear to be fairly undisturbed, as no modern impacts were observed, and there was only a minimal amount of rodent burrows. There was a minimal to moderate amount of tree roots.

12.10 XUs 6 to 8

XUs 6 to 8 were contiguous units aligned north-south, with the south wall of XU 6 placed adjacent to Phase II Shovel Test 113EN5, which yielded three pieces of lithic debris and three FCR. The landscape was fairly level. Excavation was terminated at a depth of 50 cmbs because of the lack of artifacts below 30 cmbs. A summary of artifacts from the XUs is presented in Table 65.

Table 65. Site 21CA773 Artifacts by Count from XUs 6, 7, and 8.

Depth (cmbs)	Lithic Debris	Lithic Tool	Core	FCR	Faunal	Faunal Thermally Altered	Total	%
0-10	7	1	-	4	24	98	**134**	**76**
10-20	9	-	1	5	11	6	**32**	**18**
20-30	6	-	-	1	-	2	**9**	**5**
30-40	-	-	-	-	-	1	**1**	**1**
40-50	-	-	-	-	-	-	**0**	**0**
Total	**22**	**1**	**1**	**10**	**35**	**107**	**176**	**-**
%	**12**	**1**	**1**	**6**	**20**	**61**	**-**	**100**

Artifact Summary and Vertical Distribution

A total of 176 artifacts were recovered from XUs 6 to 8, including 107 thermally-altered faunal fragments, 35 unmodified faunal fragments, 22 pieces of lithic debris, ten FCR, one core, and one stone tool (utilized flake) (Table 65). No diagnostic artifacts were recovered, and no features were identified. Road gravel was present in the 0 to 10 cmbs level, and it is possible that some of the quartz road gravel is indistinguishable from artifacts, and a few may be included as lithic debris.

Artifacts were recovered between 0 and 40 cmbs, with a significant decrease below 20 cmbs. The zone with the greatest artifact density (76 percent) occurs between 0 and 10 cmbs. The lithic raw material types from each level between 0 and 30 cmbs are similar, and they are probably all from the same occupation.

A radiocarbon date on calcined bone (see Section x.x below) provided an historic age, ranging from AD 1650 to Post 1950 (contact period, post-contact period, or modern). Given the absence of contact period artifacts, it is likely that the fauna is post-contact or modern. However, it is possible some of the fauna is associated with the precontact component.

A historic or modern age for one of the components is also supported by styrofoam pieces that were present from 0 to 10 cmbs in all units and a glass medicine bottle (c. 1900-1940) that was found in XU 7 from 0 to 10 cmbs. The calcined bone are not necessarily associated with the FCR, given that typically the FCR at the other sites identified for this project do not have any associated faunal material. It is notable that the fauna were mostly recovered from 0 to 10 cmbs, while FCR and lithics are more numerous below 10 cmbs, even though they do occur from 0 to 10 cmbs.

With the exception of one calcined fish bone, all the calcined remains from these units and adjacent Shovel Tests 113E, 113EN5, and 114ES5 are large and medium/large mammal remains, with small fragments identified only as mammalian. The non-calcined bones include a variety of fauna including deer, fish, bird, turtle, clam shell, and mammal. It is suspected that some or all of these remains are a post-1900 refuse deposit, based on the medicine bottle that was recovered in association with them. Also, it is possible that some of the non-thermally altered fauna could be road kill, given that Interlachen Road / CSAH 77 has been in existence for about 75 years.

Soils and Stratigraphy

The soil horizons from the XUs are depicted in a wall profile and a photograph in Figures 63 and 64. The soil profile consists of a sandy loam A horizon, overlying loamy sand AB and B horizons and a sand BC horizon. The soils appear to be fairly undisturbed (with the exception of road gravel near in the upper levels of the units), as no modern impacts were observed. Rodent burrows and tree roots were generally minimal, but were moderate in some levels.

One calcined bone sample from 0 to 10 cmbs in XU 6 was submitted to Beta Analytic, Inc for AMS dating (Table 66; Appendix C). The age of the sample was 200 +/- 30 RCYBP (Cal AD 1650 to 1685 (Cal BP 300 to 265) and Cal AD 1730 to 1810 (Cal BP 220 to 140) and Cal AD 1925 to Post 1950 (Cal BP 25 to Post 0).

Table 66. Site 21CA773 XU 6 to 8 Radiocarbon Date.

Material/ Provenience	Beta Lab No.	$^{13}C/^{12}C$ Ratio (o/oo)	Conventional ^{14}C Age B.P.	2 Sigma Calibrated Results (95% Probability)
Calcined bone XU 6 0-10 cmbs	400913	-26.3 o/oo	200 +/- 30 BP	Cal AD 1650 to 1685 (Cal BP 300 to 265) and Cal AD 1730 to 1810 (Cal BP 220 to 140) and Cal AD 1925 to Post 1950 (Cal BP 25 to Post 0)

12.11 XUs 9 and 10

XUs 9 and 10 were contiguous units, with the west wall of XU 10 placed adjacent to Phase I Shovel Test 66W, which yielded five pieces of lithic debris. The landscape sloped slightly down to the southeast. Excavation was terminated at a depth of 60 cmbs because of the absence of artifacts below 40 cmbs. A shovel test was placed in the base of the units and dug to 85 cmbs to examine the soils and ensure that no archaeological deposits were present below the depth of excavation. A summary of artifacts from the XUs is presented in Table 67.

Table 67. Site 21CA773 Summary of Artifacts from XUs 9 and 10.

Depth (cmbs)	Lithic Debris	Lithic Tool	FCR	Total	%
0-10	-	-	-	**0**	**0**
10-20	7	1	-	**8**	**25**
20-30	20	-	2	**22**	**69**
30-40	2	-	-	**2**	**6**
40-50	-	-	-	**0**	**0**
50-60	-	-	-	**0**	**0**
Total	**29**	**1**	**2**	**32**	**-**
%	**91**	**3**	**6**	**-**	**100**

Artifact Summary and Vertical Distribution

A total of 32 artifacts were recovered from XUs 9 and 10, including 29 pieces of lithic debris, two FCR, and a stone tool (graver) (Table 67). No diagnostic artifacts were recovered, and no features were identified. Artifacts were recovered between 10 and 40 cmbs. The zone with the greatest artifact density (69 percent) occurs between 20 and 30 cmbs, with a smaller amount of artifacts from 10 to 20 cmbs and a notable decrease below 30 cmbs.

Modern soils disturbances were very apparent in these units and were recorded on the unit level forms and profiles. XU 9 had moderate soil disturbance from 0 to 10 cmbs and minimal disturbances from 10 to 20 cmbs. Below 20 cmbs, the XU 9 soils were relatively undisturbed. XU 10 had moderate to extensive modern soil disturbances from 0 to 30 cmbs, with disturbance in the eastern portion extending to 60 cmbs. Disturbance in these units was primarily from a buried utility trench located on the east side of the units. The number of artifacts from each unit was similar, and those from XU 10 were mostly from disturbed soils.

Soils and Stratigraphy

The soil horizons from the XUs are depicted in a wall profile and a photograph in Figures 65 to 68. The soil profile consists of a sandy loam A horizon, overlying a loamy sand B horizon and gravelly sand BC and 2C horizons. There is a notable increase in gravel and cobbles below 40 cmbs. Rodent burrows were minimal, and tree roots varied from minimal to moderate.

12.12 XUs 11 and 12

XUs 11 and 12 were contiguous units, placed adjacent to Phase I Shovel Test 75W, which yielded three pieces of lithic debris. The landscape was fairly level. Excavation was terminated at a depth of 50 cmbs because of the absence of artifacts below 30 cmbs. A summary of artifacts from the XUs is presented in Table 68.

Table 68. Site 21CA773 Summary of Artifacts from XUs 11 and 12.

Depth (cmbs)	**FCR**	**Total**	**%**
0-10	2	**2**	**40**
10-20	2	**2**	**40**
20-30	1	**1**	**20**
30-40	**-**	**0**	**0**
40-50	**-**	**0**	**0**
Total	**5**	**5**	**-**
%	**100**	**-**	**100**

Artifact Summary and Vertical Distribution
Five FCR were recovered from XUs 11 and 12 (Table 68). No diagnostic artifacts were recovered, and no features were identified. Road gravel was present in the 0 to 10 cmbs level. Artifacts were recovered between 0 and 30 cmbs. The zone of greatest artifact density (80 percent) occurs between 0 and 20 cmbs. The similar artifact types and vertical distribution suggests the artifacts are from a single component.

Soils and Stratigraphy
The soil horizons from the XUs are depicted in a wall profile and a photograph in Figures 69 and 70. The soil profile consists of a silt loam A horizon, overlying a sandy loam E horizon, loamy sand B horizon, and gravelly sand 2C horizon. The soils appear to be fairly undisturbed, as no modern impacts were observed, and there was only a minimal amount of rodent burrows. There was a minimal to moderate amount of tree roots.

12.13 Artifact Summary

A total of 768 artifacts, weighing 11,348.1 grams, were recovered from the site during the Phase I and Phase II investigations (Table 69). FCR was the most abundant artifact type by count, followed by lithics and faunal material. By weight, FCR was by far the most abundant artifact. However, most FCR at the site were recovered from Feature 1 and the adjacent XUs 1 and 2.

Table 69. Site 21CA773 Summary of Artifacts.

Artifact Type	**Total by Count (Weight g)**	**% by Count (Weight g)**
FCR	**390 (10,811.9)**	**51 (95)**
Lithic	**225 (490.7)**	**29 (4)**
Faunal	**153 (45.5)**	**20 (<1)**
Total	**768 (11,348.1)**	**-**
%	**-**	**100**

12.14 Lithic Analysis

The lithic assemblage consists of 225 artifacts, including 213 pieces of lithic debris, six cores, and six stone tools (Table 70). A variety of flake types, cores, and lithic materials are present in the assemblage, which is discussed below.

Size grade counts for the lithic debris were as follows: SG1$\geq$ 1.0 inch (n=2; <1%); SG2 <1.0 inch to $\geq$0.5 inch (n=39; 18%); SG3 <0.5 inch to $\geq$0.233 inch (n=134; 63%); and SG4 < 0.233 inch (n=38; 18%). Two Lake Superior Agate lithics showed evidence of excessive heating, as indicated by crazing and potlid fractures. A total of 65 lithic artifacts were heat treated, and most of these were Tongue River Silica and Swan River Chert. The amount of cortex on lithic debris is as follows: 0% cortex (n=159; 75%); >0 to <50% (n=18; 8%); 50 to <100% (n=16; 8%); and 100% (n=20; 9%).

Table 70. Site 21CA773 Lithic Artifacts by Material, Flake, and Tool/Core Types.

Material	Nonbifacial Flake	Decortication	Bipolar Flake	Other Grade 4	Shatter	Broken Flake	Edge Preparation	Bifacial Thinning	Bifacial Shaping	Tool/Core	Total	%
Quartz	4	4	7	10	20	18	-	1	-	2 bipolar cores	**66**	**29**
Swan River Chert	2	3	-	10	-	11	-	6	3	-	**35**	**16**
Tongue River Silica	3	4	2	4	1	6	-	5	-	3 freehand nonbifacial cores; 1 side scraper 1 stage 4 biface	**30**	**13**
Quartzite	4	1	4	3	2	14	-	-	-	-	**28**	**12**
Basaltic	8	1	1	-	-	13	1	-	-	-	**24**	**11**
Knife Lake Siltstone	1	-	-	1	-	2	-	9	-	1 utilized flake	**14**	**6**
Lake Superior Agate	2	-	1	-	1	3	-	-	-	1 freehand nonbifacial core; 1 utilized flake	**9**	**4**
Unid. material	1	-	1	-	-	4	-	-	-	1 graver	**7**	**3**
Rhyolite	1	-	-	1	-	1	-	-	-	-	**3**	**1**
Unid. chert	-	-	-	1	1	-	-	-	-	-	**2**	**1**
Igneous	1	-	-	-	-	1	-	-	-	-	**2**	**1**
Animikie Silica	-	1	-	-	-	-	-	-	-	-	**1**	**<1**
Gunflint Silica	-	-	-	1	-	-	-	-	-	-	**1**	**<1**
Hudson Bay Lowland Chert	-	-	-	-	-	-	-	-	-	1 utilized flake	**1**	**<1**
Chalcedony	-	-	-	-	-	-	1	-	-	-	**1**	**<1**
Prairie du Chien Chert (oolitic)	-	-	-	-	-	1	-	-	-	-	**1**	**<1**
Total	**27**	**14**	**16**	**31**	**25**	**74**	**2**	**21**	**3**	**12**	**225**	**-**
%	**12**	**6**	**7**	**14**	**11**	**33**	**1**	**9**	**1**	**5**	**-**	**100**

Flake Types

The wide variety of flake types in the assemblage indicates a range of lithic-reduction technologies and stages. Diagnostic flake types, along with their associated technologies and stages of reduction, are summarized in Table 71. Nonbifacial, bifacial, and bipolar technologies are well represented. The assemblage includes lithics primarily from the early and middle stages of reduction. Additional supporting evidence for the various technologies includes: 1) two bipolar cores and a utilized flake on a bipolar flake are indicative of bipolar technology; and 2) four nonbifacial cores and a graver on a blade are indicative of nonbifacial technology. Types of lithic debris that are not indicative of specific technologies or reduction-stages comprise the largest portion of the assemblage and include broken and other SG4 flakes. These nondiagnostic flake types are not included in Table 71.

Table 71. Site 21CA773 Summary of Diagnostic Flake Types, Technologies, and Reduction Stages.

Count & Flake Type	Technology	Stage of Reduction
16 - Bipolar flakes	Bipolar	N/A
14 - Decortication flakes	Nonbifacial	Earliest stage of core reduction
27- Nonbifacial flakes	Nonbifacial	Cobble testing, reducing unprepared nonbifacial cores for flake blank production, and the early stages of nonbifacial tool reduction (early to middle-stages of reduction)
21 - Bifacial thinning flake	Bifacial	Early to middle-stage of reduction
3 - Bifacial shaping flake	Bifacial	Late-stage of reduction (final shaping or tool maintenance)
25 - Shatter	N/A	Mostly from cobble testing, core reduction, and earlier stages of reduction

Lithic Material Types and Use

Lithic materials consist primarily of quartz (29%), Swan River Chert (16%), Tongue River Silica (13%), quartzite (12%), and basaltic (11%), with a wide range of other materials that comprise six percent or less of the assemblage. Nearly all of the materials are locally available. The unidentified chert and unidentified materials may be local or exotic. The decortication flake of unidentified chert suggests a local acquisition for that material. The only conclusively non-local material is a single flake of Prairie du Chien Chert (oolitic), which is a material from south-central or southeastern Minnesota.

Although the lithic data is sparse, there are some patterns of differential material use that are indicated by the raw material debris profiles. The quality of the raw material, cobble size, and material abundance are likely the primary factors in the use patterns. The most notable lithic use characteristics are discussed below for those materials that have adequate sample sizes of diagnostic flakes. However, most materials lack an adequate sample size.

Quartz occurs in a wide variety of flake types, but primarily as broken flakes, shatter, Other G4, bipolar flakes, and nonbifacial flakes, with only one flake from bifacial technology. The use of quartz was likely limited by its flaking qualities. Swan River Chert and Tongue River Silica occur in a wide variety of flake types, and are notably well represented in bifacial flake types (thinning and shaping). Quartzite and basalt occurs mostly as broken and nonbifacial flakes.

Stone Tools

Six stone tools were recovered, including a Stage 4 biface (late-stage), three utilized flakes, a scraper, and a graver. Utilized flakes are primarily light-duty cutting and slicing tools used on animal remains, wood, and plants. Scrapers are typically associated with scraping tasks on a variety of soft materials (meat, hides, and plant material) or moderately resistant materials (wood and bone). Gravers are deliberately formed tools that have a short spur projecting from the tool edge, which was often created by pressure flaking. They are typically used for shallow engraving or incising of bone or wood. These tools suggest that the following activities occurred: animal butchering, animal/plant processing, hide working, and bone and woodworking.

The Stage 4 biface appears to be a projectile point preform and could have been used as a cutting tool. It is made from heat treated Tongue River Silica and was recovered in XU 4 from 0 to 10 cmbs (Figure 71; Catalog # 2016.77.36.9). It has broad percussion flakes on both faces, and pressure flaking along some of the margins on both faces. The base has been thinned by percussion flakes. There is one thicker area where biface thinning was not finished. In cross-section, the point has a thick, asymmetrical lenticular shape. The biface is 43.1 mm long, the maximum width is 22.3 mm, and the thickness is 10.1 mm.

Cores

Six cores were recovered, including two bipolar cores (quartz) and four freehand nonbifacial cores (three of Tongue River Silica and one of Lake Superior Agate). The freehand cores have unpatterned flaking and unprepared platforms.

12.15 FCR

Of the 390 FCR recovered at the site, most (n=320) were from Feature 1 and the adjacent XUs 1 and 2 and Shovel Test 109EN5. This FCR data was previously presented in Section 12.7. A total of 70 FCR were recovered from other shovel Tests and XUs in scattered locations across the site. These FCR are mostly small-sized pieces, with 94 percent being SG1 or less (Table 72). Angular-fractured pieces were the most numerous FCR type at 61 percent, followed by spalls and angular/spall types. Most of the FCR is granitic (44%) and basaltic (24%), with smaller amounts of quartzite, unidentified, and metamorphic rocks.

Table 72. Site 21CA773 FCR Count by Material, Size, and Type. Excluding Feature 1, XUs 1 and 2 and Shovel Test 109EN5.

Material	Size Grade (SG)				FCR Type					Total	%
	0	1	2	3	Angular	Split Cobble	Angular/Spall	Spall	Cobble with Spall		
Granitic	2	13	12	4	19	-	5	6	1	**31**	**44**
Quartzite	1	3	4	2	5	1	2	2	-	**10**	**14**
Metamorphic	-	-	1	1	2	-	-	-	-	**2**	**3**
Unid. Material	1	2	5	2	4	-	1	5	-	**10**	**14**
Basaltic	-	8	6	3	13	--	1	3	-	**17**	**24**
Total	**4**	**26**	**28**	**12**	**43**	**1**	**9**	**16**	**1**	**70**	**-**
%	**6**	**37**	**40**	**17**	**61**	**1**	**13**	**23**	**1**	**-**	**100**

12.16 Faunal Analysis

Only a small amount of faunal material was recovered (Table 73), and nearly all of it (151 of the 153 faunal fragments) was recovered from contiguous units XUs 6, 7, and 8 and the adjacent Shovel Tests 113E, 113EN5, and 144ES5. The radiocarbon date on the faunal material from XU 6 is historic period, ranging from AD 1650 to Post 1950 (contact, post-contact, or modern). Given the absence of contact period artifacts, it is likely that the fauna is post-contact or modern. However, it is possible some of the fauna is associated with the precontact component. It is suspected that some or all of these remains are a post-1900 refuse deposit, based on the medicine bottle that was recovered in association with them. The remains from this location included deer, fish, bird, turtle, clam shell, medium to large mammal, large mammal, and mammalian. The small size and fragmentary condition of many of the remains do not allow for specific identification of species or element. Two faunal fragments are from Shovel Test 124ES7, and these are medium to large mammal.

Table 73. Site 21CA773 Faunal Material by Count and Weight (g).

Class	Unmodified Count (Weight)	Thermally Altered Count (Weight)	Total by Count (Weight)	% by Count (Weight)
Mammalian	11 (1.9)	102 (22.1)	**113 (24)**	**74 (53)**
Bird	19 (1.5)	-	**19 (1.5)**	**12 (3)**
Mammalian, large	-	9 (9.2)	**9 (9.2)**	**6 (20)**
Mammalian, medium/large	2 (1.4)	2 (7.8)	**4 (9.2)**	**3 (20)**
Mish	2 (0.3)	2 (0.4)	**4 (0.7)**	**3 (2)**
Shell	2 (0.2)	-	**2 (0.2)**	**1 (<1%)**
Odocoileus virginianus (white-tailed deer)	1 (0.4)	-	**1 (0.4)**	**1 (1)**
Turtle	1 (0.3)	-	**1 (0.3)**	**1 (1)**
Total	**38 (6.0)**	**115 (39.5)**	**153 (45.5)**	**-**
%	**25 (13)**	**75 (87)**	**-**	**100**

12.17 Conclusions and Recommendations

Site 21CA773 is a multicomponent site that consists of a large, precontact period artifact scatter and habitation. One of the precontact occupations included a Late Archaic earthen oven feature that dated to ca. 3900 RCYBP (cal. 4500 BP). Given the large size of the site and the abundant precontact occupations in the area, there were probably multiple precontact occupations, perhaps extending over thousands of years. However, the age and cultural affiliation of the other precontact occupations are unknown because of the absence of diagnostic artifacts or dateable materials.

Artifact density was very low, except at two locations where higher densities were present, including: XUs 1 and 2 that had an earthen oven feature with a moderate amount of FCR; and XUs 6 to 8 that contained faunal material, FCR, and lithic debris.

The artifact assemblage includes FCR, lithic debris, cores, stone tools, and faunal material. No diagnostic artifacts were recovered. The most widespread site activity was low-intensity, lithic reduction, and most of the site area is best classified as a sparse lithic scatter. However, FCR was also recovered from many tests across the site area, indicating habitation activities associated with heating and cooking. However, except in one location, the FCR is not associated with faunal material. Most of the FCR was recovered from Feature 1 and adjacent XUs 1 and 2. Charred botanical materials in the feature included nutmeat (acorn or hazelnut), which may be subsistence remains. Feature 1 is interpreted to be an earthen oven.

Lithic raw materials at the site consist of locally available materials, with quartz being the most abundant. Lithic debris and cores from the site indicate nonbifacial, bifacial, and bipolar technologies are well represented. The assemblage primarily includes lithics from the early and middle stages of reduction. A small amount of stone tools were recovered, including a late-stage biface, utilized flakes, a scraper, and a graver, indicating that site activities likely included animal butchering, animal/plant processing, hide working, and bone and woodworking.

There is not any obvious patterning to the horizontal distribution of artifacts, with the exception of Feature 1. Also, there is a lack of meaningful vertical artifact patterning that could provide information on site components, as most artifacts were recovered from 0 to 30 cmbs.

Although the archaeological deposits appear to be mostly undisturbed, the research potential of the site is low because of a very limited artifact assemblage, low artifact density, and lack of diagnostic artifacts or dateable material. Most of Feature 1 was excavated, and its information potential was exhausted by the Phase II excavation. The site is not capable of providing information important to relevant research themes under NRHP Criterion D (See Section 2.3 Research Themes). The site is recommended not eligible for listing on the National Register of Historic Places because it does not meet National Register Criteria A, B, C, or D. No further archaeological work is recommended at the site.

Figure 51. Site 21CA773 Map on Air Imagery.

Figure 52. Site 21CA773 Photo from North End of the Site, Facing South from CSAH 77.

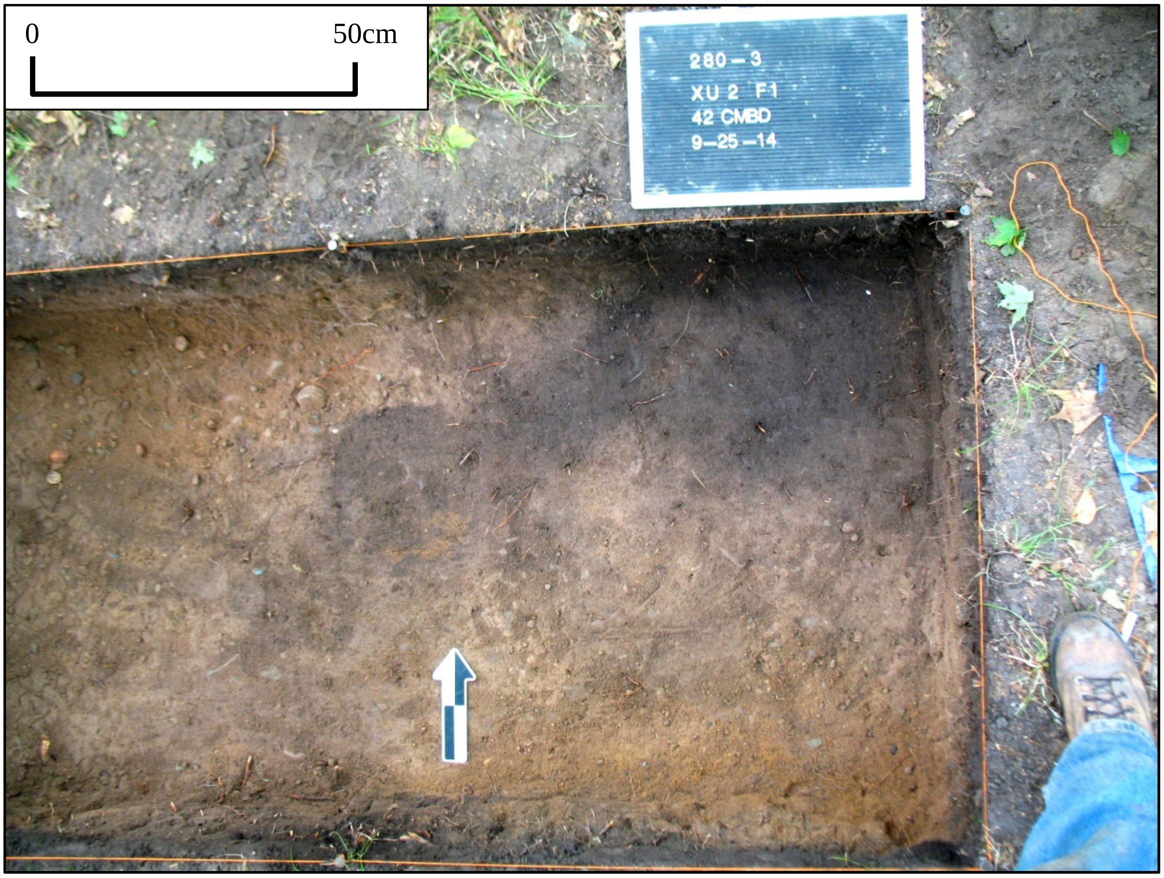


Figure 53. Site 21CA773 Photo Feature 1 Planview at 42 cmbd.

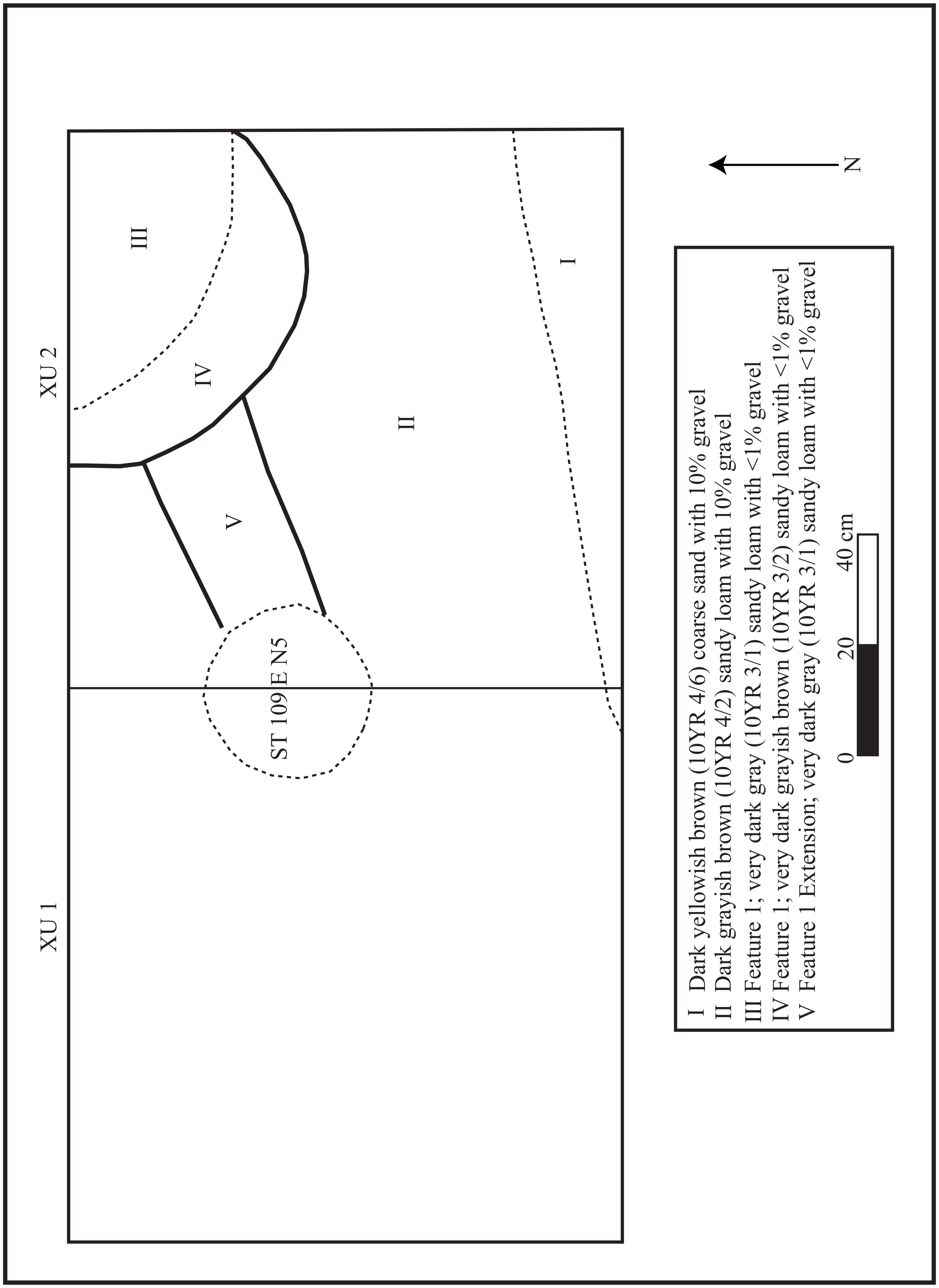


Figure 54. Site 21CA773 Feature 1 Planview at 42 cmbd.

Figure 55. Site 21CA773 Photo Feature 1 Profile and XU 1 and 2 North Wall Profile.

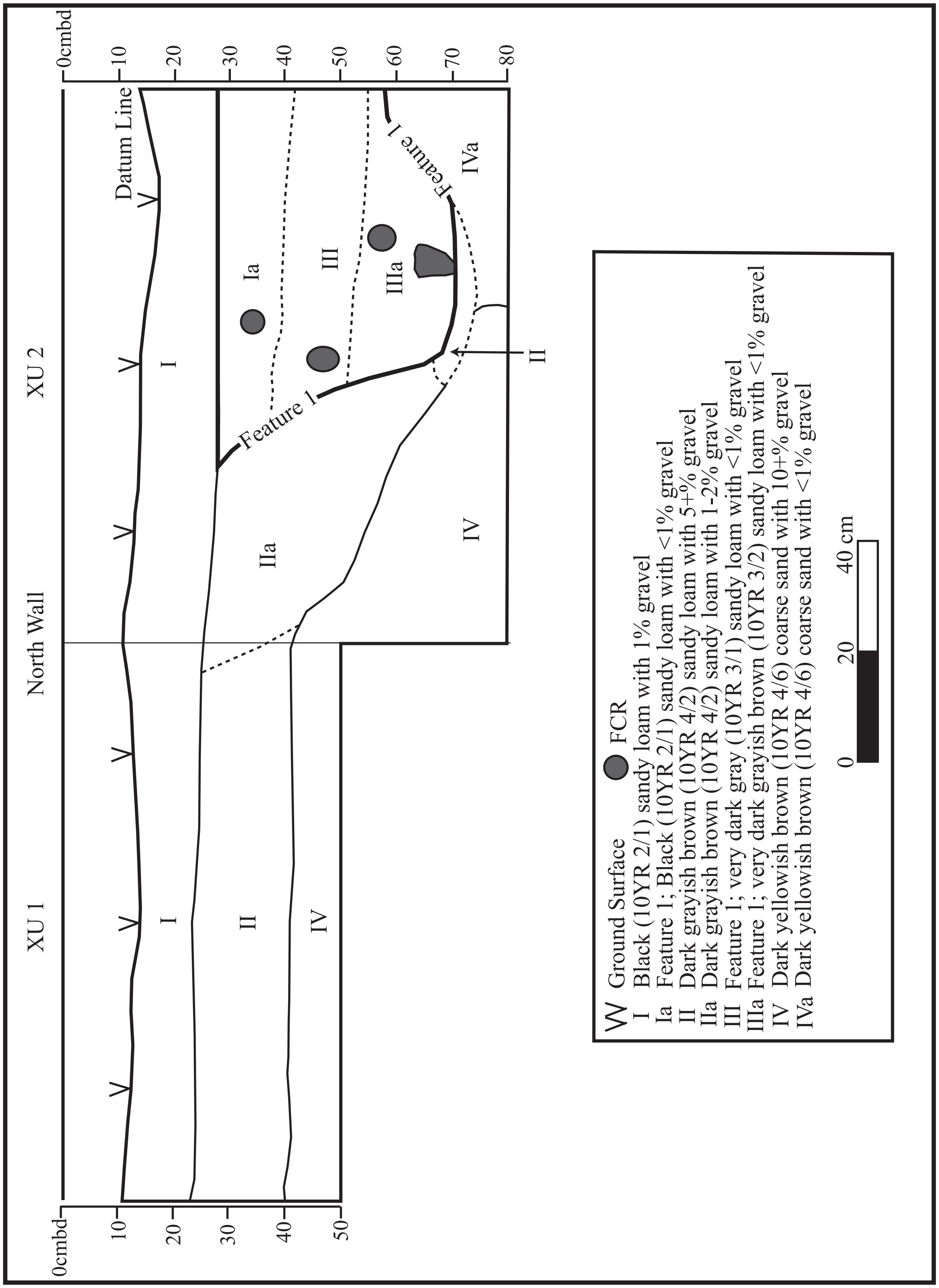


Figure 56. Site 21CA773 Feature 1 Profile and XUs 1 and 2 North Wall Profile.

Figure 57. Site 21CA773 Photo Feature 1 Profile and XU 2 East Wall Profile (note oxidized soil).

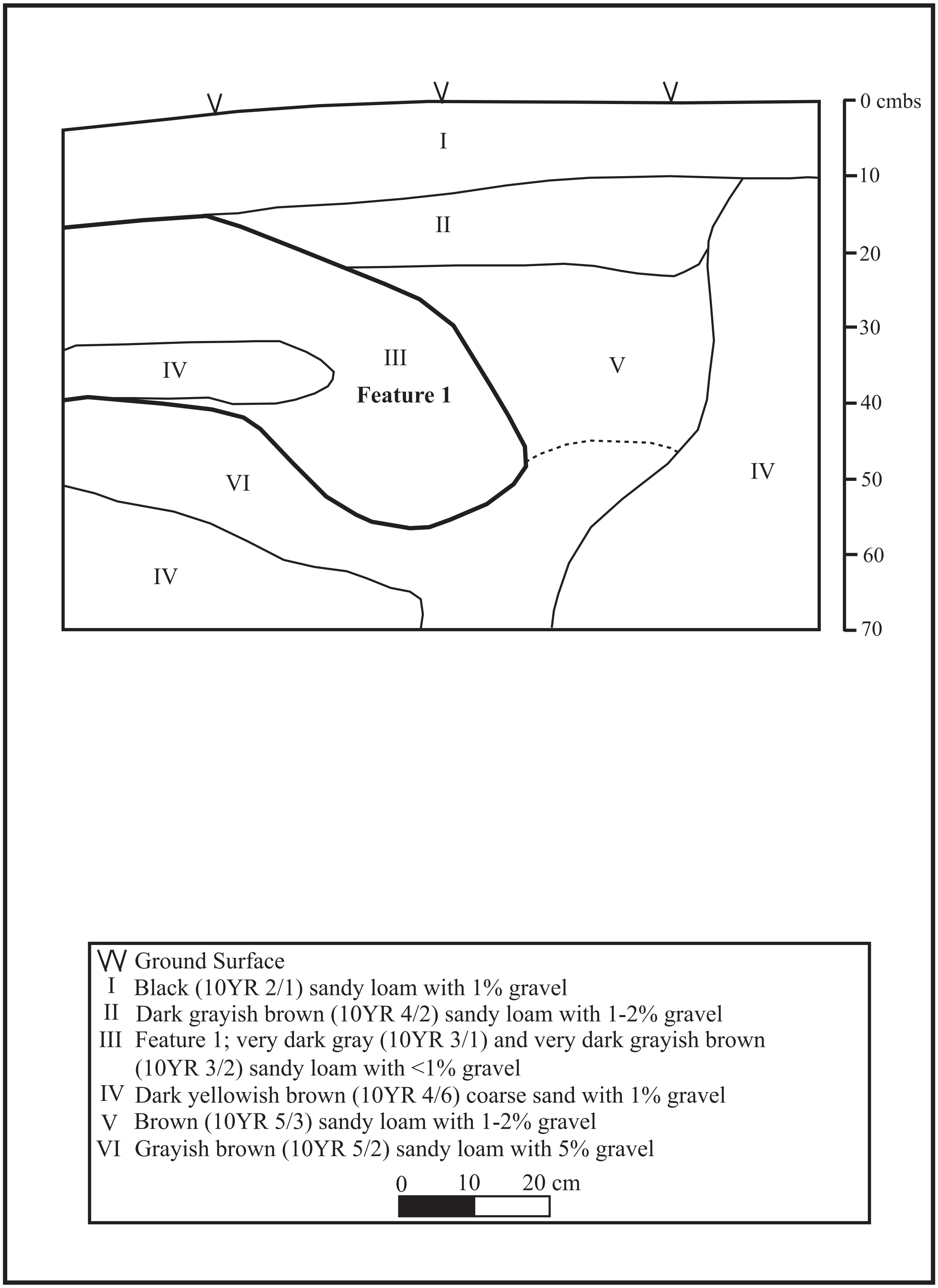


Figure 58. Site 21CA773 Feature 1 Profile and XU 2 East Wall Profile.

Figure 59. Site 21CA773 Photo XU 3 North Wall Profile.

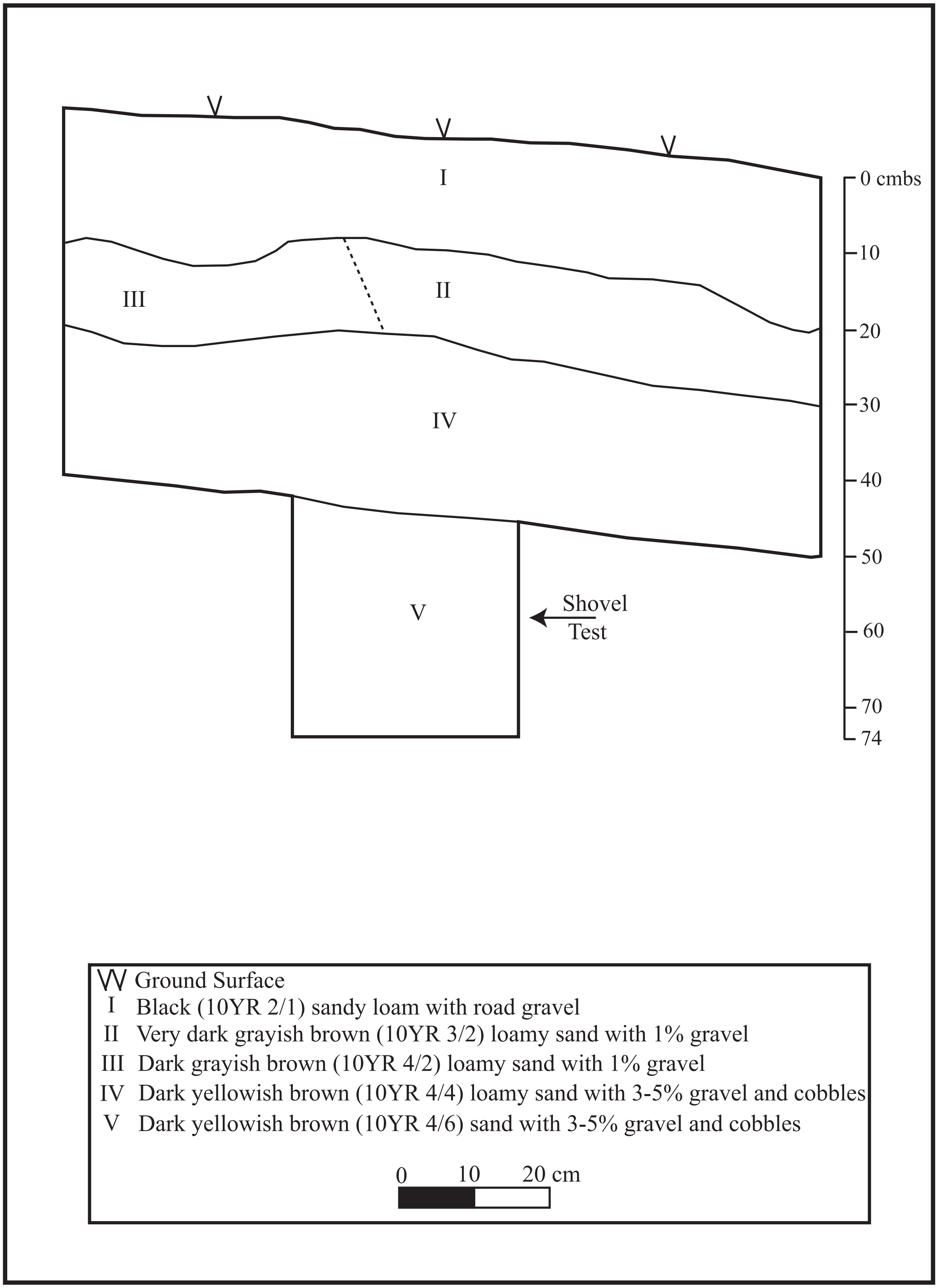


Figure 60. Site 21CA773 XU 3 North Wall Profile.

Figure 61. Site 21CA773 Photo XUs 4 and 5 North Wall Profile.

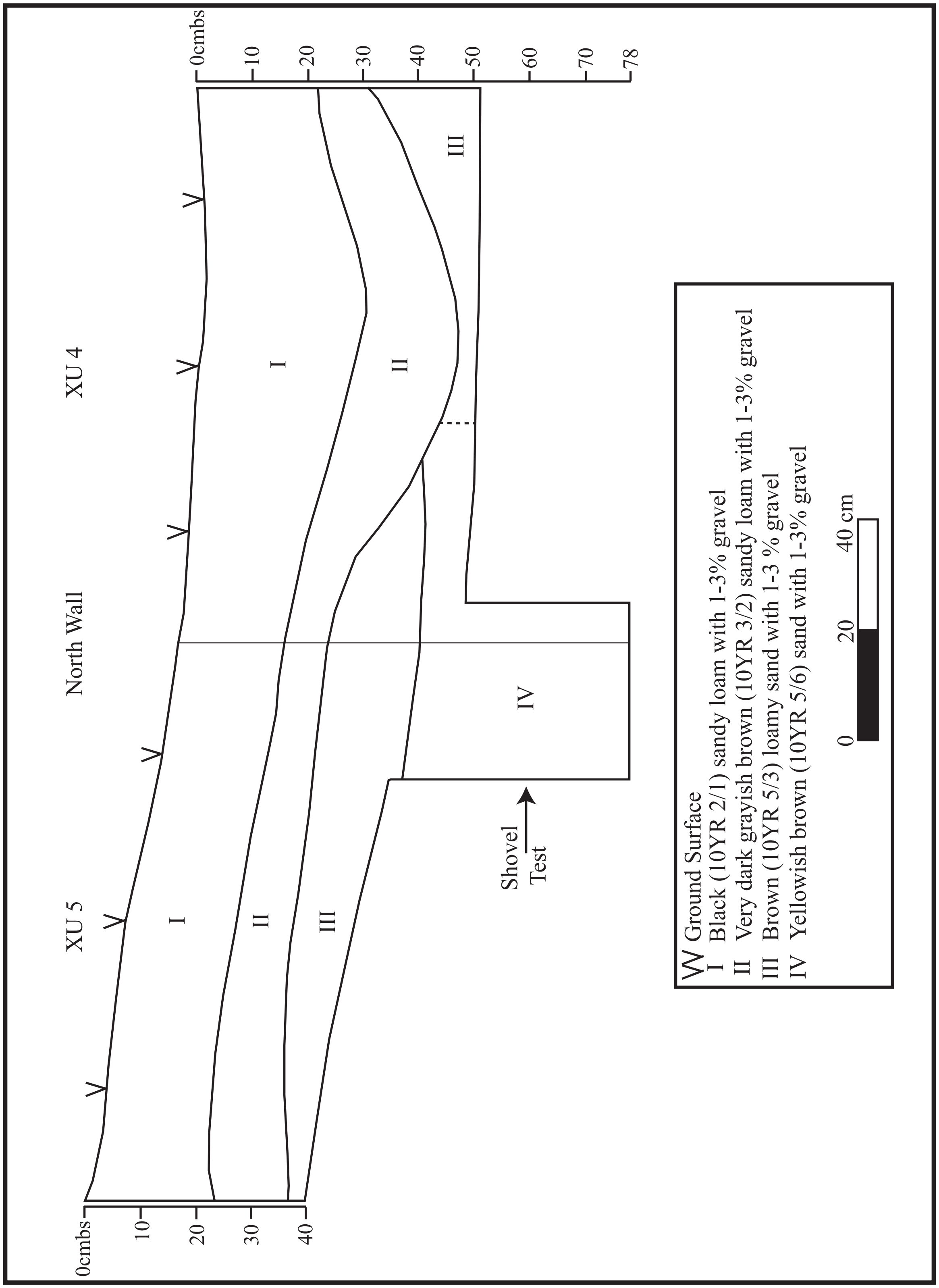


Figure 62. Site 21CA773 XUs 4 and 5 North Wall Profile.

Figure 63. Site 21CA773 Photo XUs 6 to 8 West Wall Profile.

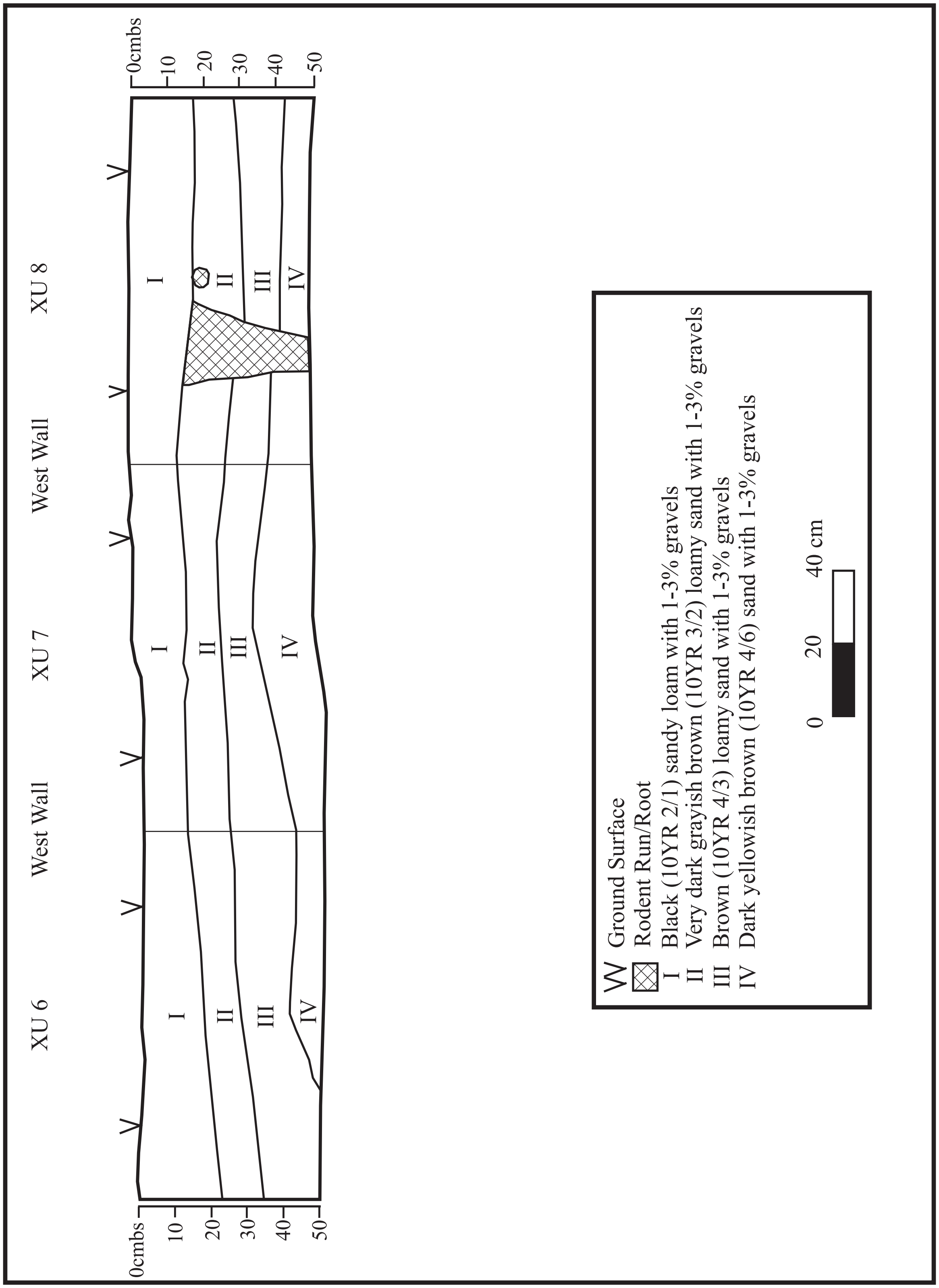


Figure 64. Site 21CA773 XUs 6, 7, and 8 West Wall Profile.

Figure 65. Site 21CA773 Photo XUs 9 and 10 West Wall Profile.

Figure 66. Site 21CA773 Photo XU 10 North Wall Profile.

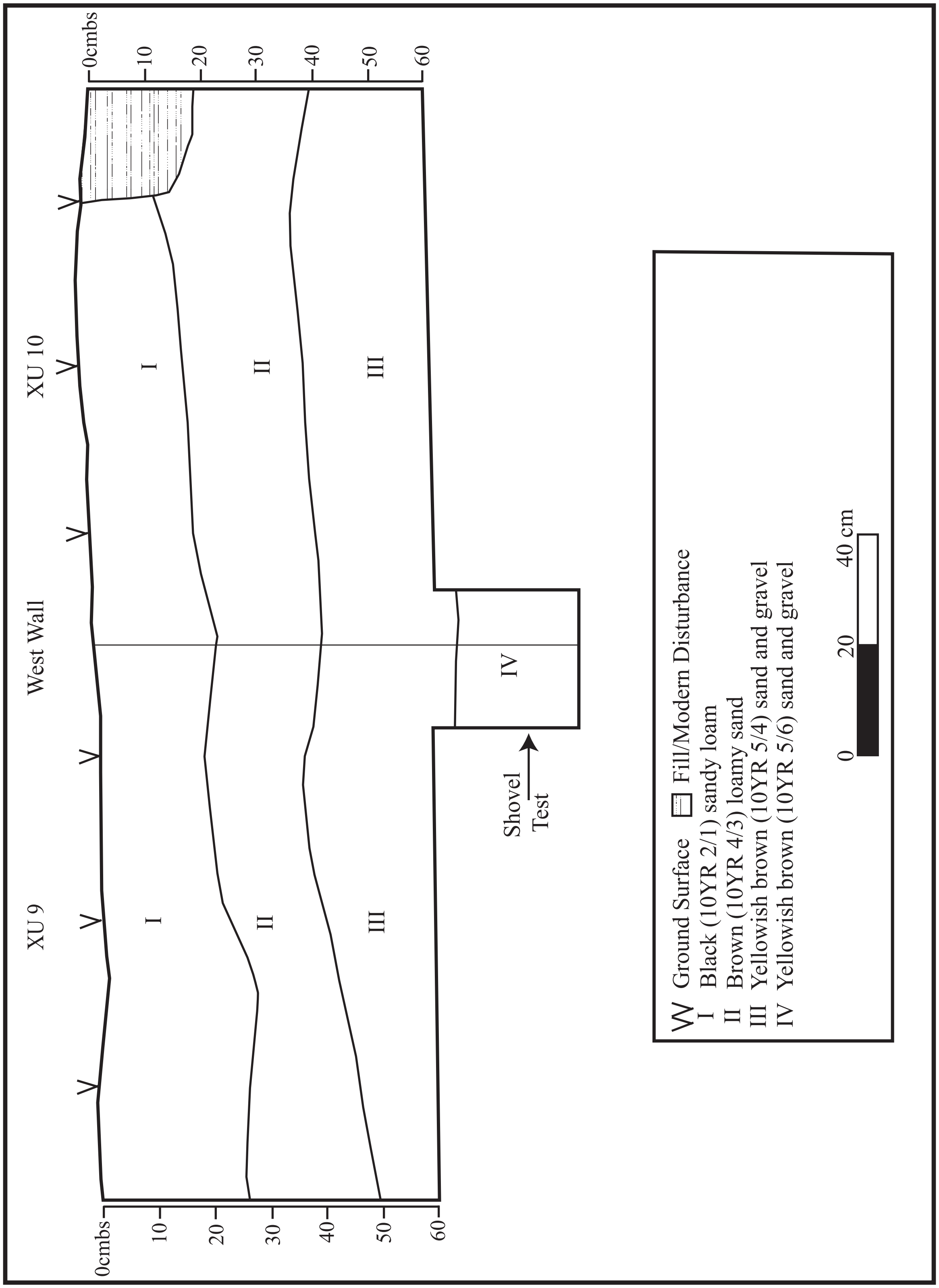


Figure 67. Site 21CA773 XUs 9 and 10 West Wall Profile.

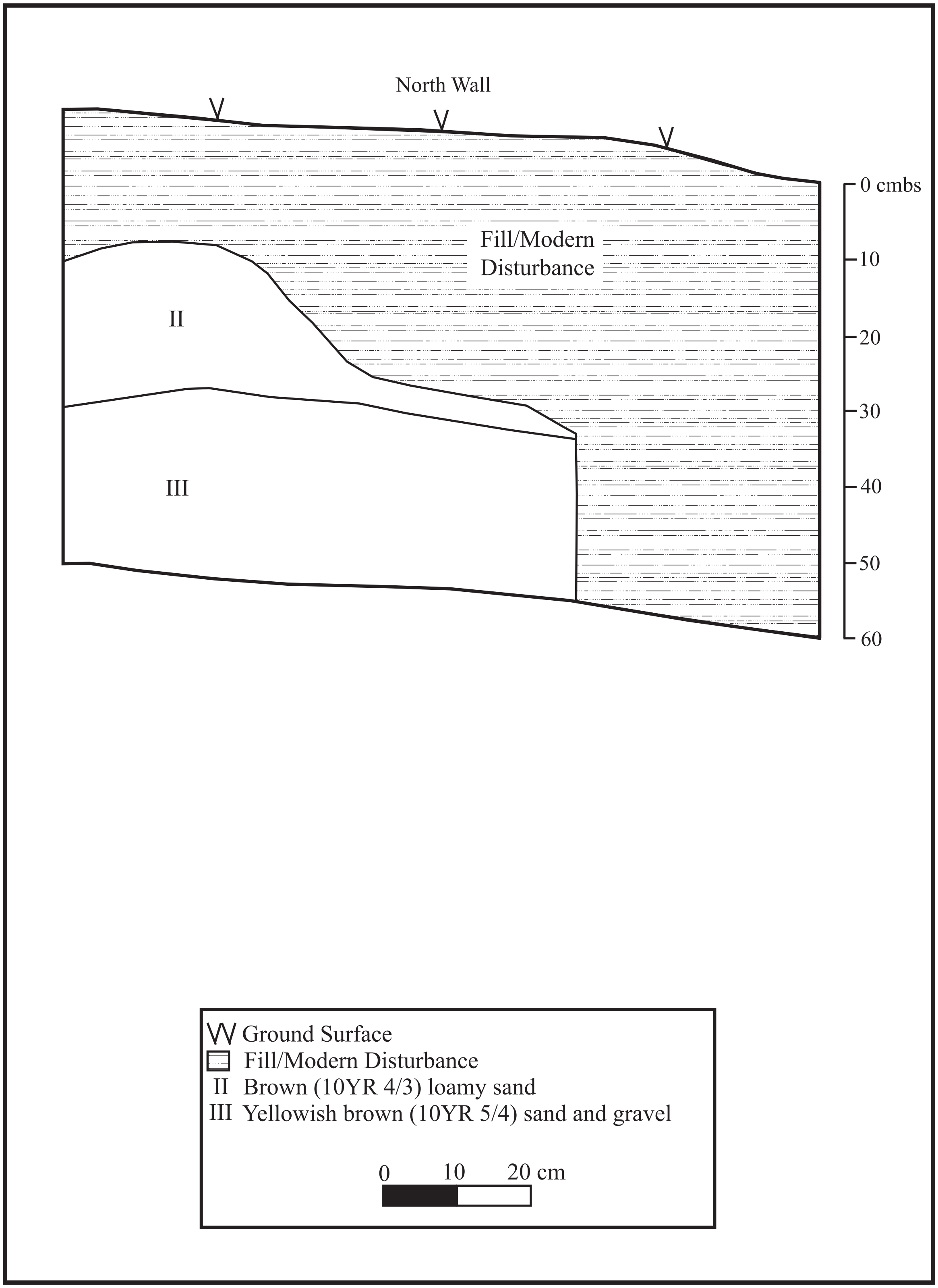


Figure 68. Site 21CA773 XU 10 North Wall Profile.

Figure 69. Site 21CA773 Photo XUs 11 and 12 East Wall Profile.

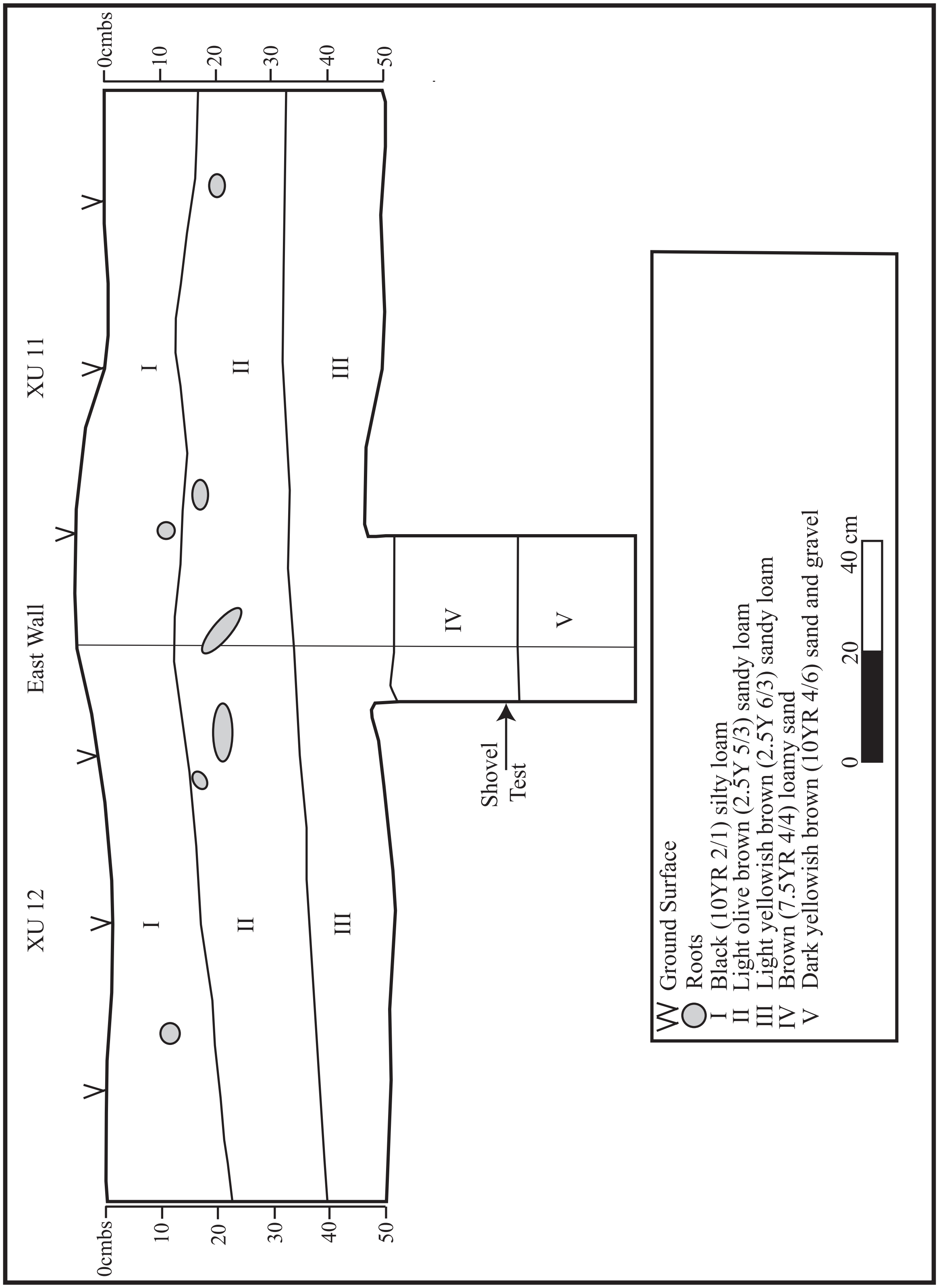
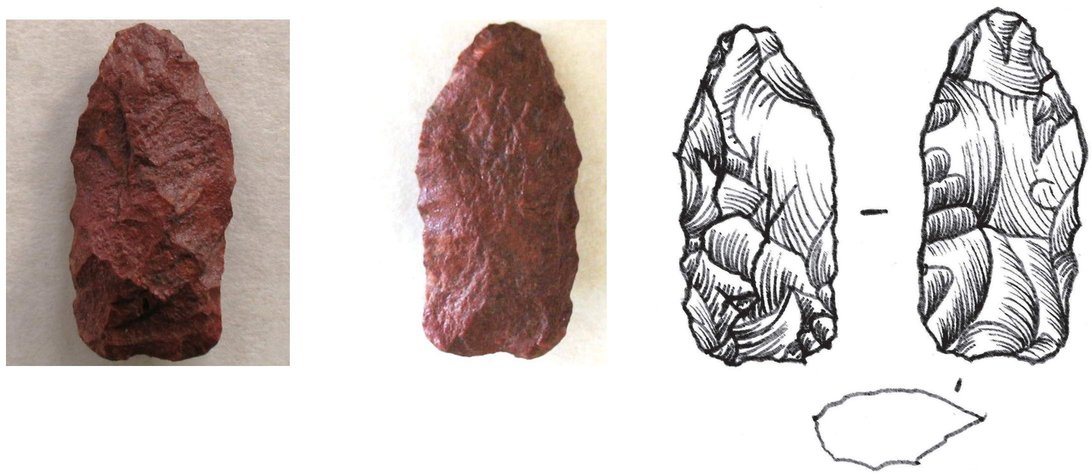


Figure 70. Site 21CA773 XUs 11 and 12 East Wall Profile.



Catalog # 2016.77.36.9 XU 4 (0-10 cmbs); unfinished biface, stage 4, unfinished/whole, Tongue River Silica

Figure 71. Site 21CA773 Photo and Illustration of Late Stage Biface from XU 4.

13. SITE 21CA774

13.1 Overview

Site 21CA774 is large, precontact habitation that contains Initial Woodland (Brainerd Complex), Terminal Woodland, and other undefined components. The site is in T135N, R29W, E1/2 Section 20 (Figures 1 and 2) and is 1,230 by 20 meters in size, encompassing 6.1 acres. UTM coordinates are E396040 N5150025 for the north end and E395625 N5148990 for the south end (1983 NAD Zone 15). A map of the site on aerial imagery is presented in Figure 72. Photos of the site are in Figures 73 and 74. All figures are contained at the end of this section. The survey corridor, centered on the existing CSAH 77 centerline, was 20 meters wide (66 feet).

13.2 Physical Setting and Soils

The site extends along the east and west sides of CSAH 77. The north end of the site is about 120 meters south of Robinhood Way and the south end is about 530 meters north of Archer Road. The site ranges from 200 to 460 meters east of Lake Margaret and from 70 to 150 meters west of Gull Lake. The site is situated on level to rolling terrain that is mostly wooded with a few residential lawns. There was no surface visibility.

Soils at the site are mapped as Graycalm loamy sand (Web Soil Survey 2015). These soils are somewhat excessively drained and formed in formed in sandy glaciofluvial deposits on outwash plains, glacial drainage channels, moraines, kames, and stream terraces.

13.3 Radiocarbon Dating

A radiocarbon date was obtained from a charcoal sample in a feature (Table 74). The age of the charcoal sample is 1190 +/- 30 BP (cal. 1225 to 1010 BP), dating to the time of the Transitional Woodland or early Late Woodland Blackduck-Kathio complexes.

Table 74. 21CA774 Radiocarbon Date.

Site and Provenience	Material	Beta Lab No.	$^{13}C/^{12}C$ Ratio (o/oo)	Conventional ^{14}C Age BP RCYBP	2 Sigma Calibrated Results (95% Probability)
21CA774 F1 20-35 cmbs	Wood charcoal (charred material)	42507	-24.1 o/oo	1190 +/- 30 BP	Cal AD 725 to 740 (Cal BP 1225 to 1210) and Cal AD 770 to 895 (Cal BP 1180 to 1055) and Cal AD 925 to 940 (Cal BP 1025 to 1010)

13.4 Phase I Survey Methods and Results

The site was first identified during shovel testing at 15-meter intervals. A total of 79 artifacts were recovered from 35 Phase I tests, including 58 pieces of lithic debris, 18 FCR, one core, one ceramic sherd, and one faunal fragment (Table 75). Artifacts were recovered from 0 to 80 cmbs, but nearly all were from 0 to 30 cmbs.

Table 75. Site 21CA774 Summary of Artifacts from Phase I Shovel Tests.

Shovel Test	Depth (cmbs)	Count	Artifact Type
139E	0-30	1	Broken flake, rhyolite
141E	0-30	4	FCR
142E	0-30	3	Nonbifacial flake, quartzite
143E	20-40	1	Bipolar flake, quartz
146E	0-30	1	Broken flake, quartz
148E	0-30	2	FCR
151E	0-30	1	Bipolar flake, quartz
		1	Nonbifacial flake, quartzite
		1	Broken flake, rhyolite
152E	0-30	1	Bipolar flake, quartz
153E	30-60	1	Bipolar flake, quartz
		1	Broken flake, quartz
		2	Other G4 flake, quartz
155E	0-30	1	Other G4 flake, basaltic
156E	0-30	1	Shatter, quartz
157E	0-30	1	Freehand nonbifacial core, basaltic
		1	Nonbifacial flake, basaltic
158E	0-30	1	Bipolar flake, quartzite
		3	Nonbifacial flake, unidentified material, quartzite, and quartz
		5	Broken flake, quartzite (2), rhyolite (1), basaltic (2)
		2	Other G4 flake, quartz and basaltic
		1	Shatter, chalcedony
		1	FCR
159E	0-30	1	FCR
163E	0-30	1	Broken flake, quartz
		1	Other G4 flake, quartz
173E	0-30	1	Cf. *Bos taurus*, vertebra fragment
177E	0-30	1	Broken flake, quartz
178E	0-30	5	FCR
	30-60	1	FCR
183E	0-20	1	FCR
184E	20-40	1	Nonbifacial flake, unidentified chert
		1	Broken flake, Knife Lake Siltstone
185E	20-40	1	Ceramic body sherd, grit temper, net impressed
186E	0-20	1	Decortication flake, basaltic
187E	0-30	1	Bipolar flake, quartz
		1	Other G4 flake, quartz
188E	0-20	1	Broken flake, basaltic
190E	0-30	1	Decortication flake, basaltic
		1	Nonbifacial flake, quartzite
		1	Broken flake, unidentified material
193E	0-30	1	Broken flake, quartz
		1	Shatter, quartz
196E	0-20	1	Broken flake, basaltic
197E	0-30	1	Decortication flake, Red River Chert
84W	0-30	1	Decortication flake, basaltic
		1	Nonbifacial flake, basaltic
		1	Broken flake, basaltic
85W	0-20	1	Bipolar flake, Knife Lake Siltstone
		1	Decortication flake, basaltic

Table 75. Continued.

Shovel Test	Depth (cmbs)	Count	Artifact Type
87W	0-30	1	Other G4 flake, unidentified chert
		1	FCR
94W	0-30	1	Bipolar flake, chalcedony
		1	Broken flake, quartzite
	30-80	1	Decortication flake, unidentified chert
131W	30-40	1	Decortication flake, quartz
		2	FCR
132W	0-30	1	Bipolar flake, quartz
		1	Nonbifacial flake, basaltic
139W	20-40	1	Broken flake, chalcedony
Total	-	**79**	-

13.5 Phase II Survey Methods and Results

Phase II testing methods consisted of digging close-interval tests adjacent to the positive Phase I tests in order to refine site limits, make a preliminary assessment of site integrity, recover additional artifacts, and provide data on intrasite artifact patterning. The Phase II close-interval shovel tests were numbered based on the direction and distance from the Phase I test. For example, Shovel Test 141EN5 is located five meters grid north of Shovel Test 141E. A total of 23 XUs were placed in site areas that offered the greatest research potential, based on the data from the shovel tests.

13.6 Phase II Shovel Test Results

Phase II shovel tests were typically placed at 5-meter intervals adjacent to positive Phase I tests. A total of 66 artifacts were recovered from 27 Phase II tests, including 46 pieces of lithic debris, nine FCR, nine faunal fragments, one ceramic sherd, and one projectile point (Table 76). Artifacts were recovered from 0 to 60 cmbs, with most from 0 to 30 cmbs.

Table 76. Site 21CA774 Summary of Artifacts from Phase II Shovel Tests.

Shovel Test	Depth (cmbs)	Count	Artifact Type
141EN5	0-30	2	FCR
141EN10	0-30	1	Broken flake, unidentified material
144EN30	40-60	1	Bipolar flake, quartz
		1	Nonbifacial flake, unidentified material
		1	Other G4 flake, quartz
145ES25	0-30	1	Projectile point, Swan River Chert
145ES30	0-30	2	Bipolar flake, rhyolite
		1	Broken flake, quartz
145ES25W4	20-40	2	Bipolar flake, quartz
146ES5	0-30	3	Bipolar flake, Tongue River Silica (1) and quartz (2)
		1	Decortication flake, chalcedony
		1	Broken flake, chalcedony
148ES5	0-30	1	Bipolar flake, quartz
151EN5	0-30	1	Broken flake, granitic
		1	Shatter, quartz
157ES5	0-30	1	Broken flake, quartz

Table 76. Continued.

Shovel Test	Depth (cmbs)	Count	Artifact Type
173EN3	0-30	2	Mammalian, medium/large, scapula, modern cut/saw marks
		1	Mammalian, large, unidentifiable fragment
		5	Mammalian, unidentifiable fragment
173EN5	0-30	1	Mammalian, large, unidentifiable fragment
177EN5	0-30	2	Bipolar flake, basaltic and quartzite
		1	Nonbifacial flake, basaltic
		3	Broken flake, quartzite (2) and quartz (1)
	30-60	1	Bipolar flake, quartz
182EN10	0-30	1	Nonbifacial flake, basaltic
		4	FCR
182EN15	0-30	1	Ceramic body sherd, grit temper, cord marked
		1	FCR
184EN5	0-30	3	Broken flake, quartz
		1	Other G4 flake, quartz
184EN10	20-40	1	Bipolar flake, quartz
186ES5	0-10	1	Nonbifacial flake, quartzite
		1	Broken flake, quartz
187ES5	0-20	1	FCR
190EN5	0-30	1	Bipolar flake, basaltic
84WN5	0-30	2	Broken flake, chalcedony and unidentified material
85WS5	0-30	1	Bipolar flake, quartz
		1	Broken flake, quartz
94WN10	0-20	1	Nonbifacial flake, quartz
94WS5	0-30	1	Nonbifacial flake, quartzite
		1	Shatter, basaltic
132WN5	40-60	1	Nonbifacial flake, basaltic
		2	Bipolar flake, rhyolite and basaltic
		1	FCR
132WS5	0-30	1	Other G4 flake, quartz
139WN5	0-30	1	Broken flake, quartz
Total	-	**66**	-

13.7 XUs 1A and 2A

XUs 1A and 2A were contiguous units, and the east wall of XU 1A was centered on Phase II Shovel Test 145ES25, which yielded a projectile point. The landscape sloped down considerably to the east. Excavation was terminated at a depth of 50 cmbs because of the absence of artifacts. No artifacts were recovered from these XUs. The soil horizons from the XUs are depicted in a wall profile and a photograph in Figures 75 and 76. The soil profile consists of a sandy loam A horizon, overlying loamy sand B horizons.

13.8 XUs 3A and 4A

XUs 3A and 4A were contiguous units centered on Phase II Shovel Test 146ES5, which yielded five pieces of lithic debris. The landscape sloped slightly down to the east. Excavation was terminated at a depth of 50 cmbs because of the absence of artifacts below 30 cmbs. A summary of artifacts from the XUs is presented in Table 77.

Table 77. Site 21CA774 Summary of Artifacts from XUs 3A and 4A.

Depth (cmbs)	Lithic Debris	Lithic Core	FCR	Total	%
0-10	-	1	-	**1**	**3**
10-20	3	1	19	**23**	**64**
20-30	-	-	12	**12**	**33**
30-40	-	-	-	**0**	**0**
40-50	-	-	-	**0**	**0**
Total	**3**	**2**	**31**	**36**	**-**
%	**9**	**6**	**86**	**-**	**100**

Artifact Summary and Vertical Distribution

A total of 36 artifacts were recovered from XUs 3A and 4A, including 31 FCR, three pieces of lithic debris, and two cores (Table 77). No diagnostic artifacts were recovered, and no features were identified. Artifacts were recovered between 0 and 30 cmbs. The zone with the greatest artifact density (97 percent) occurs between 10 and 30 cmbs and is likely from a single component given the similar artifact types.

Soils and Stratigraphy

The soil horizons from the XUs are depicted in a wall profile and a photograph in Figures 77 and 78. The soil profile consists of a sandy loam A horizon, overlying loamy sand B horizons. The soils appear to be fairly undisturbed, as no modern impacts were observed, and there was only a minimal amount of rodent burrows. There was a minimal to moderate amount of tree roots.

13.9 XUs 5A, 6A, and 7A

XUs 5A, 6A, and 7A were contiguous units placed 30 cm north of Phase I Shovel Test 141E, which yielded four pieces of FCR. The landscape was fairly level. Excavation was terminated at a depth of 40 cmbs because of the absence of artifacts below 30 cmbs. A shovel test was dug in XU 6A to a depth of 75 cmbs, and no artifacts were recovered. A summary of artifacts from the XUs is presented in Table 78. Feature 1, an earthen oven, was identified and is discussed below.

Table 78. Site 21CA774 Summary of Artifacts from XUs 5A, 6A, and 7A, Excluding Feature 1.

Depth (cmbs)	Lithic Debris	FCR	Total	%
0-10	3	4	**7**	**14**
10-20	4	32	**36**	**71**
20-30	-	8	**8**	**16**
30-40	-	-	**0**	**0**
Total	**7**	**44**	**51**	**-**
%	**14**	**86**	**-**	**100**

Artifact Summary and Vertical Distribution

A total of 51 artifacts were recovered from XUs 5A, 6A, and 7A (excluding Feature 1), including 44 FCR and seven pieces of lithic debris (Table 78). No diagnostic artifacts were recovered. The FCR recovered from these units (Table 79 and 80) are likely associated with Feature 1, an earthen oven, which was identified in these units and is discussed below. Artifacts were recovered between 0 and

30 cmbs. The zone with the greatest artifact density (71 percent) occurs between 10 and 20 cmbs and is interpreted as a single component.

Table 79. Site 21CA774 XUs 5A, 6A, and 7A FCR by Count Material, Size, and Type (Excluding Feature 1).

Material	Size Grade (SG)				FCR Type						Total	%
	0	1	2	3	Angular	Friable Rounded	Cobble (friable)	Angular/ Spall	Cobble with Angular	Spall		
Granitic	1	5	23	5	16	-	1	13	1	3	**34**	**77**
Quartzite	1	1	1	1	-	1	-	-	-	3	**4**	**10**
Unid. Material	-	-	1	-	1	-	-	-	-	-	**1**	**2**
Basaltic	-	2	3	-	2	-	-	-	-	3	**5**	**11**
Total	**2**	**8**	**28**	**6**	**19**	**1**	**1**	**13**	**1**	**9**	**44**	**-**
%	**5**	**18**	**64**	**14**	**43**	**2**	**2**	**30**	**2**	**20**	**-**	**100**

Table 80. Site 21CA774 XUs 5A, 6A, and 7A FCR by Weight (grams) Material, Size, and Type (Excluding Feature 1).

Material	Size Grade (SG)				FCR Type						Total	%
	0	1	2	3	Angular	Friable Rounded	Cobble (friable)	Angular/ Spall	Cobble with Angular	Spall		
Granitic	1318	207	135	7	240	-	14	92	131 8	3	**1667**	**79**
Quartzite	293	20	20	2	-	20	-	-	-	315	**335**	**16**
Unid. Material	-	-	7	-	7	-	-	-	-	-	**7**	**<1**
Basaltic	-	81	15	-	81	-	-	-	-	15	**96**	**5**
Total	**1611**	**308**	**177**	**9**	**328**	**20**	**14**	**92**	**131 8**	**333**	**2105**	**-**
%	**77**	**15**	**8**	**<1**	**16**	**1**	**1**	**4**	**63**	**16**	**-**	**100**

<u>Soils and Stratigraphy</u>

The soil horizons from the XUs are depicted in a wall profile and a photograph in Figures 79 and 80. The soil profile consists of a sandy loam A horizon, overlying loamy sand B horizons, and a gravelly sand 2C horizon. Gravel and sand content increase with depth. The soils appear to be fairly undisturbed, as no modern impacts were observed. There was only a minimal amount of rodent burrows, and there was a minimal to moderate amount of tree roots.

Feature 1 in XUs 5A, 6A, and 7A

Feature 1 was initially identified in XUs 5A, and 7A at 18 cmbs as a large and dark, oval-shaped soil stain with a concentration of FCR. A small portion of the feature extends into XU 6A, and a small part of the feature extends into the unexcavated area north of XU 7A. Based on the extent of the feature in planview, most of the feature (c. 95%) was contained in XUs 5A, 6A, and 7A. A charcoal sample recovered from the feature yielded a radiocarbon date of 1190 +/- 30 BP (cal. 1225 to 1010 BP) (Table 74).

The planview and profile of Feature 1 were recorded in illustrations and photos during excavation (Figures 81 to 86). The planview at 20 cmbs shows that the feature is still not clearly distinguished from the black-colored A horizon in some areas. By about 22 cmbs, the feature perimeter was more clearly defined in contrast to the lighter-colored B horizon soil.

Feature 1 was oval in planview and the top of the feature was about 140 cm by 80 cm in size. In profile, the feature was 33 cm deep and had a basin shape. The vertical dimensions of the feature may have been slightly larger, as the top portion of the feature was at the base of the A horizon, but the feature was not identified until the top of the B horizon.

All feature fill (98.25 liters) was troweled and bagged for flotation. Flotation and analysis of the botanicals recovered from the light and heavy fractions was conducted by Connie Arzigian (paleoethnobotanist) and staff at MVAC.

The dark color of the feature was caused by infilling of the pit with topsoil and carbon-stained sediments from charcoal. A moderate amount (between a teaspoon and tablespoon) of charcoal fragments was recovered from feature fill during flotation. The feature is interpreted as an earthen oven for cooking, where the FCR were heated in a fire that was built in the pit, food was then added, and the pit was sealed (with plants and soil) during cooking, which likely took between one half and two days (See FCR Analysis Section x.x). Evidence for this interpretation includes: carbon stained soils and the presence of charcoal and other charred plant remains; small to large pieces of FCR in the feature; and the basin shape (1–3 m in diameter and 0.1–0.3 m deep, typically 30-40 cm deep). Both plant and animal foods were cooked in earth ovens, however, plants were cooked more often (Driver and Massey 1957:233). No oxidized (orangish-colored) soil was observed in or around the feature.

Feature 1 contained a substantial amount of FCR (n=1,859; w=108,499.9 grams) and one piece of lithic debris (Other G4 flake) (Table 81).

Table 81. Site 21CA774 Feature 1 Artifact Summary by Count and Weight (g).

Lithic Debris Count (Weight)	**FCR** Count (Weight g)
1 (0.1)	**1,859 (108,499.9)**

A substantial quantity of FCR occurred throughout the feature, with most of the larger FCR depicted on the planview maps, but few show up in the feature bisection on the profile. The FCR, by count, are mostly small-sized pieces, with 96 percent being SG1 or less, but by weight the majority (57 percent) are SG00 (≥4.0 inch) (Tables 82 and 83). A total of 28 FCR are nearly whole cobbles, exhibiting various conditions of heat alteration (e.g., friable, nonfriable, and cobble with a spall removal). Excluding crumbs, angular-fractured pieces were the most numerous FCR type followed by angular/spall and friable rounded. Most of the FCR is granitic (92%), with much smaller amounts of other materials.

Many of the mostly whole FCR cobbles were approximately 15 to 20 cm in diameter, which is consistent with the size used in earth ovens, where large rocks are preferred for sustaining high cooking temperatures. Granitic rock was often preferred for earth ovens (See FCR analysis Section 4.5).

Table 82. Site 21CA774 Feature 1 FCR Count by Material, Size, and Type.

Material	Size Grade (SG)						FCR Type										Total	%
	00	**0**	**1**	**2**	**3**	**4**	**Angular**	**Friable Rounded**	**Split Cobble**	**Cobble (friable)**	**Cobble (nonfriable**	**Angular/Spall**	**Cobble with Spall**	**Cobble with Angular**	**Crumb**	**Spall**		
Granitic	9	34	71	1295	224	73	171	64	2	7	4	73	3	-	1286	96	**1706**	**92**
Quartzite	8	18	8	6	6	-	12	-	6	1	7	3	3	-	3	11	**46**	**2**
Metamorphic	1	1	1	46	5	-	2	-	-	2	1	-	-	-	41	8	**54**	**3**
Unid. Material	-	2	6	7	9	-	4	-	-	-	-	3	-	-	3	14	**24**	**1**
Basaltic	-	1	2	1	1	-	1	-	1	-	-	3	-	-	-	-	**5**	**<1**
Igneous	-	-	-	7	17	-	-	-	-	-	-	3	-	-	-	21	**24**	**1**
Total	**18**	**56**	**88**	**1362**	**262**	**73**	**190**	**64**	**9**	**10**	**12**	**85**	**6**	**-**	**1333**	**150**	**1859**	**-**
%	**1**	**3**	**5**	**73**	**14**	**4**	**10**	**3**	**<1**	**1**	**1**	**5**	**<1**	**-**	**72**	**8**		**100**

Table 83. Site 21CA774 Feature 1 FCR Weight (grams) by Material, Size, and Type.

Material	Size Grade (SG)						Total	%
	00	**0**	**1**	**2**	**3**	**4**		
Granitic	43221	21111.7	5137	1640.6	211.3	21	**71342.6**	**66**
Quartzite	16354	14408	811	77.2	9.9	-	**31660.1**	**29**
Meta-morphic	2630	405	241	55.8	11.7	-	**3343.5**	**3**
Unid. Material	-	593	278.5	28.9	10.4	-	**910.8**	**1**
Basaltic	-	1096	72.4	21	2.3	-	**1191.7**	**1**
Igneous	-	-	-	32.7	18.5	-	**51.2**	**<1**
Total	**62205**	**37613.7**	**6539.9**	**1856.2**	**264.1**	**21**	**108,499.9**	**-**
%	**57**	**35**	**6**	**2**	**<1**	**<1**		**100**

Table 83. Continued.

FCR Type									Total	%
Angular	**Friable Rounded**	**Split Cobble**	**Cobble (friable)**	**Cobble (nonfriable)**	**Angular/ Spall**	**Cobble with Spall**	**Crumb**	**Spall**		
22,968.4	253.3	1505	4412	24,911	2084.6	13,172	492.1	1544.2	**71,342.6**	**66**
9086	-	6832	895	6970	81.2	7120	2.5	673.4	**31,660.1**	**29**
7.1	-	-	646	2630	-	-	22.2	38.2	**3343.5**	**3**
380	-	-	-	-	110.1	-	1.3	419.4	**910.8**	**1**
43	-	1096	-	-	52.7	-	-	-	**1191.7**	**1**
-	-	-	-	-	8.3	-	-	42.9	**51.2**	**<1**
32,484.5	**253.3**	**9433**	**5953**	**34,511**	**2336.9**	**20,292**	**518.1**	**2718.1**	**108,499.9**	**-**
30	**<1**	**9**	**5**	**32**	**2**	**19**	**<1**	**3**		**100**

A summary of charred botanical materials recovered from feature flotation is presented in Table 84. Small amounts of the following plant remains were recovered: Juglans sp. (black walnut or butternut); unidentified nutlets (from woody plant); unidentified starchy material (possibly nut meat or root tuber); and twig ends/buds. There was also a moderate quantity of wood charcoal fragments in the feature.

Table 84. Site 21CA774 Feature 1 Botanical Summary.

Provenience	Soil Volume Floated (liters)	Light Fraction >10 mesh (% sorted)	Light Fraction 10-20 mesh (% sorted)	Light Fraction <20 mesh (% sorted)	Charred Flora Recovered
20-50 cmbs sample 2	17.4	100%	100%	12.5%	Juglans sp. (black walnut or butternut nutshell) 2 shell fragments, 0.005g; starchy material 5 fragments, 0.012 g; 1 twig end/bud
10-20 cmbs	8.75	100%	100%	12.5%	None
20-30 cmbs	13.5	100%	100%	12.5%	starchy material 2 fragments, <.001 g; unid. nutlet 1 fragment; 1 twig terminal bud
20-35 cmbs	34.35	100%	100%	6.25%	Juglans sp. (black walnut or butternut nutshell) 4 shell fragments, 0.038 g; starchy material (may be nut meat or root tuber?) 4 fragments 0.007 g; unid. nutlets (from woody plant) 4 seeds, 0.028 g
20-50 cmbs Sample 1	24	100%	25%	6.25%	Juglans sp. (black walnut or butternut nutshell) 1 shell fragment, 0.002 g
40-50 cmbs	0.25	100%	100%	100%	wood charcoal

10 mesh = .0787 inches / 2 mm; 20 mesh = .0331 inches / 0.8 mm

The nutshells likely indicate a fall or winter time of occupation. Many trees set buds in the fall, so those remains are also consistent with a cold season occupation. Because walnuts are edible raw and do not require cooking, the nutshells may have been discarded into the fire after the meat was removed for consumption. The nutmeat may also have been added to other items being cooked in the feature. It is possible that the plant remains could also be an incidental natural inclusion in the feature. The light fraction also contained modern uncharred seeds, particularly Chenopodium.

No faunal material was observed in the feature during excavation. One burned long bone fragment from a small mammal (mouse size) was recovered from the feature fill during flotation. However, it is likely that the bone was burned incidentally in the feature and is not a subsistence remain.

13.10 XUs 1B and 2B

XUs 1B and 2B were contiguous units, and the west wall of XU 1B was centered on Phase I Shovel Test 185E, which yielded a net-impressed Brainerd ware ceramic. The landscape was fairly level. Excavation was terminated at a depth of 30 cmbs because no artifacts were recovered, and there was an abrupt increase in gravels and cobbles (up to 20 percent) from 20 to 30 cmbs. It is unlikely that intact cultural deposits exist below 30 cmbs. A 45-cm wide shovel test was placed in the base of the units and dug to 80 cmbs to examine the soils and ensure that no archaeological deposits were present below the depth of excavation. A concrete pedestal for a mailbox was present in the west wall of XU 2.

The soil horizons from the XUs are depicted in a wall profile and a photograph in Figures 87 and 88. The soil profile consists of a sandy loam A horizon, overlying a gravelly loamy sand B horizon and a sand C horizon. There was extensive modern disturbance observed during excavation from 0 to 20 cmbs, and it appears that this area was bladed.

13.11 XU 3B

XU 3B was located 40 cm west of Phase I Shovel Test 187E, which yielded two pieces of lithic debris. The landscape sloped slightly down to the north. Excavation was terminated at a depth of 40 cmbs because of the absence of artifacts below 20 cmbs. A 40-cm wide shovel test was placed in the base of the unit and dug to 75 cmbs to examine the soils and ensure that no archaeological deposits were present below the depth of excavation. A summary of artifacts from the XU is presented in Table 85.

Table 85. Site 21CA774 Summary of Artifacts from XU 3B.

Depth (cmbs)	Lithic Debris	FCR	Lithic Core	Total	%
0-10	3	-	1	**4**	**50**
10-20	3	1	-	**4**	**50**
20-30	-	-	-	**0**	**0**
30-40	-	-	-	**0**	**0**
Total	**6**	**1**	**1**	**8**	**-**
%	**75**	**13**	**13**	**-**	**100**

Artifact Summary and Vertical Distribution
Eight artifacts were recovered from XU 3B, including six pieces of lithic debris, a core, and one FCR (Table 85). No diagnostic artifacts were recovered, and no features were identified. Artifacts were recovered between 0 and 20 cmbs, with an equal count of artifacts in each level. The soils in the upper 10 cm are moderately disturbed and include some fill. The soils below 10 cmbs appear to be mostly undisturbed.

Soils and Stratigraphy
The soil horizons from the XUs are depicted in a wall profile and a photograph in Figures 89 and 90. The soil profile consists of a sandy loam A horizon, overlying a loamy sand B horizon and sand C horizon. There is a notable increase in gravels and cobbles below 20 cmbs.

13.12 XUs 4B and 5B

XUs 4B and 5B were contiguous units, placed 90 cm northeast of Phase I Shovel Test 151E, which yielded three pieces of lithic debris. The landscape sloped slightly down to the south. Excavation was terminated at a depth of 40 cmbs because of the absence of artifacts below 20 cmbs. A summary of artifacts from the XUs is presented in Table 86.

Table 86. Site 21CA774 Summary of Artifacts from XUs 4B and 5B.

Depth (cmbs)	Lithic Debris	Core	Ceramic	Faunal	Total	%
0-10	1	1	1	-	**3**	**50**
10-20	-	-	-	3	**3**	**50**
20-30	-	-	-	-	**0**	**0**
30-40	-	-	-	-	**0**	**0**
Total	**1**	**1**	**1**	**3**	**6**	**-**
%	**17**	**17**	**17**	**50**	**-**	**100**

Artifact Summary and Vertical Distribution
Six artifacts were recovered from XUs 4B and 5B, including one piece of lithic debris, a bipolar core, a ceramic sherd, and three very small faunal fragments (two fish and one mammalian) (Table 86). No diagnostic artifacts were recovered, and no features were identified. Artifacts were recovered between 0 and 20 cmbs, with an equal count of artifacts in each level. A few modern items (glass, nail, asphalt, roofing shingle, and a bottle cap) were observed from 0 to 10 cmbs.

Soils and Stratigraphy
The soil horizons from the XUs are depicted in a wall profile and a photograph in Figures 91 and 92. The soils appear to be relatively undisturbed. The soil profile consists of a sandy loam A horizon, overlying a loamy sand B horizon and sand C horizon. Gravel content is low in all horizons.

13.13 XUs 6B, 7B, 8, to 12

XUs 6B, 7B, and 8 to 12 were seven contiguous units, except for a 30 cm balk between XUs 7B and 10. XU 6B was placed on Phase II Shovel Test 182EN10, which yielded four FCR and one piece of lithic debris. The units are directly across the street from the police department. Phase II Shovel Test

182EN15, which contained one ceramic sherd and one FCR, was located within XU 9. The units were placed on the east side of a buried electric power line. The landscape sloped slightly down to the north. Excavation was terminated at a depth of 40 cmbs because of the substantial decrease in artifacts below 30 cmbs and the significant increase in gravels and cobbles from 30 to 40 cmbs. A summary of artifacts from the XUs is presented in Table 87.

21CA774 Layout of XUs 6B, 7B, and 8 to 12.

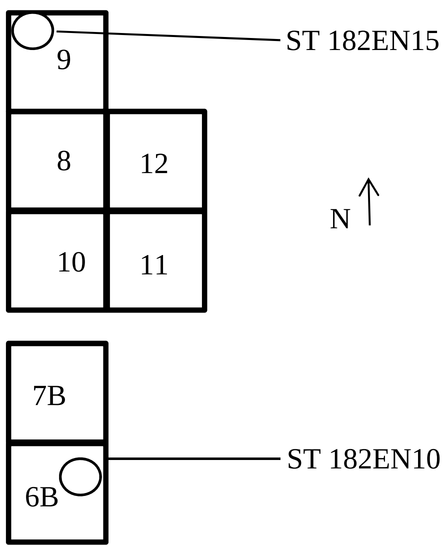


Table 87. Site 21CA774 Summary of Artifacts from XUs 6B, 7B, and 8 to 12.

Depth (cmbs)	**Lithic Debris**	**Core**	**Ceramic**	**FCR**	**Total**	**%**
0-10	6	-	13	2	**21**	**17**
10-20	11	1	25	12	**49**	**39**
20-30	10	-	25	6	**41**	**33**
30-40	2	-	1	11	**14**	**11**
Total	**29**	**1**	**64**	**31**	**125**	**-**
%	**23**	**1**	**51**	**25**	**-**	**100**

<u>Artifact Summary and Vertical Distribution</u>
A total of 125 artifacts were recovered from XUs 6B, 7B, and 8 to 12, including 64 ceramic sherds, 29 pieces of lithic debris, 31 FCR, and a core (tested cobble) (Table 87). The ceramics are horizontally corded Brainerd ware. Three features were identified, and they are discussed below.

Artifacts were recovered between 0 and 40 cmbs. The zone with the greatest artifact density (72 percent) occurs between 10 and 30 cmbs. Artifacts above and below this zone were likely displaced by natural processes and modern disturbances. Excavation notes from most units recorded disturbed soil, modern debris (asphalt, mortar, metal, and glass), and road gravels from 0 to 20 cmbs. The levels from 20 to 40 cmbs had less modern debris than the 0 to 20 cmbs levels, but asphalt, mortar, glass, concrete, and plastic were present, indicating soil disturbances to a depth of 40 cmbs.

Soils and Stratigraphy

The soil horizons from the XUs are depicted in wall profiles and photographs in Figures 93 to 96. The soils are moderately disturbed. The soil profile consists of a sandy loam A horizon, overlying sandy loam and gravelly loamy sand B horizons, and gravelly loam 2C horizon. The loamy C horizon is clearly from a different parent material than the overlying soils. Gravel content increases considerable below 20 cmbs.

Features 2, 3, and 4

Flotation and analysis of the botanicals recovered from the light and heavy fractions of the features was conducted by Connie Arzigian (paleoethnobotanist) and staff at MVAC.

Feature 2 was identified in XU 9 at 30 cmbs as a small, irregular-shaped dark soil stain. The planview and profile of Feature 2 were recorded in illustrations and photos during excavation (Figures 97 and 98). The top of the feature had a maximum diameter of about 60 cm and a minimum diameter of 40 cm. In profile, the feature was 10 cm deep and had a shallow, basin shape. All feature fill (9.0 liters) was troweled and bagged for flotation. A piece of asphalt (7 x 3 cm in size) was found in a rodent burrow in Feature 2 from 30 to 40 cmbs.

Feature 3 was identified in XU 7B at 30 cmbs as a small, dark, circular-shaped soil stain with a piece of FCR. The planview and profile of Feature 3 were recorded in illustrations and photos during excavation (Figures 99 and 100). The top of the feature had a diameter of about 50 cm. In profile, the feature was about 5 cm deep, with a shallow, basin shape. One portion of the feature extended slightly deeper. All feature fill (10.0 liters) was troweled and bagged for flotation.

Feature 4 was identified in XU 8 at 26 cmbs as a small, circular-shaped dark soil stain. The planview and profile of Feature 2 were recorded in illustrations and photos during excavation (Figures 101 and 102). The top of the feature had a maximum diameter of 45 to 50 cm. In profile, the feature was 10 cm deep and had a shallow, basin shape. All feature fill (8.0 liters) was troweled and bagged for flotation.

The dark colors of the features were likely caused by infilling of the pit with topsoil and carbon-stained sediments from charcoal, which was recovered in small amounts from flotation of feature fill. These features don’t match the defined cooking facility types described in Section 4.5. They are interpreted as small fire hearths (for heating or cooking) or surface ovens, based on their characteristics (size, shape, and artifacts). Their small size, shallow depth, and sparse amount of FCR suggest short-term or less intense cooking or heating, as compared to earth ovens. No oxidized (orangish-colored) soil was observed in or around the feature.

Artifacts recovered from the features are presented in Table 88. A relatively small amount of FCR was recovered from Features 2 and 3. Feature 3 contained an abrader with incised lines, and Feature 4 contained one ceramic sherd.

Table 88. Site 21CA774 Feature Artifact Summary by Count and Weight (g).

Feature #	Ceramic Count (Weight)	Lithic Tool Count (Weight)	FCR Count (Weight)
Feature 2 30-40 cmbs	-	-	22 (54.3)
Feature 3 30-40 cmbs	-	1 (16.2) Abrader	10 (13.2)
Feature 4 26-38 cmbs	1 (2.2)	-	-

No charred nuts or seeds were recovered from flotation of Features 2 and 3, although a small quantity of wood charcoal (approximately ½ to ¼ of a teaspoon from each feature) was recovered during flotation.

Charred botanical materials recovered from Feature 4 floatation are presented in Table 89 and include a moderate amount of Juglans sp. (black walnut or butternut) nutshells, a small amount of Quercus sp. (oak) shell fragments, unidentified nutlets (from woody plant), unidentified seed embryos, and a moderate quantity of wood charcoal (about two teaspoons). The nutshells likely indicate a fall or winter time of occupation. Because walnuts are edible raw and do not require cooking, the nutshells may have been discarded into the fire after the meat was removed for consumption. Acorns have bitter tannins that are removed by boiling in multiple changes of water or leaching with wood ash (Moerman 1998). The nutmeat may have been cooked in or processed near the feature, or the plant remains could be an incidental natural inclusion in the feature. The light fraction also contained modern uncharred seeds.

Table 89. Site 21CA774 Features 2, 3, and 4 Botanical Summary.

Provenience	Soil Volume Floated (liters)	Light Fraction >10 mesh (% sorted)	Light Fraction 10-20 mesh (% sorted)	Light Fraction <20 mesh (% sorted)	Charred Flora Recovered
XU 9 Feature 2 30-40 cmbs	9	100%	50%	12.5%	None
XU 7 Feature 3 30-40 cmbs	10	100%	100%	12.5%	None
XU8 Feature 4 26-38 cmbs	8	100%	100%	12.5%	Juglans sp. (black walnut or butternut), 31 nutshell fragments, 0.057 g, plus estimate additional 40 tiny shell fragments from <20 mesh fraction; Quercus sp. 3 acorn shell fragments and one fragment of possible acorn cap; 0.009 g; nutlet, 4 fragments; seed embryos, 2 different seeds, but not enough features to identify

10 mesh = .0787 inches / 2 mm; 20 mesh = .0331 inches / 0.8 mm

13.14 XUs 13 and 14

XUs 13 and 14 were contiguous units, and XU 14 was centered on Phase I Shovel Test 178E, which yielded six pieces of FCR. The landscape was fairly level. Excavation was terminated at a depth of 40 cmbs because of the absence of artifacts in the units and the dense gravel and cobble soils. Despite FCR in the shovel test on which the units were placed, no artifacts were recovered from these XUs or from the shovel test radials placed five meters north and three meters south of Shovel Test 178E.

The soil profile consists of a very dark grayish brown (10YR 3/2) sandy loam A horizon from 0 to 20 cmbs, overlying a dark yellowish brown (10YR 4/4) loamy sand B horizon from 20 to 30 cmbs, and a yellowish brown (10YR 5/6) gravelly sand 2C horizon from 30 to 40 cmbs. Disturbances were minimal. Gravel content was low but increased with depth.

13.15 XU 15

XU 15 was placed between Phase I Shovel Test 173E and Phase II Shovel Test 173EN3, which yielded nine bone fragments. The landscape was fairly level. Excavation was terminated at a depth of 40 cmbs because of the absence of artifacts below 30 cmbs and the increase in gravel. A summary of artifacts from the XU is presented in Table 90.

Table 90. Site 21CA774 Summary of Artifacts from XU 15.

Depth (cmbs)	Fauna, Thermally Altered	FCR	Total	%
0-10	-	-	**0**	**0**
10-20	-	-	**0**	**0**
20-30	1	1	**2**	**100**
30-40	-	-	**0**	**0**
Total	**1**	**1**	**2**	**-**
%	**50**	**50**	**-**	**100**

<u>Artifact Summary and Vertical Distribution</u>
Two artifacts were recovered from XU 15, including one FCR and a small, calcined bone fragment (Table 90). However, a moderate amount of modern or historic debris was found from 0 to 30 cmbs, including glass, plastic, a terra cotta fragment (probably from a plant pot), tinfoil, whiteware, a round nail, and a cast iron foot (possibly from a stove). Also, the adjacent shovel test located one meter away yielded modern or historic sawn bone. Clearly, the unit and adjacent area consists of a modern or historic refuse dump. The plastic indicates that the deposit is at least post 1940 and may be much more recent.

<u>Soils and Stratigraphy</u>
During excavation, a moderate amount of modern soil disturbances were observed from 0 to 20 cmbs and a moderate amount of rodent burrows were observed from 20 to 30 cmbs. The soil profile consists of a black (10YR 2/1) sandy loam A horizon from 0 to 10 cmbs, overlying a dark brown (10YR 3/3) sandy loam B horizon from 10 to 30 cmbs, and a dark yellowish brown (10YR 4/4)

loamy sand B horizon from 30 to 40 cmbs. Gravel content was low but increased with depth. A photo of the wall profile is in Figure 103.

13.16 XU 16

XU 16 was placed adjacent to Phase I Shovel Test 169E, which yielded seven pieces of what appeared to be quartz lithic debris. However, the quartz materials from the shovel test were subsequently interpreted to be road gravels based on the excavation results, which recovered abundant road gravels with quartz from 0 to 20 cmbs. A sample of the road gravels was recovered and examined in the lab and found to consist primarily of basalt, quartz, and other dark-colored rocks.

The landscape was fairly level. Excavation was terminated at a depth of 40 cmbs because of the absence of artifacts and increasing density of gravels and cobbles. The soil profile consists of a black (10YR 2/1) sandy loam A horizon from 0 to 10 cmbs, overlying a brown (10YR 4/3) loamy sand B horizon from 10 to 30 cmbs, and a yellowish brown (10YR 5/4) gravelly sand 2C horizon from 30 to 40 cmbs. Gravel content was low but increased with depth. A photo of the wall profile is in Figure 104.

13.17 Artifact Summary

A total of 2,267 artifacts, weighing 117,531.0 grams, were recovered from the site during the Phase I and Phase II investigations (Table 91). FCR was by far the most abundant artifact type by count and weight. However, most of the FCR were recovered from Feature 1. Other artifact types included small amounts of lithics, ceramics, and faunal material.

Table 91. Site 21CA774 Summary of Artifacts.

Artifact Type	Total by Count (Weight g)	% by Count (Weight g)
FCR	**2,030 (116,569.4)**	**90 (99)**
Lithic	**155 (795.4)**	**7 (1)**
Ceramic	**68 (137.6)**	**3 (<1)**
Faunal	**14 (28.6)**	**1 (<1)**
Total	**2,267 (117,531.0)**	**-**
%	**-**	**100**

13.18 Lithic Analysis

The lithic assemblage consists of 155 artifacts, including 147 pieces of lithic debris, six cores, and two stone tools (Table 92). A variety of flake types, cores, and lithic materials are present in the assemblage, which is discussed below.

Size grade counts for the lithic debris were as follows: SG2 <1.0 inch to ≥0.5 inch (n=39; 26%); SG3 <0.5 inch to ≥0.233 inch (n=94; 64%); and SG4 < 0.233 inch (n=14; 10%). Three lithic artifacts were heat treated, including Tongue River Silica and unidentified chert. One piece of unidentified chert showed evidence of excessive heating, as indicated by crazing and potlid fractures. The amount of cortex on lithic debris is as follows: 0% cortex (n=93; 64%); >0 to <50% (n=31; 20%); 50 to <100% (n=11; 7%); and 100% (n=19; 12%).

Table 92. Site 21CA774 Lithic Artifacts by Material, Flake, and Tool/Core Types.

Material	Nonbifacial Flake	Decortication	Bipolar Flake	Other Grade 4	Shatter	Broken Flake	Tool/Core	Total	%
Quartz	3	1	21	9	6	21	3 bipolar cores	**64**	**41**
Quartzite	12	1	6	-	-	11	1 abrader 1 tested cobble	**32**	**21**
Basaltic	6	5	4	2	1	6	1 freehand nonbifacial core	**25**	**16**
Chalcedony	-	1	1	1	1	3	1 freehand nonbifacial core	**8**	**5**
Rhyolite	-	-	4	-	-	3	-	**7**	**5**
Unid. material	2	-	-	-	1	4	-	**7**	**5**
Knife Lake Siltstone	-	-	1	-	1	2	-	**4**	**3**
Unid. chert	1	1	-	1	-	-	-	**3**	**2**
Tongue River Silica	-	-	2	-	-	-	-	**2**	**1**
Granitic	-	-	-	-	-	1	-	**1**	**1**
Red River Chert	-	1	-	-	-	-	-	**1**	**1**
Swan River Chert	-	-	-	-	-	-	1 projectile point	**1**	**1**
Total	**24**	**10**	**39**	**13**	**10**	**51**	**8**	**155**	**-**
%	**15**	**6**	**25**	**8**	**6**	**33**	**5**	**-**	**100**

Flake Types

The variety of flake types in the assemblage indicates a range of lithic-reduction technologies and stages. Diagnostic flake types, along with their associated technologies and stages of reduction, are summarized in Table 93. Bipolar and nonbifacial technologies are well represented. However, no bifacial flakes were recovered, and there is no evidence for bifacial technology at the site. The assemblage includes lithics from the early and middle stages of reduction, but no flakes types associated with late-stage reduction (tool finishing or maintenance) were recovered. Additional supporting evidence for the various technologies includes: 1) three bipolar cores are indicative of bipolar technology; and 2) two nonbifacial cores are indicative of nonbifacial technology. Types of lithic debris that are not indicative of specific technologies or reduction-stages comprise the largest portion of the assemblage and include broken and other SG4 flakes. These nondiagnostic flake types are not included in Table 93.

Table 93. Site 21CA771 Summary of Diagnostic Flake Types, Technologies, and Reduction Stages.

Count & Flake Type	Technology	Stage of Reduction
39 - Bipolar flakes	Bipolar	N/A
10 - Decortication flakes	Nonbifacial	Earliest stage of core reduction
24- Nonbifacial flakes	Nonbifacial	Cobble testing, reducing unprepared nonbifacial cores for flake blank production, and the early stages of nonbifacial tool reduction (early to middle-stages of reduction)
10 - Shatter	N/A	Mostly from cobble testing, core reduction, and earlier stages of reduction

Lithic Material Types and Use

Lithic materials consisted primarily of quartz (41%), quartzite (21%), and basalt (16%), with a wide range of other materials that comprise five percent or less of the assemblage. Nearly all of the materials are locally available. The unidentified chert and unidentified materials may be local or exotic. The decortication flake of unidentified chert suggests a local acquisition for that material. No materials are conclusively non-local or exotic in origin. Chalcedony is classified in the Western River Gravels group (Bakken 2011), which occurs in the South Agassiz Resource Region, and is likely present in the local glacial deposits.

Although the lithic data is sparse, there are some patterns of differential material use that are indicated by the raw material debris profiles. The quality of the raw material, cobble size, and material abundance are likely the primary factors in the use patterns. The most notable lithic use characteristics are discussed below for those materials that have adequate sample sizes of diagnostic flakes. However, most materials lack an adequate sample size.

Quartz primarily occurs as broken flakes and bipolar flakes. The use of quartz was likely limited by its flaking qualities. Quartzite primarily occurs as nonbifacial flakes, broken flakes, and to a lesser extent bipolar flakes. Rhyolite and Tongue River Silica occur primarily as bipolar flakes. Basalt occurs in a variety of flake types including nonbifacial, decortication, bipolar flakes, and broken flakes. Red River Chert occurs only as a decortication flake. Chalcedony occurs in a variety of flake types, except nonbifacial.

Stone Tools

Two stone tools were recovered, including a quartzite abrader and a projectile point. The abrader has fine incised lines and may have been used for edge preparation during flintknapping.

The projectile point is a small, side-notched Late Woodland type made of heat treated Swan River Chert. It was recovered from Shovel Test 145ES25 from 0 to 30 cmbs (Figure 105; Catalog # 2016.79.56.1). The point is made on a flake and has fine, pressure-flaking on both faces along the base and blade margins. The blade form is triangular, and the base is straight and ground. The basal ear is broken off of one side. In cross-section, the point is thin, with a symmetrical lenticular shape. The side notches are very narrow and shallow, and the notch is not discernible on the side with the broken basal ear. The point is 21.0 mm long, the shoulder width above the notches is 12.3 mm, the basal ear width is 14.3 mm, the width between the notches is 11.7 mm, and the thickness is 3.7 mm. Projectile points are hunting weapons that were also used for cutting and slicing animal remains, wood, or plants. The point indicates that site activities included the procurement of game animals, and possibly processing of animals or plants. No other artifacts were found in direct association with the point.

Cores
Six cores were recovered, including three bipolar cores (quartz), two freehand nonbifacial cores (basalt and chalcedony), and a tested cobble (quartzite). The freehand cores have unpatterned flaking and unprepared platforms.

13.19 FCR

Of the 2,030 pieces of FCR recovered at the site, most (n= 1903) were from Feature 1 and adjacent XUs 5A, 6A, and 7A, and this FCR data was previously presented in Sections x.x. A total of 127 FCR were recovered from other shovel Tests and XUs in scattered locations across the site (Tables 94 and 95). These FCR are mostly small-sized pieces, with 90 percent being SG1 or less, and none were larger than SG0. Angular-fractured pieces were the most numerous FCR type followed by crumbs, angular/spall, and friable rounded types. There are two FCR cobbles and four cobbles with a spall. Most of the FCR is granitic (75%), with smaller amounts of quartzite, unidentified material, and basalt.

Table 94. Site 21CA774 FCR Count by Material, Size, and Type (Excluding XUs 5A, 6A, and 7A and Feature 1).

Material	Size Grade (SG)				FCR Type							Total	%
	0	1	2	3	Angular	Friable Rounded	Cobble nonfriable	Angular/ Spall	Cobble with Spall	Crumb	Spall		
Granitic	9	24	42	5	25	8	2	7	4	22	12	**80**	**63**
Quartzite	1	5	4	2	6	-	-	2	-	-	4	**12**	**9**
Unid. Material		6	10	1	5	-	-	4	-	-	8	**17**	**13**
Basaltic		6	9	2	10	-	-	2	-	-	5	**17**	**13**
Igneous			1		-	-	-	-	-	-	1	**1**	**<1**
Total	**10**	**41**	**66**	**10**	**46**	**8**	**2**	**15**	**4**	**22**	**30**	**127**	**-**
%	**8**	**32**	**52**	**8**	**36**	**6**	**2**	**12**	**3**	**17**	**24**		**100**

Table 95. Site 21CA774 FCR Weight (grams) by Material, Size, and Type (Excluding XUs 5A, 6A, and 7A and Feature 1).

Material	Size Grade (SG)				FCR Type							Total	%
	0	1	2	3	Angular	Friable Rounded	Cobble nonfriable	Angular/ Spall	Cobble with Spall	Crumb	Spall		
Granitic	2908	1369	201.2	8	1461	73.3	1091	103.9	552	9	1196	**4486.2**	**75**
Quartzite	183	375	18.7	2.8	256.8	-	-	200.7	-	-	122	**579.5**	**10**
Unid. Material	-	325	92.2	1	151.8	-	-	79.4	-	-	187	**418.2**	**7**
Basaltic	-	370	101.6	3	413	-	-	13	-	-	48.6	**474.6**	**8**
Igneous	-	-	6	-	-	-	-	-	-	-	6	**6**	**<1**
Total	**3091**	**2439**	**419.7**	**14.8**	**2282.6**	**73.3**	**1091**	**397**	**552**	**9**	**1559.6**	**5964.5**	**-**
%	**52**	**41**	**7**	**<1**	**38**	**1**	**18**	**7**	**9**	**<1**	**26**		**100**

13.20 Ceramic Analysis

Ceramics were recovered from three areas of the site. A single net-impressed Brainerd ware body sherd was recovered from Shovel Test 185E. However, no additional sherds were recovered from close-interval shovel tests and units placed at that location.

A single rim sherd was recovered from XU 4B (Figure 106; Catalog # 2016.79.33.3). However, no additional sherds were recovered from close-interval shovel tests and units placed at that location. The rim sherd is a small, undecorated fragment with a smooth surface and fine grit temper. The lip is slightly rounded and thickened slightly on the exterior side. It is too small to determine rim angle, but the rim profile has a slightly excurved shape. Thickness is 5.0 mm at lip and 7.3 mm two cm below lip. It was not possible to classify this rim as a specific ware.

The largest amount of ceramics was recovered from XUs 6B, 7B, and 8 to 12. A total of 65 body sherds with cord marked surface treatment and grit temper were recovered. These ceramics are horizontally corded Brainerd ware (Hohman-Caine and Goltz 1995a). There were 59 sherds with intact interior and exterior surfaces that were measured for thickness. The minimum sherd thickness was 2.6 mm, and the maximum was 6.5, with an average thickness of 4.2 mm.

13.21 Faunal Analysis

Only a sparse amount of faunal material was recovered (Table 96), and most of it (11 of the 14 faunal fragments) was modern or historic remains recovered from XU 15 and adjacent Shovel Tests 173E, 173EN3, and 173EN5. The only remains which appear to be confidently associated with precontact occupations are two fish bones and one mammalian fragment from XU 5B, which likely are subsistence remains. A possible small piece of calcined mammalian bone from XU 15 that was recovered from the same level as one piece of FCR may also be precontact. However, modern or historic debris was also found in the same level as the bone and FCR. The small size and fragmentary condition of the remains do not allow for specific identification of species or element of the fauna.

The historic remains include a vertebra from a cf. *Bos taurus* (cow), two scapula fragments from a medium/large mammal that have been sawn, and large mammal and mammalian fauna that were recovered in association with these remains.

Table 96. Site 21CA774 Faunal Material by Count and Weight (g).

Class	**Unmodified Count (Weight)**	**Thermally Altered Count (Weight)**	**Total by Count (Weight)**	**% by Count (Weight)**
Mammalian	6 (2.2)	1 (0.5)	**7 (2.7)**	**50 (9)**
Mammalian, medium/large*	2 (2.0)	-	**2 (2.0)**	**14 (7)**
Fish	2 (0.2)	-	**2 (0.2)**	**14 (1)**
Mammalian, large	2 (1.8)	-	**2 (1.8)**	**14 (6)**
Cf. *Bos taurus* (cow)	1 (21.9)	-	**1 (21.9)**	**7 (77)**
Total	**13 (28.1)**	**1 (0.5)**	**14 (28.6)**	**-**
%	**93 (98)**	**7 (2)**	**-**	**100**

*both of these bones are cut with a metal saw

13.22 Conclusions and Recommendations

Site 21CA774 is a multicomponent site that consists of a large, precontact period artifact scatter and habitation. An Initial Woodland component was identified in two areas based on Brainerd ware ceramics. A Terminal Woodland component was defined from a small projectile point and an earthen oven feature that dated to ca. 1190 RCYBP (cal. 1100 BP). Given the large size of the site and the abundant precontact occupations in the area, there were probably multiple precontact occupations, perhaps extending over thousands of years. However, the age and cultural affiliation of the other precontact occupations are unknown because of the absence of diagnostic artifacts or dateable materials.

The Phase I and II investigations included 62 positive shovel tests and 23 1-x-1 meter XUs. Artifacts were recovered from 0 to 80 cmbs. Artifact density is very low except for two locations where artifact concentrations were identified at XU blocks 5A to 7A and XUs 6B, 7B, and 8 to 12. These areas include cooking or heating features and associated habitation artifacts, such as ceramics, lithic debris, and charred botanical materials.

The artifact assemblage includes FCR, lithic debris, and ceramics, with very small amounts of stone tools and faunal material. The most extensive site activity was low-intensity lithic reduction, and most of the site area is best classified as a sparse lithic scatter. Lithic raw materials at the site consist of locally available materials, with quartz being the most abundant. Lithic debris and cores from the site indicate bipolar and nonbifacial technologies are well represented. The assemblage includes lithics from the early and middle stages of reduction. There is no evidence for bifacial reduction or for late-stage reduction or tool maintenance. The projectile point indicates hunting activity.

Most of the FCR were recovered from Feature 1, with small amounts of FCR recovered in scattered locations. In two locations, cooking or heating activities are indicated by features, FCR, and ceramics. Charred botanical materials in the features include *Juglans* sp. (black walnut or butternut) and *Quercus* sp. (oak) nutshells fragments, which may be subsistence remains. Feature 1 is interpreted to be an earthen oven and Features 2, 3, and 4 are interpreted as fire hearths or surface ovens for heating or cooking.

Diagnostic artifacts include Brainerd net-impressed ceramics and a Late Woodland projectile point. Most of the site appears to retain integrity, as modern disturbance were minimal, except for buried utilities along the ROW.

There is not any obvious patterning to the horizontal distribution of artifacts, except for the few areas where features and a ceramic concentration were identified. Also, there is a lack of meaningful vertical artifact patterning that could provide information on site components, as most artifacts were recovered from 0 to 30 cmbs.

Although the archaeological deposits appear to be mostly undisturbed, the research potential of the site is low because of a very limited artifact assemblage, low artifact density, and a lack of diagnostic artifacts or dateable material across most of the site. The features at the site were excavated, and their information potential was exhausted by the Phase II excavation. The site is not capable of providing information important to relevant research themes under NRHP Criterion D (See Section 2.3 Research Themes). The site is recommended not eligible for listing on the National Register of Historic Places because it does not meet National Register Criteria A, B, C, or D. No further archaeological work is recommended at the site.

Figure 72. Site 21CA774 Map on Air Imagery.

Figure 73. Site 21CA774 Photo of XUs 1A to 4A Area, Facing North from CSAH 77.

Figure 74. Site 21CA774 Photo of XUs 6B, 7B, and 8 to 12 Area, Facing North from CSAH 77.

Figure 75. Site 21CA774 Photo XU 1A and 2A East Wall Profile.

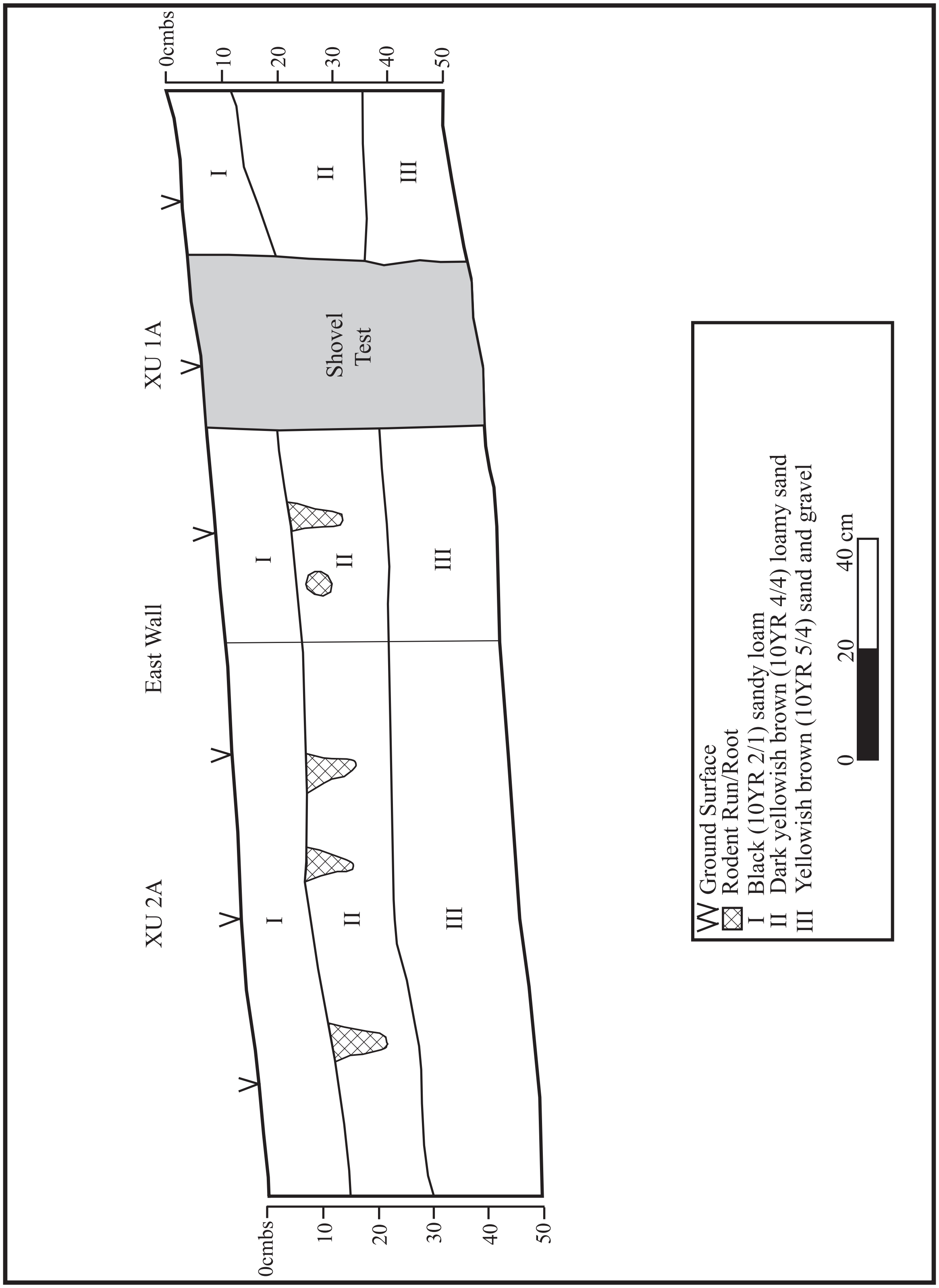


Figure 76. Site 21CA774 XUs 1A and 2A East Wall Profile.

Figure 77. Site 21CA774 Photo XUs 3A and 4A East Wall Profile.

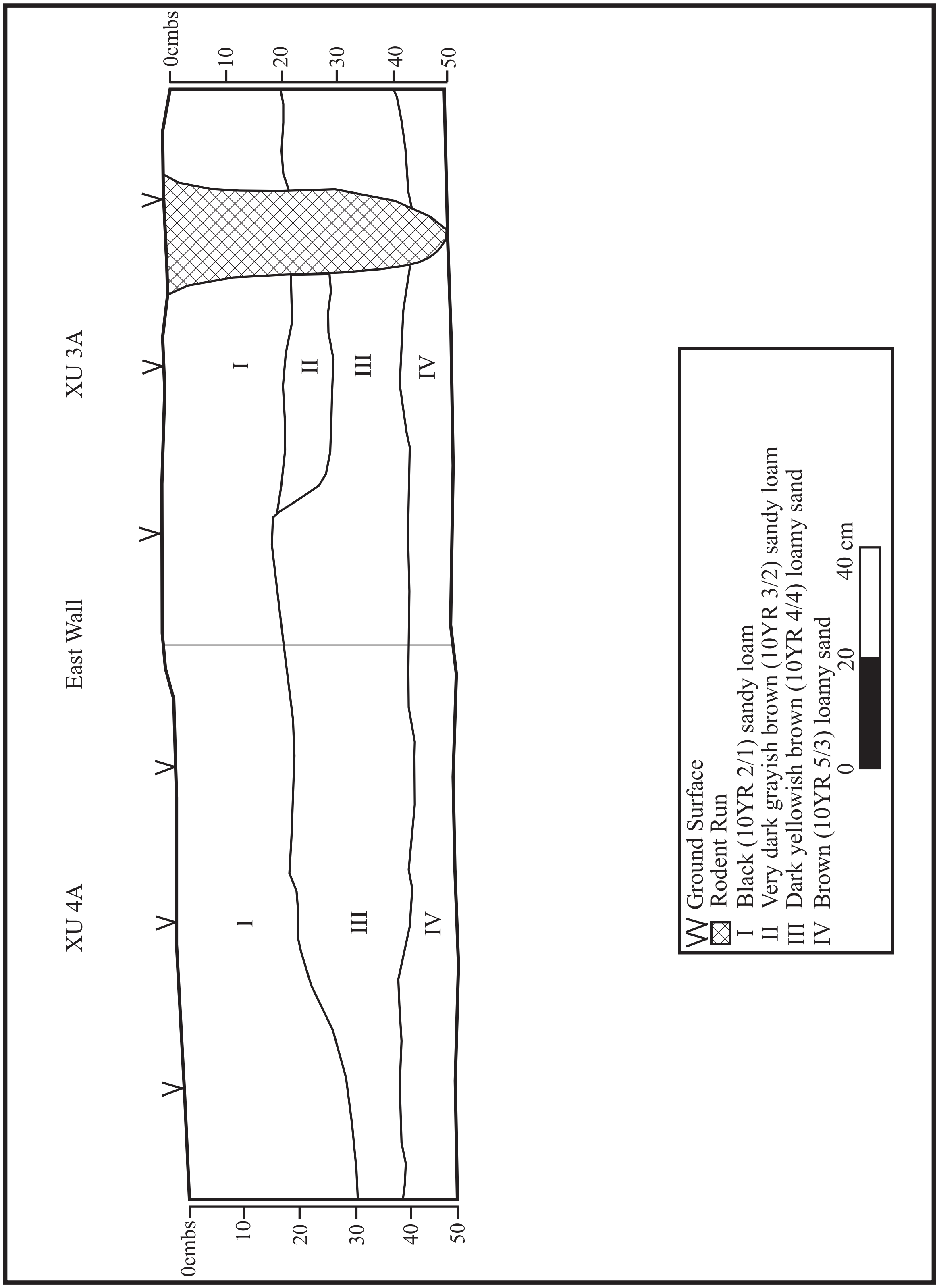


Figure 78. Site 21CA774 XUs 3A and 4A East Wall Profile.

Figure 79. Site 21CA774 Photo XUs 5A and 6A East Wall Profile.

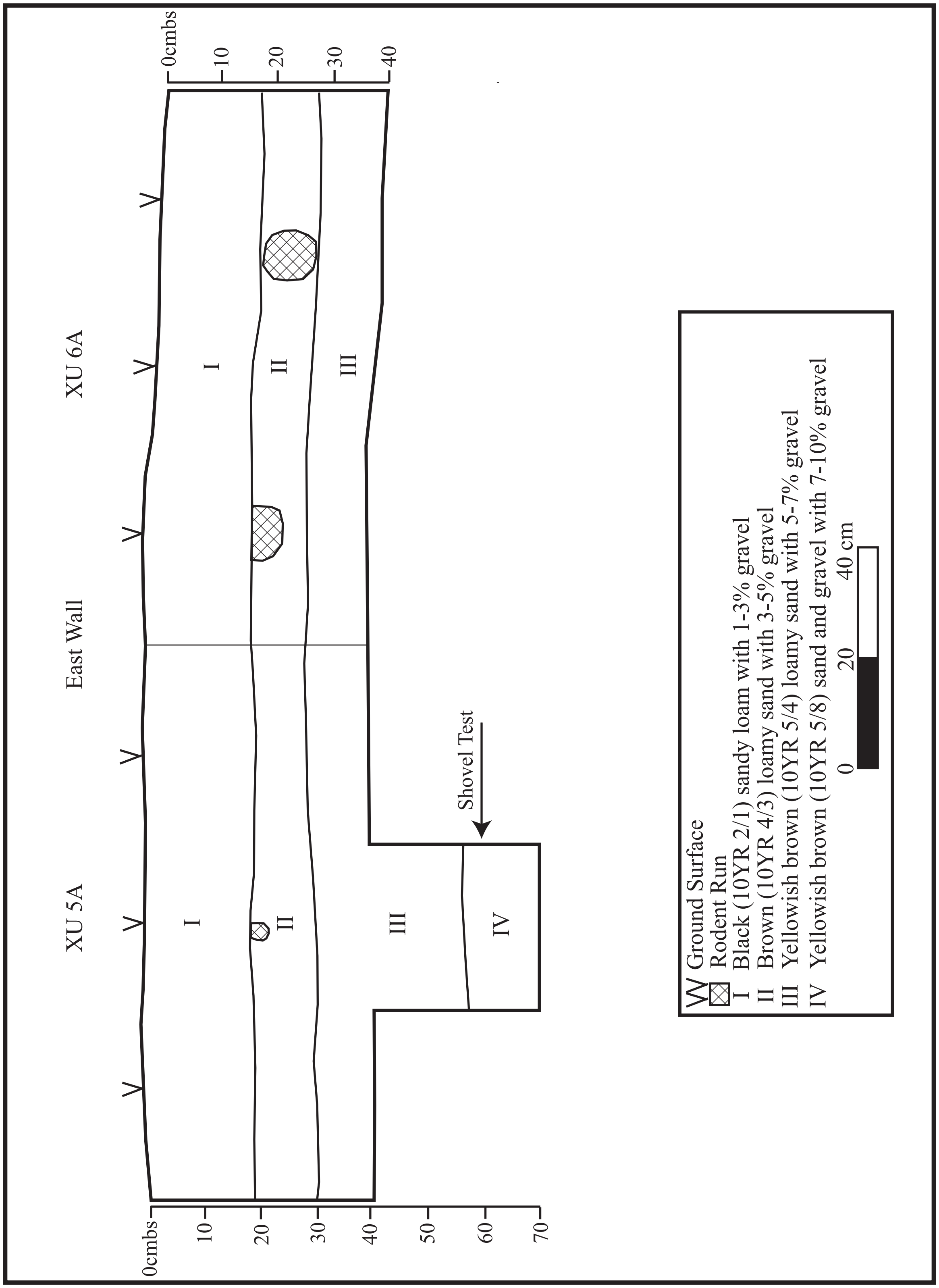


Figure 80. Site 21CA774 XUs 5A and 6A East Wall Profile.

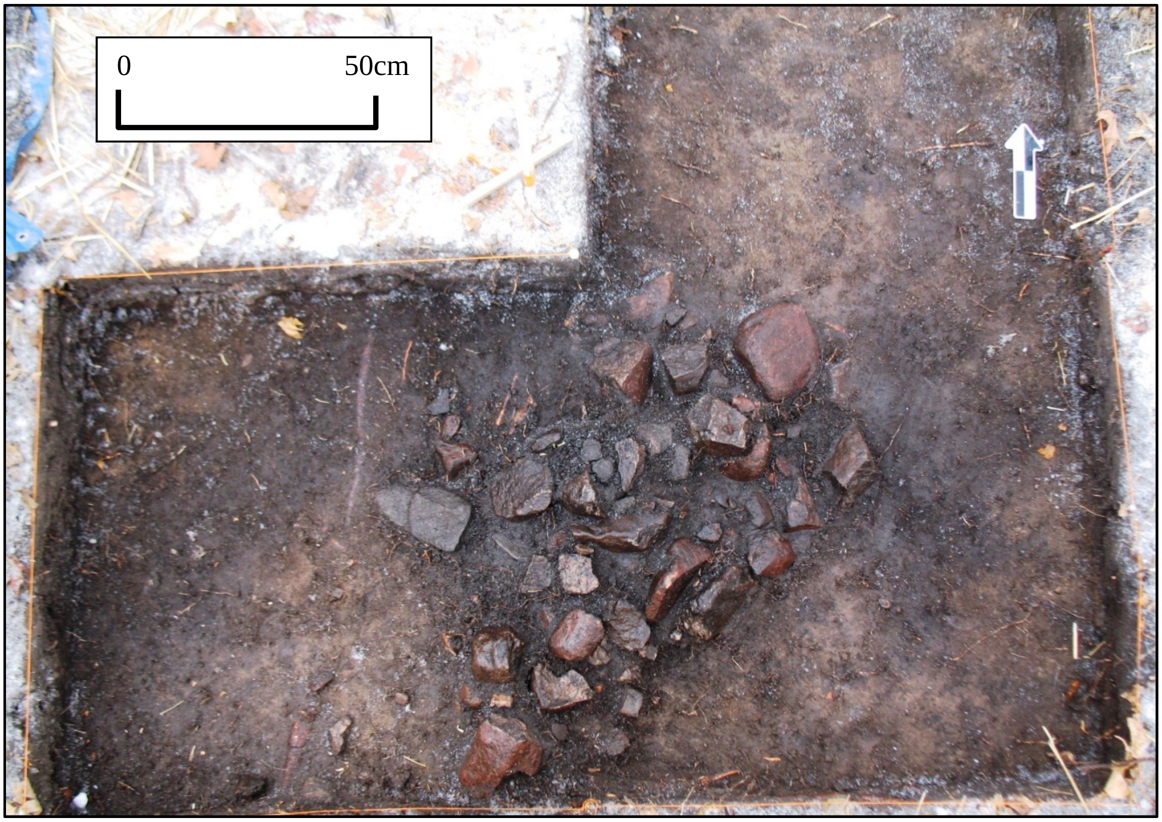


Figure 81. Site 21CA774 Photo Feature 1 Planview in XUs 5A to 7A at 20 cmbs.

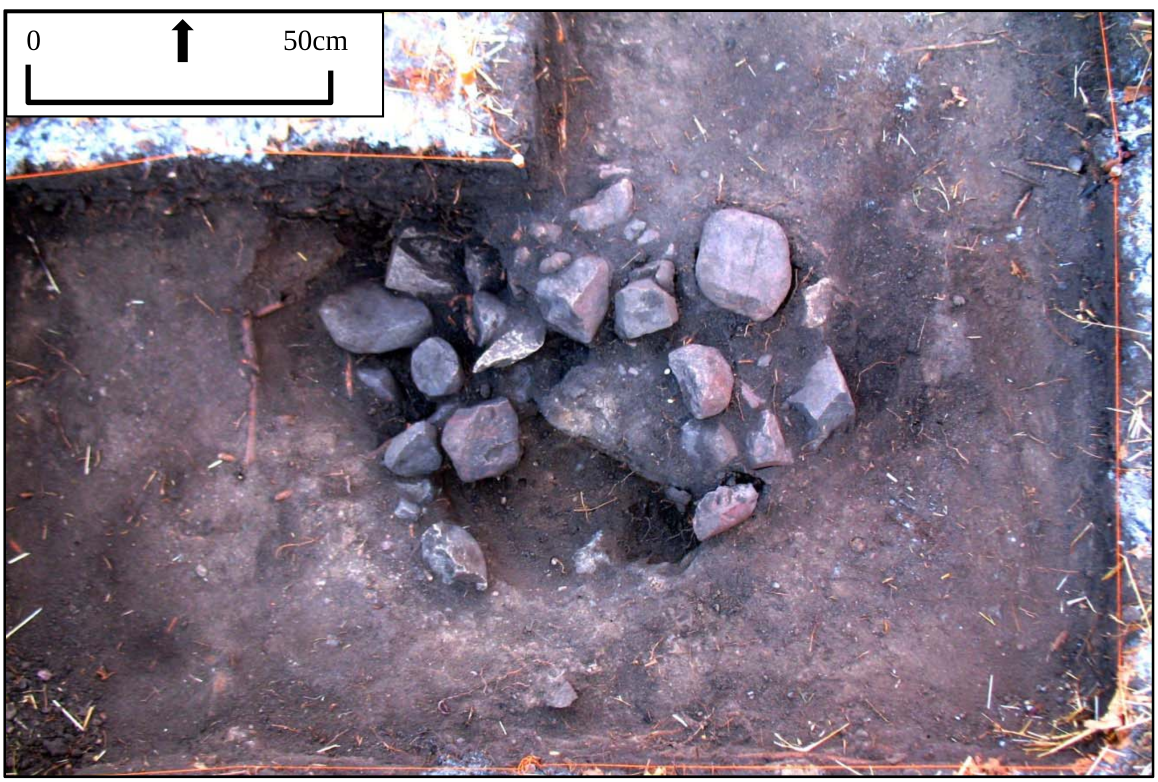


Figure 82. Site 21CA774 Photo Feature 1 Planview XUs 5A to 7A at c. 22 cmbs, After Feature Fill Was Excavated from West Half.

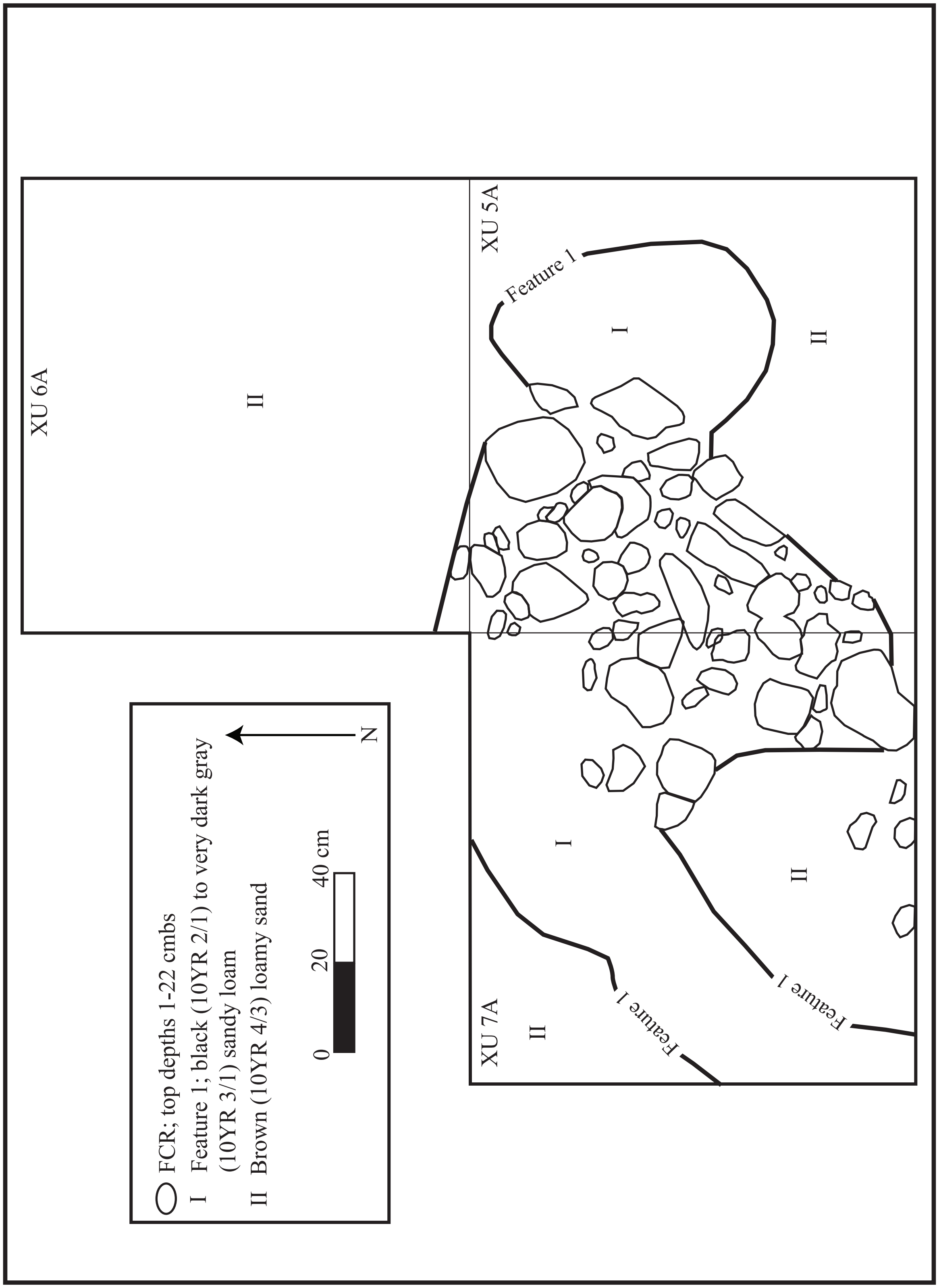


Figure 83. Site 21CA774 Feature 1 Planview in Xus 5A to 7A at 20 cmbs, Showing Upper FCR.

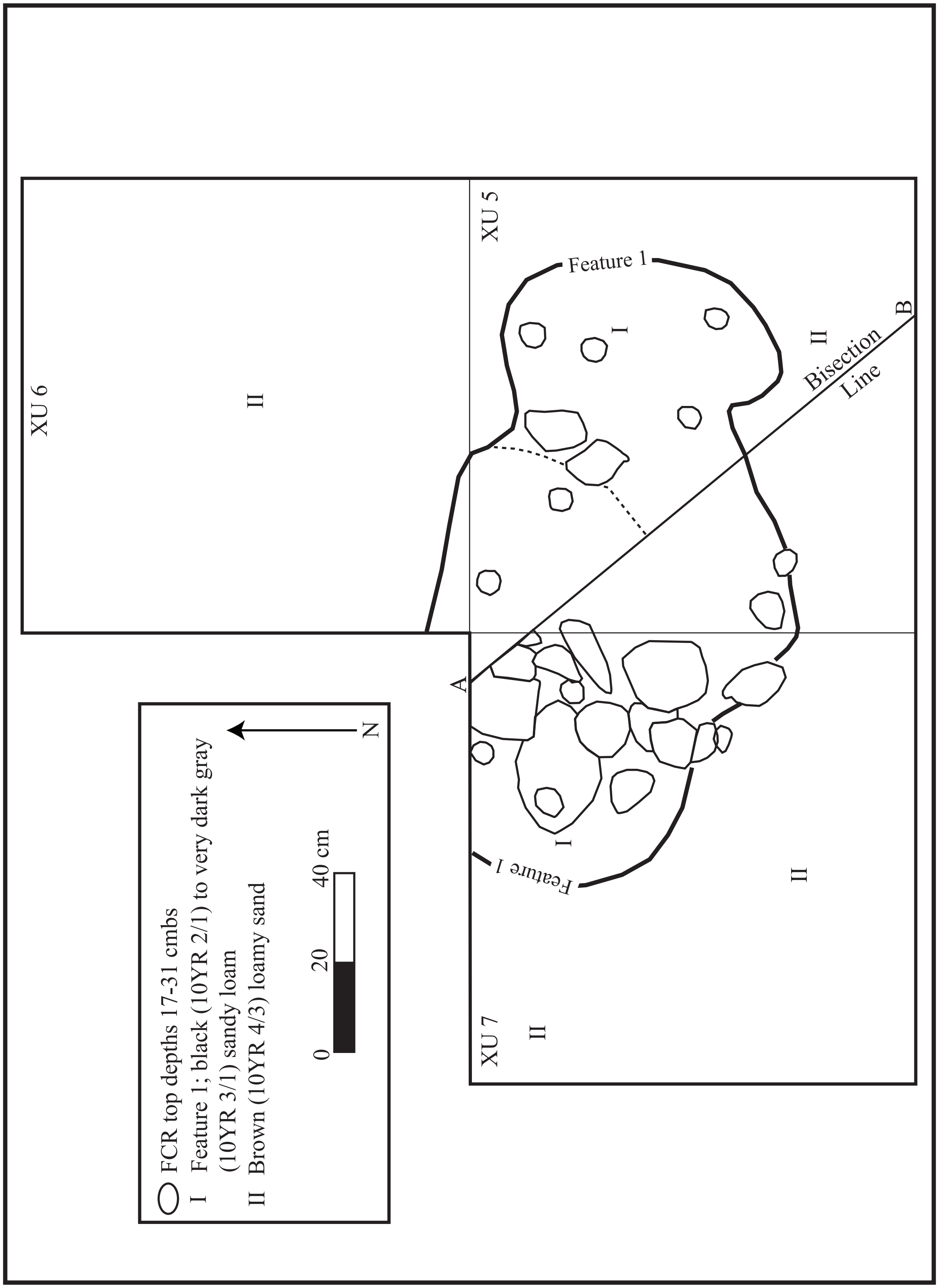


Figure 84. Site 21CA774 Feature 1 Planview in XUs 5A to 7A Defined after Excavation of Feature, 22 cmbs Outside of Feature.

Figure 85. Site 21CA774 Photo Feature 1 Profile in XUs 5A to 7A 20 to 49 cmbs.

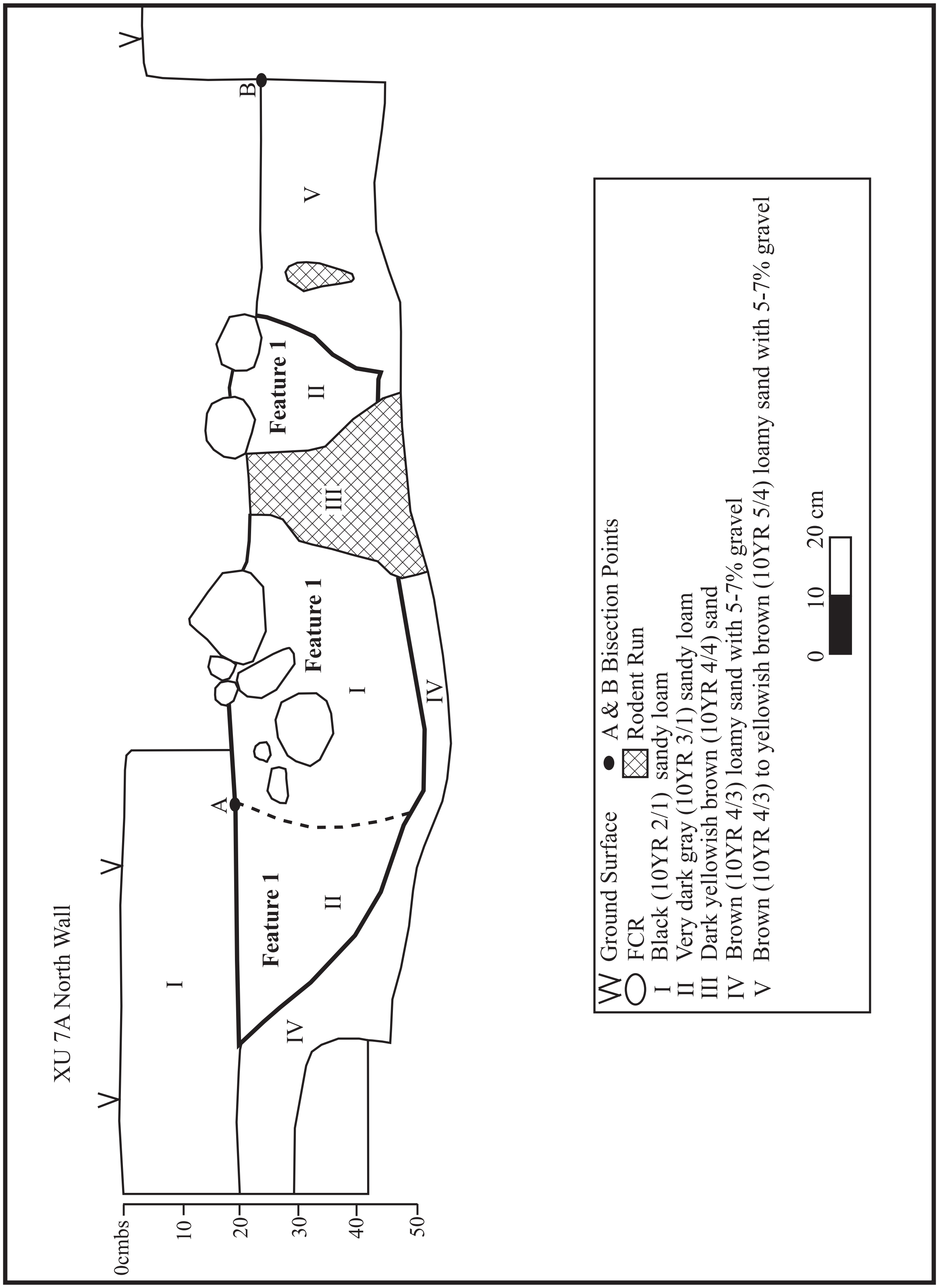


Figure 86. Site 21CA774 Feature 1 Profile in XUs 5A to 7A 20 to 49 cmbs.

Figure 87. Site 21CA774 Photo XU 1B and 2B West Wall Profile.

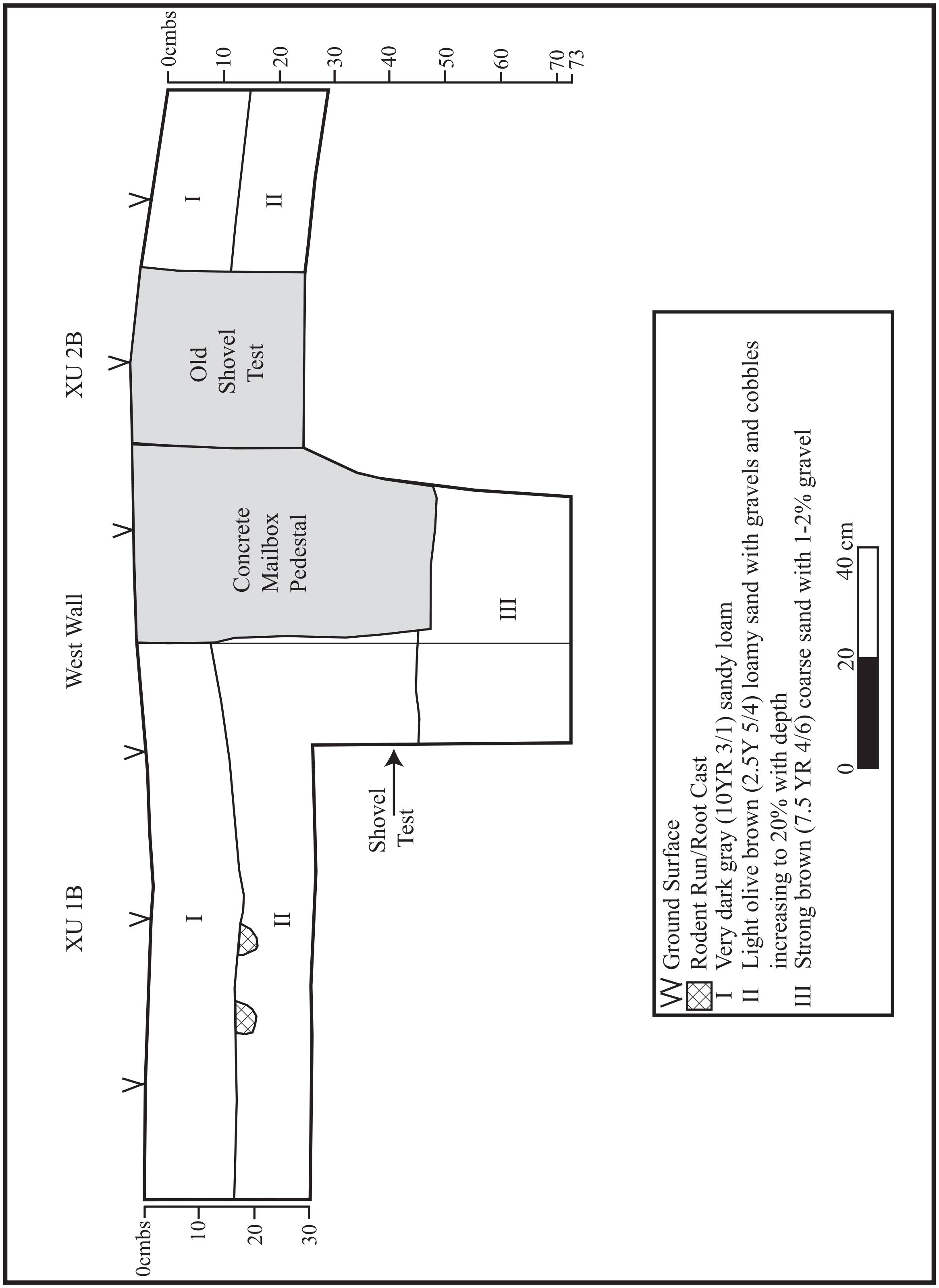


Figure 88. Site 21CA774 XUs 1B and 2B West Wall Profile.

Figure 89. Site 21CA774 Photo XU 3B West Wall Profile.

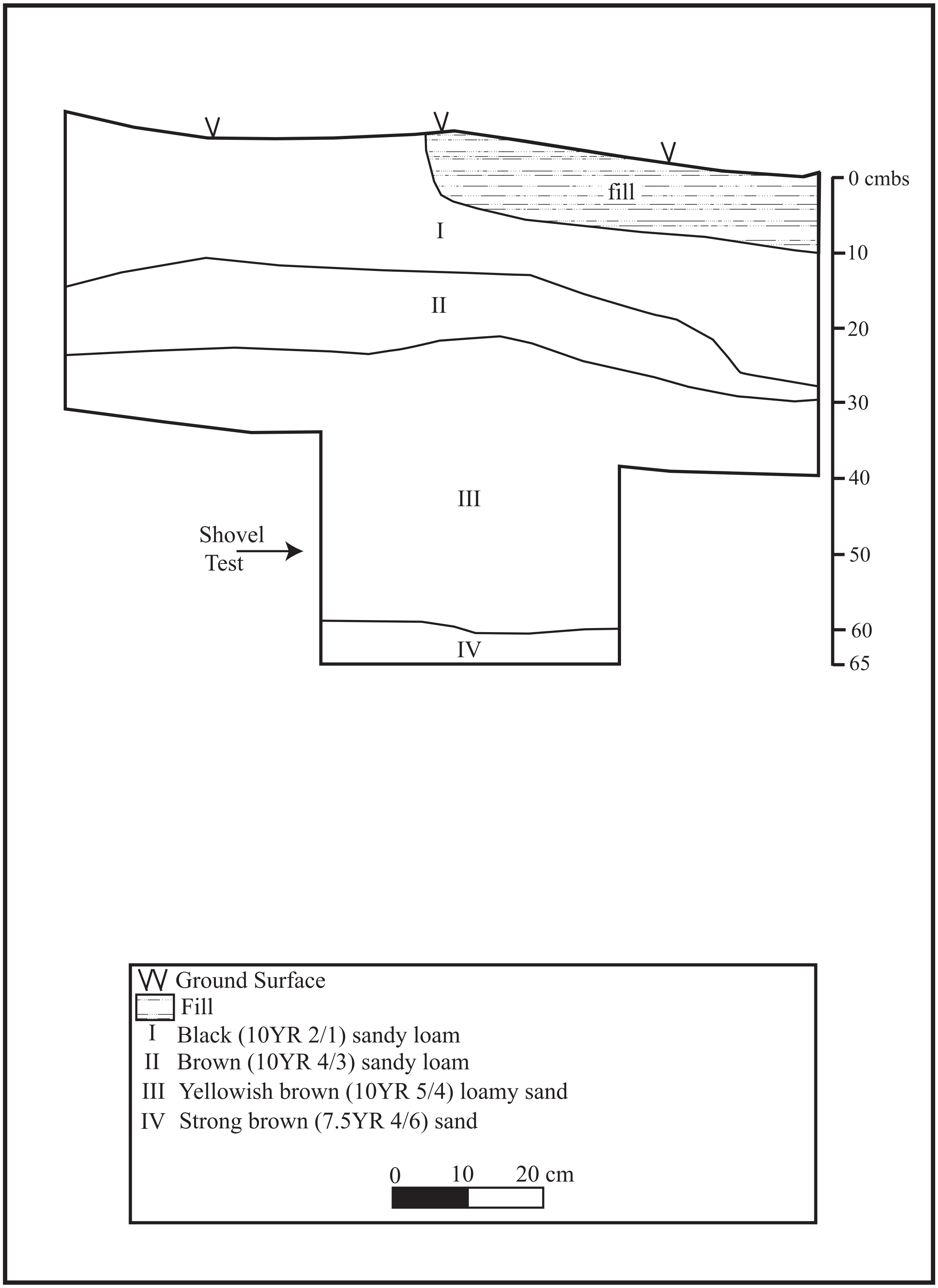


Figure 90. Site 21CA774 XU 3B West Wall Profile.

Figure 91. Site 21CA774 Photo XU 4B and 5B West Wall Profile.

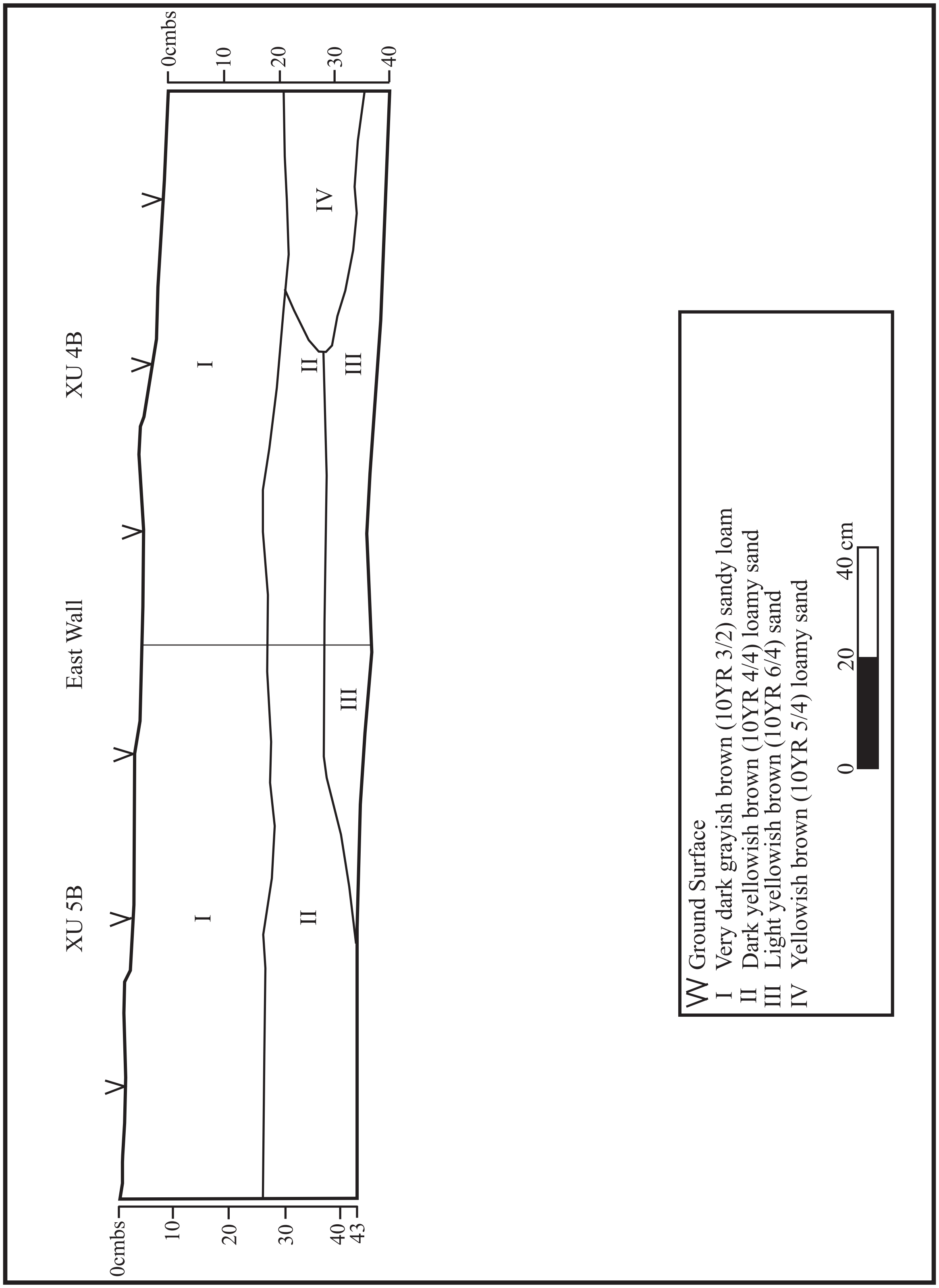


Figure 92. Site 21CA774 XUs 4B and 5B East Wall Profile.

Figure 93. Site 21CA774 Photo XUs 6B and 7B East Wall Profile.

Figure 94. Site 21CA774 Photo XUs 8, 9, and 10 East Wall Profile.

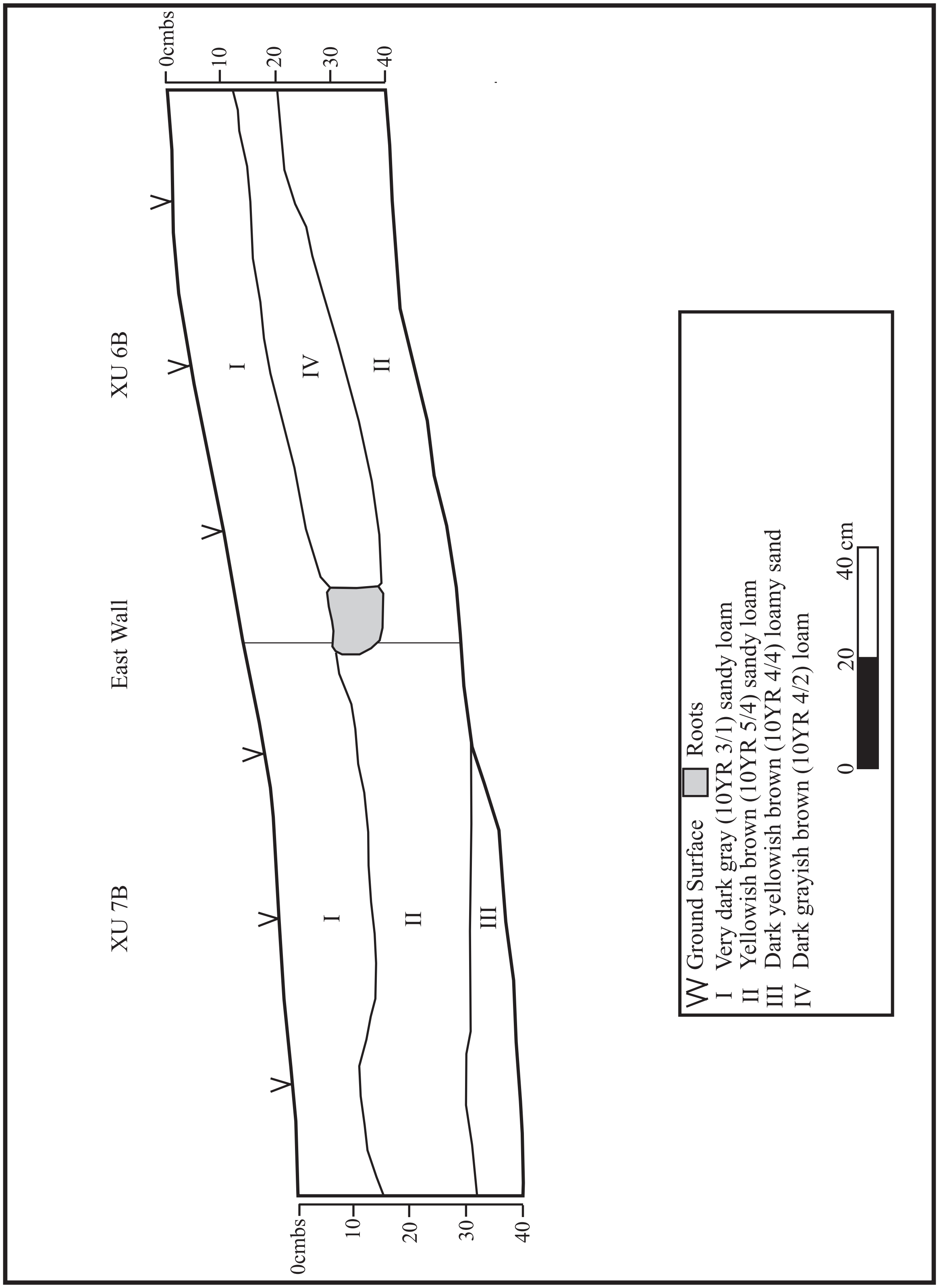


Figure 95. Site 21CA774 XUs 6B and 7B East Wall Profile.

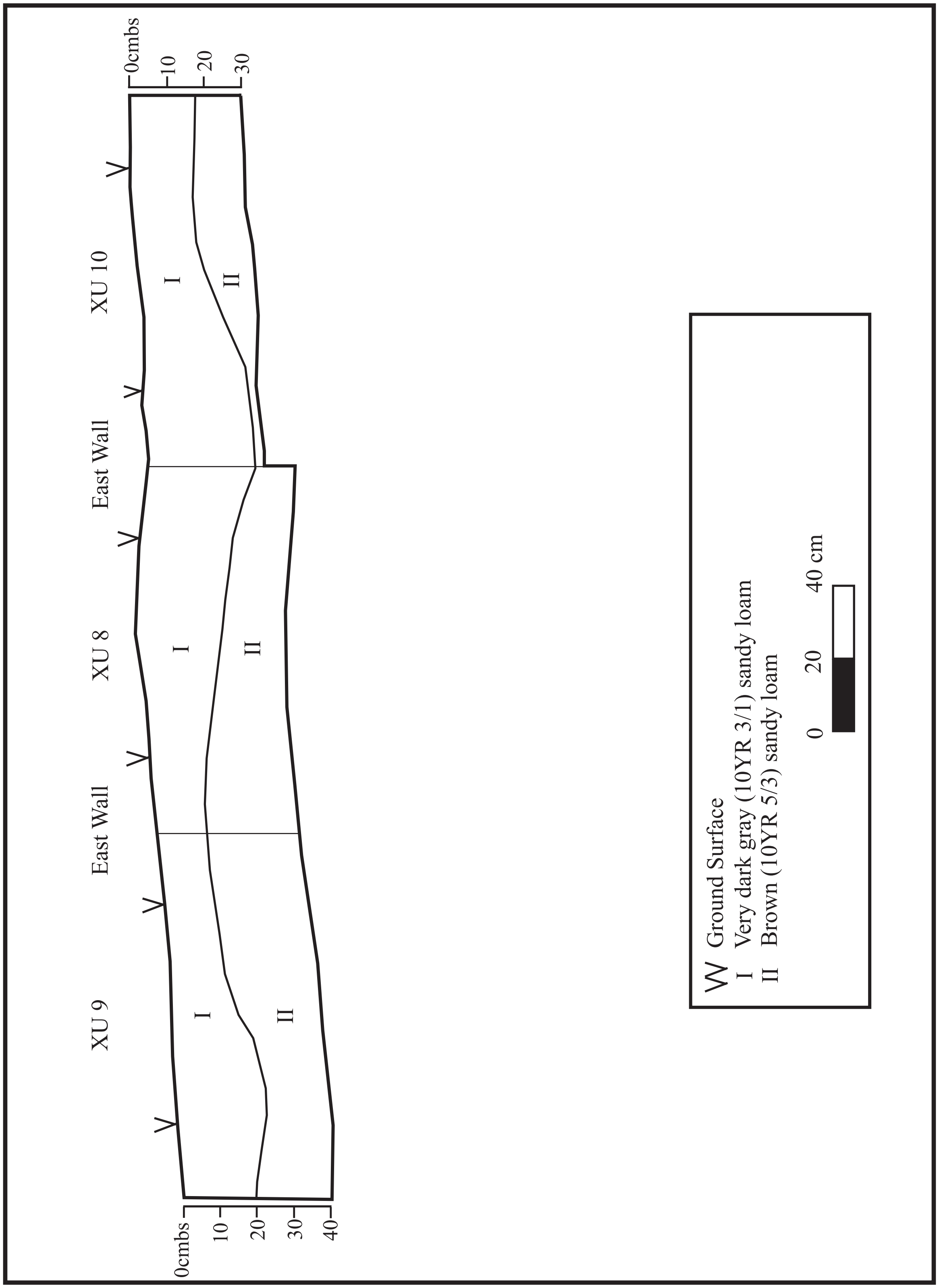


Figure 96. Site 21CA774 XUs 8, 9, and 10 East Wall Profile.

Figure 97. Site 21CA774 Photo Feature 2 Planview in XU 9 at 30 cmbd.

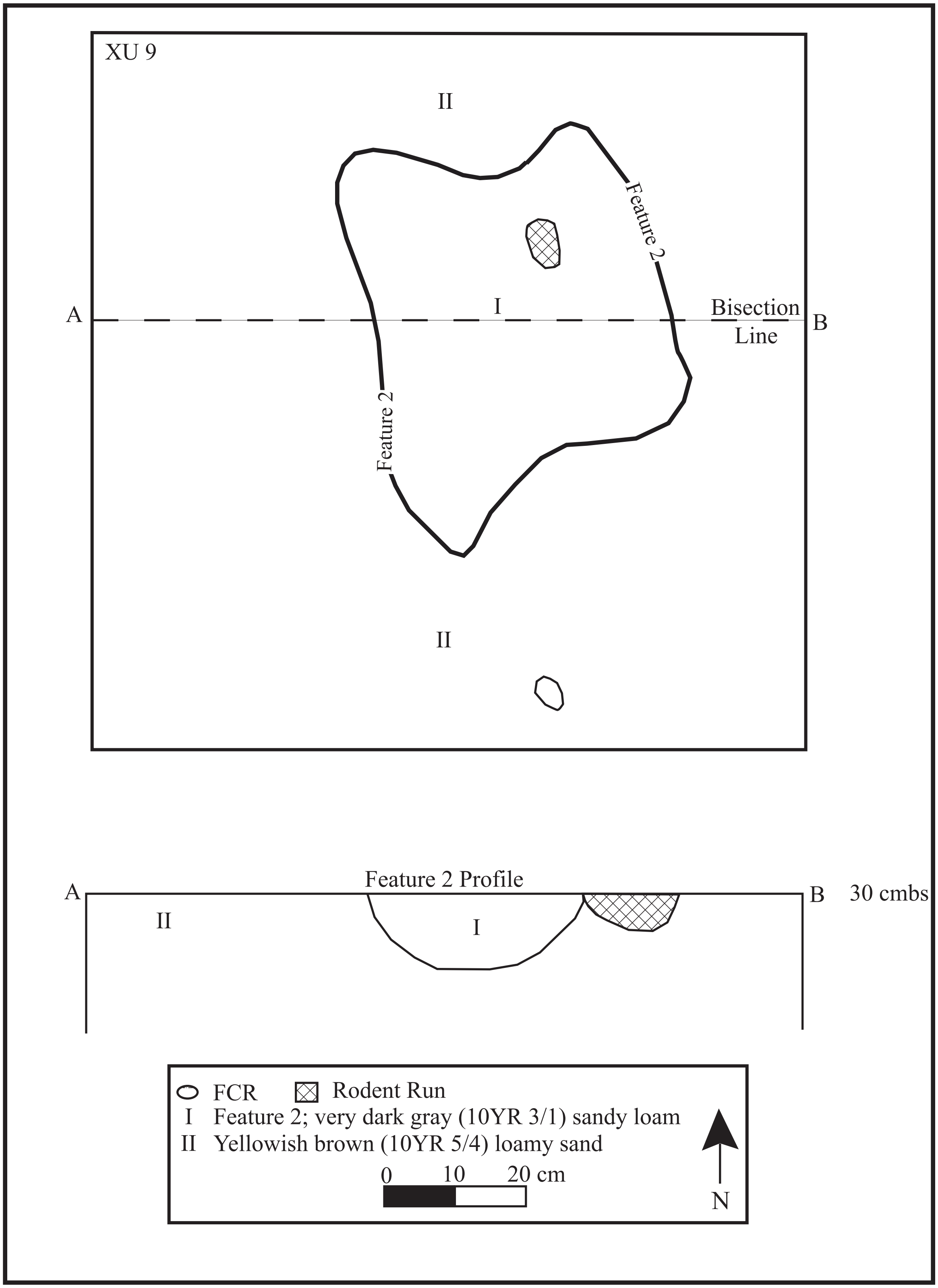


Figure 98. Site 21CA774 Feature 2 Planview in XU 9 at 30 cmbd.

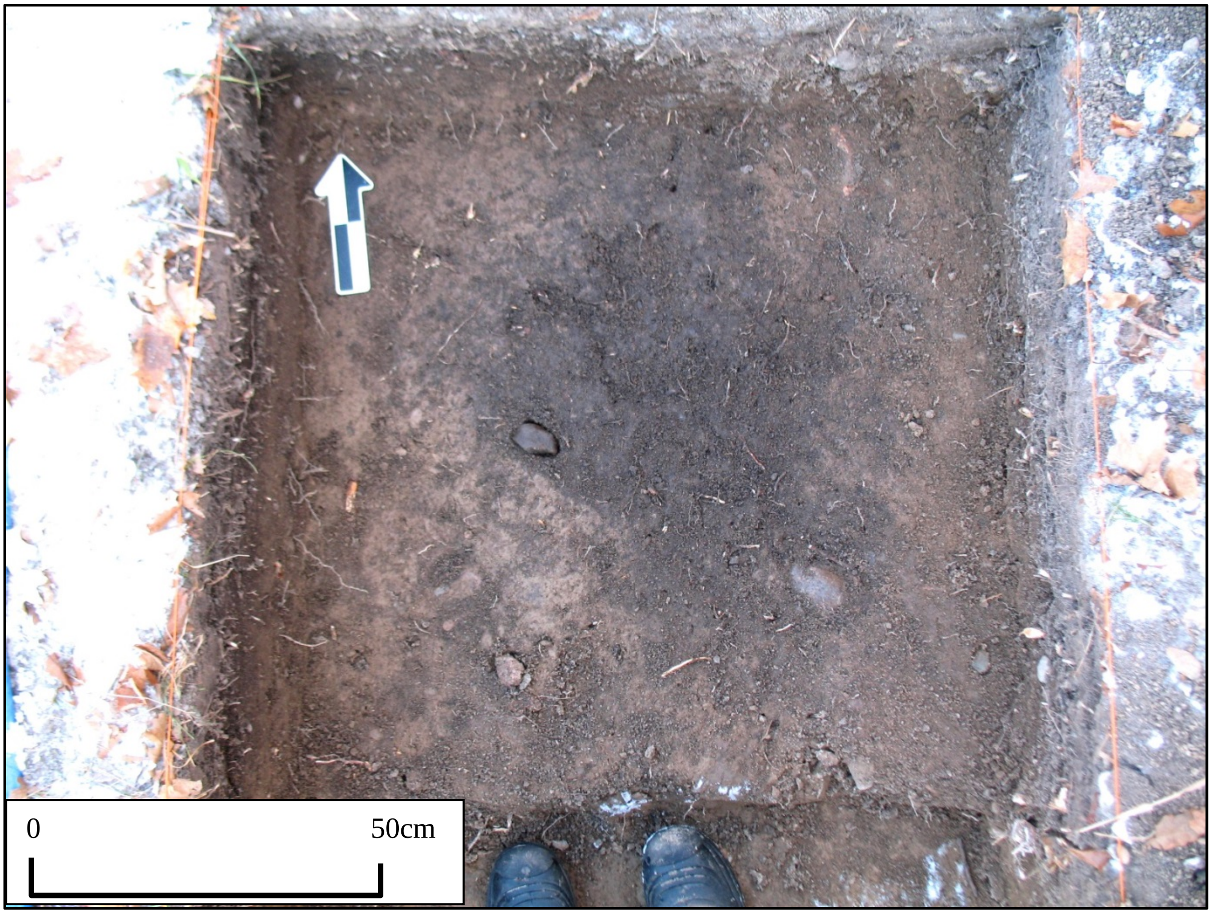


Figure 99. Site 21CA774 Photo Feature 3 Planview in XU 7 at 30 cmbd.

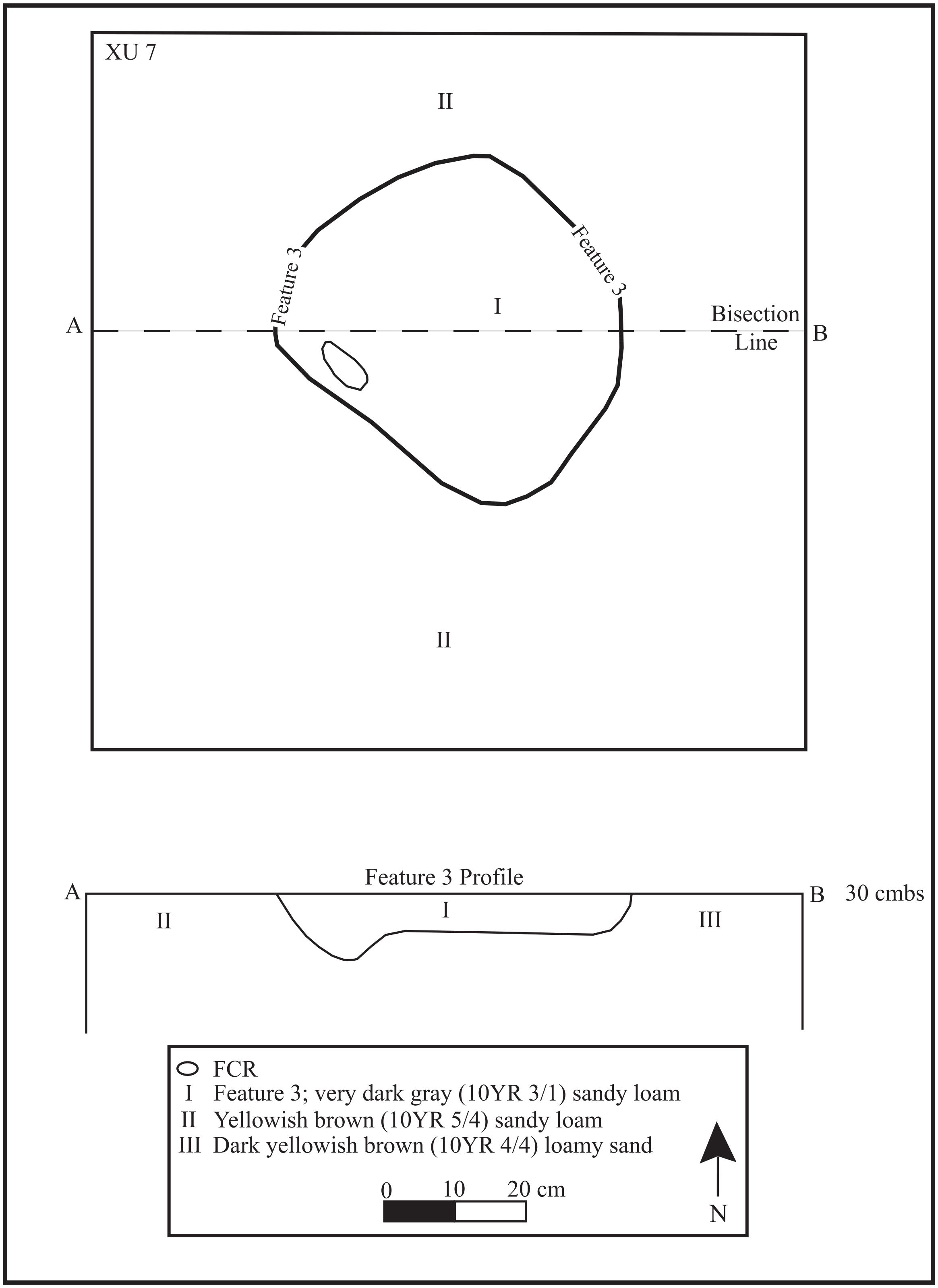


Figure 100. Site 21CA774 Feature 3 Planview in XU 7 at 30 cmbd.

Figure 101. Site 21CA774 Photo Feature 4 Planview in XU 8 at 26 cmbd.

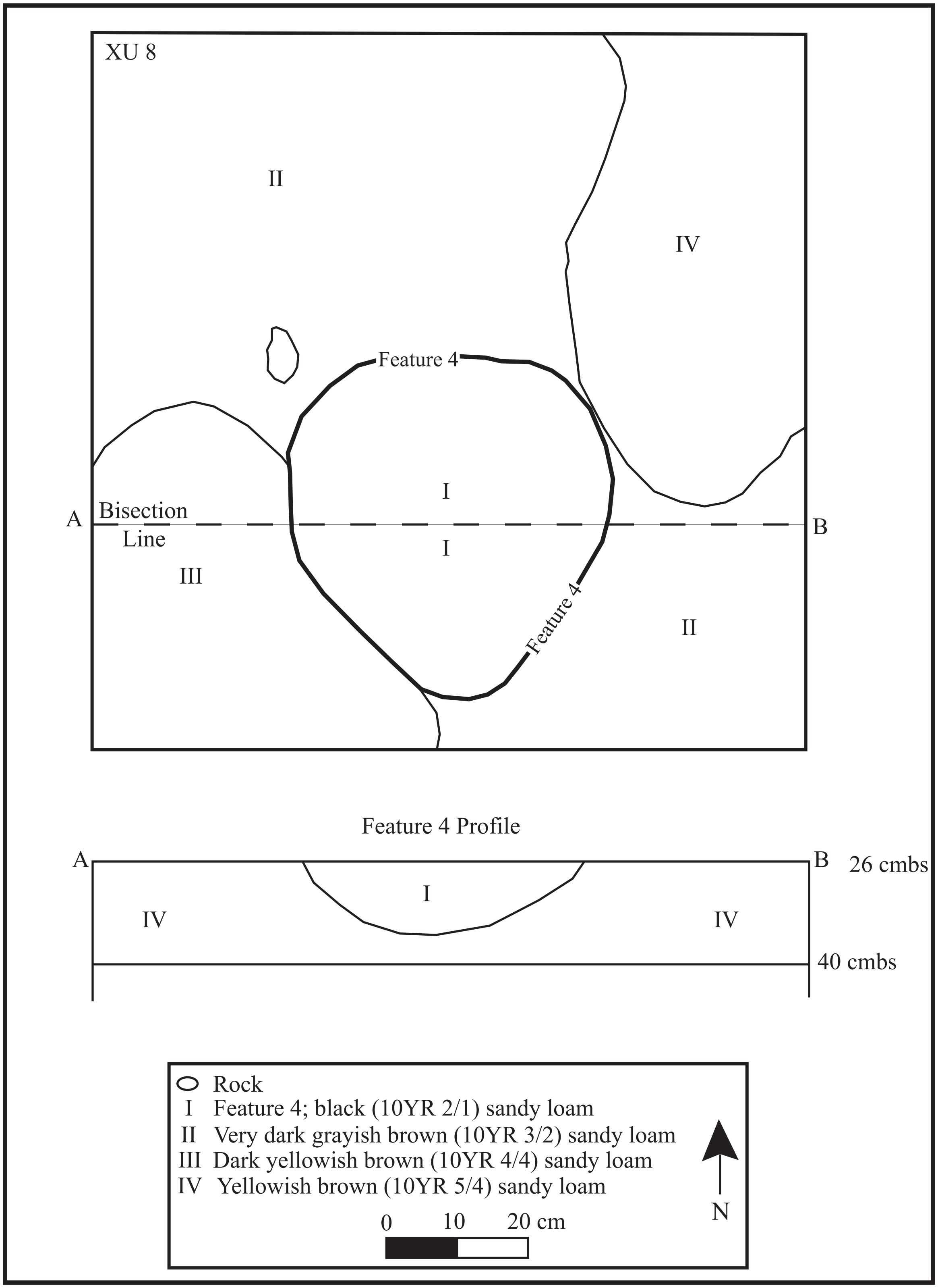
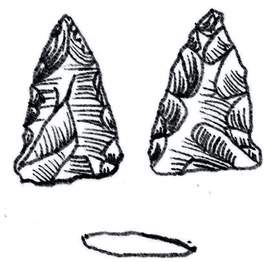


Figure 102. Site 21CA774 Feature 4 Planview in XU 8 at 26 cmbd.

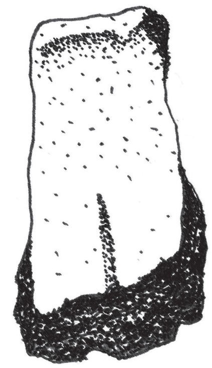

Figure 103. Site 21CA774 Photo XU 15 Wall Profile.


Figure 104. Site 21CA774 Photo XU 16 Wall Profile.



Catalog # 2016.79.56.1; ST 145ES25 (0-30 cmbs); projectile point, Swan River Chert

Figure 105. Site 21CA774 Photo and Illustration of Projectile Point from Shovel Test 145ES25.



Catalog # 2016.79.33.3; XU 4B (0-10 cmbs); Rim and neck, smooth surface

Figure 106. Site 21CA774 Photo and Illustration of Ceramic Rim Sherd from XU 4B, 0-10 cmbs.

14. SITE 21CA775

14.1 Overview

Site 21CA775 is a sparse precontact lithic scatter. The age and cultural affiliation of the site is unknown because of the absence of diagnostic artifacts. The site is in T135N, R29W, E1/2 NE NE Section 20 and W1/2 NW NW Section 21 (Figures 1 and 2). The site is 95 by 10 meters in size, and encompasses 0.2 acre. The UTM coordinates for center point of the site are E396300 N5150305 (1983 NAD Zone 15). A map of the site on aerial imagery is presented in Figure 107 at the end of this section. The survey corridor, centered on the existing CSAH 77 centerline, was 20 meters wide (66 feet).

14.2 Physical Setting and Soils

The site is on the east and west sides of CSAH 77 and extends from 75 to 175 meters south of Schaeffers Point Road. The south end of the site is approximately 215 meters north of Gull Lake. The site is situated on level to rolling terrain in a grassy along the edge of the woods. There was no surface visibility. Extensive areas within the survey corridor have been disturbed by previous road construction, including ditches, hill cuts, and blading. These areas are depicted on the site map.

Soils at the site are mapped as Graycalm loamy sand (Web Soil Survey 2015). These soils are somewhat excessively drained and formed in formed in sandy glaciofluvial deposits on outwash plains, glacial drainage channels, moraines, kames, and stream terraces. Soil profiles from the positive shovel tests are presented in Tables 97 and 98. The soils in the tests appear to be undisturbed.

Table 97. Site 21CA775 Shovel Test 158W Profile.

Depth Below Surface (cm)	Description
0-20	Black (10YR 2/1) sandy loam
20-32	Very dark grayish brown (10YR 3/2) sandy loam with brown (10YR 4/3) mottles
32-60	Brown (10YR 5/3) sandy loam
60-80	Brown (10YR 5/4) gravelly coarse sand; 8-15% gravel

Table 98. Site 21CA775 Shovel Test 212E Profile.

Depth Below Surface (cm)	Description
0-16	Black (10YR 2/1) sandy loam
16-29	Very dark grayish brown (10YR 3/2) gravelly sandy loam with brown (10YR 4/3) mottles; 5-10% gravel
29-45	Brown (10YR 5/3) gravelly sandy loam; 5-10% gravel
45-60	Brown (10YR 5/4) gravelly coarse sand; 8-15% gravel

14.3 Survey Methods and Results

The site was identified by shovel testing at 15-meter intervals. Radial tests were placed at five-meter intervals in a north-south orientation from the positive tests, as there was not enough room in the survey corridor for east-west radials. The radial tests were negative. A summary of artifacts is presented in Table 99.

Table 99. Site 21CA775 Artifact Summary.

Shovel Test #	Depth (cmbs)	Count	Artifact Description
158W	0-20	1	Broken flake, rhyolite
212E	0-20	1	Decortication flake, Swan River Chert

14.4 Artifact Analysis

The lithic assemblage is very sparse and has limited interpretive potential. The decortication flake indicates the initial stage of reduction. The broken flake is not diagnostic of a specific reduction stage or technology. All of the lithic raw materials are available in the regional glacial till and were likely procured from local sources (Bakken 2011).

14.5 Conclusions and Recommendations

Site 21CA775 is a sparse precontact lithic scatter consisting of two pieces of lithic debris. No diagnostic artifacts were recovered, and the cultural context and age is unknown. Site activities include lithic reduction. Radial shovel tests placed in five-meter intervals adjacent to the positive tests were negative. The soils at the site appear to be undisturbed.

Under Criterion D, the site lacks the potential to provide important information on the precontact period because it has a sparse and limited artifact assemblage. The site is recommended not eligible for listing on the NRHP. No further archaeological work is recommended at the site.

Figure 107. Site 21CA775 Map on Air Imagery.

15. Summary and Recommendations

Five precontact sites were identified during survey for the project (21CA771, 21CA772, 21CA773, 21CA774, and 21CA775). Phase II testing was conducted at all the sites, except 21CA775, to determine if they were eligible for listing on the NRHP. The Phase I archaeological survey and Phase II evaluations for the project are complete. It is the opinion of FCRS that no historic properties eligible for or listed on the NRHP will be affected by this project. A summary of the sites, their NRHP status, and recommendations is presented in Table 100.

Table 100. Site Summary and Recommendations.

Site	Cultural Context, Type, & Function	Eligible for NRHP	Project Affect	Recommendation
21CA771	Initial Woodland period (Brainerd), subsurface artifact scatter, habitation	No	No effect	No further archaeology work
21CA772	Middle/Late Archaic and Terminal Woodland period (Ogechie), subsurface artifact scatter, habitation	No	No effect	No further archaeology work
21CA773	Late Archaic period, subsurface artifact scatter, habitation	No	No effect	No further archaeology work
21CA774	Initial (Brainerd) and Terminal Woodland period, subsurface artifact scatter, habitation	No	No effect	No further archaeology work
21CA775	Indeterminate precontact period, sparse subsurface lithic scatter	No	No effect	No further archaeology work

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APPENDIX A: OFFICE OF STATE ARCHAEOLOGIST LICENSES

APPLICATION FOR MINNESOTA
ANNUAL ARCHAEOLOGICAL RECONNAISSANCE SURVEY LICENSE

This license only applies to reconnaissance (Phase I) surveys conducted under Minnesota Statutes 138.31-.42 during calendar year _2014_. Separate licenses must be obtained for site evaluation (Phase II) surveys, for major site investigations (Phase III), for burial site authentications under Minnesota statutes 307.08, and for survey work that will continue into another calendar year. Only the below listed individual is licensed as a Principal Investigator, not the institution/agency/company or others who work for that entity. The licensed individual is required to comply with all the conditions attached to this license form. Permission to enter land for the purposes of archaeological investigation must be obtained from the landowner or land manager.

Name: Frank Florin

Institution/Agency/Company Affiliation: Florin Cultural Resource Services, LLC

Title/Position: Owner and Principal Investigator

Address: N12902 273rd Street, Boyceville, WI 54725

Work Phone: (715) 643-2918 E-Mail: florin@pressenter.com

Name of Advanced Degree Institution: U of MN, Minneapolis Year: 1996

Name of Department: Interdisciplinary Archaeological Studies Degree: _X_MA __MS __PhD

Purpose: (check all that may apply)
CRM X Academic Research ___ Institutional Field School ___

Type of Land: (check all that may apply)
State Owned _X_ County Owned _X_ Township/City Owned _X_
Other non-federal public ___ List: ____________________

MHS Repository Agreement # __650_____ Other Approved Curation Facility:____________

Previous License: Year 2013 Type: Annual Number: 13-44

Signed (applicant):_ Frank Florin ________ Date: __4/5/14_________

Required Attachments: *Curriculum Vita* ___ and Documentation of Appropriate Experience ___ for previously unlicensed individuals.

Submit one copy of this form and attachments to:
Office of the State Archaeologist, Ft. Snelling History Center, St. Paul, MN 55111
612-725-2411 612-725-2729 FAX 612-725-2427 email: mnosa@state.mn.us

Minnesota Historical Society Approval: ____________ Date: 4-9-14
State Archaeologist Approval: ____________ Date: 4/8/14
License Number: 14-038

Form Date: 4/9/12

APPLICATION FOR MINNESOTA
EVALUATION/PHASE II SURVEY ARCHAEOLOGICAL LICENSE

This license only applies to evaluation investigations/Phase II surveys conducted under the provisions of Minnesota Statutes 138.31 - .42 at the specific site or locality listed on the application during calendar year 2014. Separate licenses must be obtained for reconnaissance (Phase I) surveys, for major investigation (Phase III) work, for burial site work under Minnesota statutes 307.08, for fieldwork that will continue into another calendar year, for fieldwork conducted at locations other than those listed below, and for fieldwork that significantly exceeds the Phase II specifications of the *SHPO Manual for Archaeological Projects in Minnesota.* Only the listed individual is licensed as a Principal Investigator, not the institution/agency/company or others who work for that entity. The licensed individual and the sponsoring entity are required to comply with all the conditions attached to the license.

Name: Frank Florin

Institution/Agency/Company Affiliation: Florin Cultural Resource Services, LLC

Title/Position: Owner and PI

Address: N12902 273rd Street Boycville, WI

Work Phone: (715) 643-2918 E-Mail: florin@pressenter.com

Name of Advanced Degree Institution: U of MN Year: 1996

Name of Department: IAS Degree: X MA __ MS __ PhD

Site Number: 280-1 and 280-2 Project: CSAH 77 Reconstruction

Type of Land: (check all that may apply)
State Owned __ County Owned X Township/City Owned __ Manager: ____
Other non-federal public __ List: ____

Purpose: (check all that may apply)
CRM X Academic Research ___ Institutional Field School ___

Expected Period Components/Contexts: Precontact X Contact ___ Post-Contact ___

MHS Repository Agreement # 650 Other Approved Curation Facility: ____

Signed (applicant): Frank Florin Date: 9/9/14

Required Attachments: 1) *Curriculum Vita* X 2) Documentation of Appropriate Experience X
3) Research Design X

Previous License: Year 2014 Type Phase I Number 14-038

Submit one copy of this form and attachments to:

Office of the State Archaeologist, Ft. Snelling History Center, St. Paul, MN 55111
612-725-2411 612-725-2729 FAX 612-725-2427 email: mnosa@state.mn.us

Minnesota Historical Society Approval: [signature] Date: 9-9-14
State Archaeologist Approval: [signature] Date: 9/9/14
License Number: 14-069

Form Date: 2/15/11

APPLICATION FOR MINNESOTA
EVALUATION/PHASE II SURVEY ARCHAEOLOGICAL LICENSE

This license only applies to evaluation investigations/Phase II surveys conducted under the provisions of Minnesota Statutes 138.31 - .42 at the specific site or locality listed on the application during calendar year 2014. Separate licenses must be obtained for reconnaissance (Phase I) surveys, for major investigation (Phase III) work, for burial site work under Minnesota statutes 307.08, for fieldwork that will continue into another calendar year, for fieldwork conducted at locations other than those listed below, and for fieldwork that significantly exceeds the Phase II specifications of the *SHPO Manual for Archaeological Projects in Minnesota*. Only the listed individual is licensed as a Principal Investigator, not the institution/agency/company or others who work for that entity. The licensed individual and the sponsoring entity are required to comply with all the conditions attached to the license.

Name: Frank Florin

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Title/Position: Owner and PI

Address: N12902 273rd Street Boycville, WI

Work Phone: (715) 643-2918 E-Mail: florin@pressenter.com

Name of Advanced Degree Institution: U of MN Year: 1996

Name of Department: IAS Degree: X MA __ MS __ PhD

Site Number: 280-3 Project: CSAH 77 Reconstruction

Type of Land: (check all that may apply)
State Owned __ County Owned X Township/City Owned __ Manager: ______
Other non-federal public __ List: ______

Purpose: (check all that may apply)
CRM X Academic Research __ Institutional Field School __

Expected Period Components/Contexts: Precontact X Contact __ Post-Contact __

MHS Repository Agreement # 650 Other Approved Curation Facility: ______

Signed (applicant): Frank Florin Date: 9/12/14

Required Attachments: 1) *Curriculum Vita* X 2) Documentation of Appropriate Experience X
3) Research Design X

Previous License: Year 2014 Type Phase I Number 14-038

Submit one copy of this form and attachments to:
Office of the State Archaeologist, Ft. Snelling History Center, St. Paul, MN 55111
612-725-2411 612-725-2729 FAX 612-725-2427 email: mnosa@state.mn.us

Minnesota Historical Society Approval: [signature] Date: 9-15-14
State Archaeologist Approval: [signature] Date: 9/15/14
License Number: 14-071

Form Date: 2/15/11

APPENDIX B: ARTIFACT CATALOGS

21CA771-Phase I Catalog

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Size Grade	Weight (g)	Date
1.1-2	2	ST 45W	0-45	Lithic	debris	bipolar flake			quartz	3 (<1/2"-1/4")	1.4	9/5/2014
1.3	1	ST 45W	0-45	Lithic	debris	bipolar flake			quartzite	3 (<1/2"-1/4")	0.7	9/5/2014
1.4	1	ST 45W	0-45	Lithic	debris	nonbifacial			quartzite	2 (<1"-1/2")	4.6	9/5/2014
1.5	1	ST 45W	0-45	Lithic	debris	nonbifacial			Animikie Silica	2 (<1"-1/2")	3.2	9/5/2014
1.6	1	ST 45W	0-45	Lithic	debris	nonbifacial			Jasper Taconite	2 (<1"-1/2")	2.3	9/5/2014
1.7	1	ST 45W	0-45	Lithic	debris	broken flake			Hixton Group Quartzite	3 (<1/2"-1/4")	0.4	9/5/2014
1.8	1	ST 45W	0-45	Lithic	debris	broken flake			unidentified chert	3 (<1/2"-1/4")	0.6	9/5/2014
1.9-10	2	ST 45W	0-45	Lithic	debris	broken flake			basaltic	3 (<1/2"-1/4")	1.5	9/5/2014
1.11	1	ST 45W	0-45	Lithic	debris	other G4 flake			basaltic	4 (<1/4")	0.3	9/5/2014
1.12	1	ST 45W	0-45	Lithic	debris	other G4 flake			rhyolite	4 (<1/4")	0.2	9/5/2014
1.13	1	ST 45W	0-45	Lithic	debris	other G4 flake			Jasper Taconite	4 (<1/4")	0.1	9/5/2014
1.14-15	2	ST 45W	0-45	Lithic	debris	other G4 flake			quartz	4 (<1/4")	0.4	9/5/2014
1.16	1	ST 45W	0-45	Lithic	debris	shatter			rhyolite	3 (<1/2"-1/4")	0.7	9/5/2014
1.17	1	ST 45W	0-45	Lithic	debris	shatter			quartz	3 (<1/2"-1/4")	0.6	9/5/2014
1.0	1	ST 45W	0-45	Lithic	fire-cracked rock	angular			quartzite	2 (<1"-1/2")	9	9/5/2014
1.0	1	ST 45W	0-45	Lithic	fire-cracked rock	spall			granitic	3 (<1/2"-1/4")	1	9/5/2014
1.0	2	ST 45W	0-45	Lithic	fire-cracked rock	spall			unidentified material	3 (<1/2"-1/4")	2	9/5/2014
2.1	1	ST 46W	0-20	Lithic	core	bipolar (not rotated)			unidentified material	2 (<1"-1/2")	3.4	9/5/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Size Grade	Weight (g)	Date
2.2	1	ST 46W	0-20	Lithic	debris	broken flake			Knife Lake Siltstone	3 (<1/2"-1/4")	0.1	9/5/2014
2.3	1	ST 46W	0-20	Lithic	debris	other G4 flake			unidentified material	4 (<1/4")	0.2	9/5/2014
3.1	1	ST 83E	0-20	Lithic	debris	broken flake			quartz	3 (<1/2"-1/4")	0.3	9/5/2014
946.0	1	ST 44W	0-40	Lithic	fire-cracked rock	spall			unidentified material	3 (<1/2"-1/4")	1	9/5/2014

21CA771-Phase II Catalog

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Size Grade	Weight (g)	Date	Artifact Notes
1.1	1	ST 44WN10	0-20	Lithic	debris	broken flake			unidentified material	3 (<1/2"-1/4")	0.9	9/5/2014	
1.0	1	ST 44WN10	0-20	Lithic	fire-cracked rock	spall			granitic	3 (<1/2"-1/4")	1	9/5/2014	
2.1	1	ST 44WN10	20-40	Lithic	debris	broken flake			quartz	3 (<1/2"-1/4")	0.9	9/5/2014	
3.1-2	2	ST 45WN5	0-30	Lithic	debris	decortication			Red River Chert	2 (<1"-1/2")	3.7	9/5/2014	
3.3	1	ST 45WN5	0-30	Lithic	debris	nonbifacial			unidentified chert	3 (<1/2"-1/4")	0.2	9/5/2014	
3.4-6	3	ST 45WN5	0-30	Lithic	debris	broken flake			basaltic	3 (<1/2"-1/4")	1.3	9/5/2014	
3.7-8	2	ST 45WN5	0-30	Lithic	debris	other G4 flake			Lake Superior Agate	3 (<1/2"-1/4")	1.8	9/5/2014	
3.9	1	ST 45WN5	0-30	Lithic	debris	other G4 flake			Lake Superior Agate	4 (<1/4")	0.3	9/5/2014	
3.1	1	ST 45WN5	0-30	Lithic	debris	broken flake			quartzite	3 (<1/2"-1/4")	0.2	9/5/2014	
3.11	1	ST 45WN5	0-30	Lithic	debris	shatter			quartz	3 (<1/2"-1/4")	1.1	9/5/2014	
4.1	1	ST 45WN5	30-60	Lithic	debris	decortication			unidentified chert	3 (<1/2"-1/4")	1.7	9/5/2014	
5.1	1	ST 46WN5	0-30	Lithic	debris	bipolar flake			unidentified material	3 (<1/2"-1/4")	1.1	9/5/2014	
5.2	1	ST 46WN5	0-30	Lithic	debris	broken flake			basaltic	2 (<1"-1/2")	3	9/5/2014	
5.3	1	ST 46WN5	0-30	Lithic	debris	broken flake			basaltic	3 (<1/2"-1/4")	0.5	9/5/2014	
5.0	1	ST 46WN5	0-30	Lithic	fire-cracked rock	spall			granitic	1 (<2"-1")	27	9/5/2014	
5.0	1	ST 46WN5	0-30	Lithic	fire-cracked rock	spall			granitic	3 (<1/2"-1/4")	1	9/5/2014	

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Size Grade	Weight (g)	Date	Artifact Notes
5.0	1	ST 46WN5	0-30	Lithic	fire-cracked rock	spall			unidentified material	2 (<1"-1/2")	11	9/5/2014	
6.1	1	ST 46WN7	0-30	Lithic	debris	broken flake			quartz	3 (<1/2"-1/4")	1	9/16/2014	
6.2	1	ST 46WN7	0-30	Lithic	debris	shatter			quartz	2 (<1"-1/2")	3.9	9/16/2014	
7.1	1	ST 46WS5	0-30	Lithic	debris	broken flake			quartzite	3 (<1/2"-1/4")	0.4	9/5/2014	
7.2	1	ST 46WS5	0-30	Lithic	debris	broken flake			basaltic	3 (<1/2"-1/4")	0.4	9/5/2014	
7.3	1	ST 46WS5	0-30	Lithic	debris	shatter			quartzite	2 (<1"-1/2")	8.8	9/5/2014	
7.0	1	ST 46WS5	0-30	Lithic	fire-cracked rock	angular			quartzite	2 (<1"-1/2")	26	9/5/2014	
7.0	2	ST 46WS5	0-30	Lithic	fire-cracked rock	angular			granitic	1 (<2"-1")	21	9/5/2014	
8.1	1	ST 47WS5	25-50	Lithic	core	freehand nonbifacial	unpatterned (multi-directional)	unprepared	quartz	1 (<2"-1")	82.1	9/5/2014	
8.2-3	2	ST 47WS5	25-50	Lithic	debris	shatter			quartz	2 (<1"-1/2")	7.2	9/5/2014	
9.1	1	ST 47WW5	0-30	Lithic	debris	broken flake			quartzite	2 (<1"-1/2")	1.7	9/16/2014	
11.1	1	XU 1	0-10	Lithic	debris	bipolar flake			Red River Chert	2 (<1"-1/2")	11	9/16/2014	
11.2	1	XU 1	0-10	Lithic	debris	broken flake			quartzite	3 (<1/2"-1/4")	1.7	9/16/2014	
11.0	1	XU 1	0-10	Historic	metal	iron	spring			4 (<1/4")	0.1	9/16/2014	
11.0	2	XU 1	0-10	Historic	metal	iron	nail, round			3 (<1/2"-1/4")	13.3	9/16/2014	
11.0	2	XU 1	0-10	Historic	nonorganic	plastic	fragment			3 (<1/2"-1/4")	0.6	9/16/2014	
12.1	1	XU 1	10-20	Lithic	debris	nonbifacial			quartz	2 (<1"-1/2")	8.4	9/16/2014	
12.2-3	2	XU 1	10-20	Lithic	debris	broken flake			quartz	3 (<1/2"-1/4")	0.5	9/16/2014	

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Size Grade	Weight (g)	Date	Artifact Notes
12.0	1	XU 1	10-20	Lithic	fire-cracked rock	angular			unidentified material	2 (<1"-1/2")	9	9/16/2014	
13.1	1	XU 1	30-40	Lithic	debris	bifacial thinning			Knife Lake Siltstone	3 (<1/2"-1/4")	1	9/16/2014	
14.1	1	XU 2	40-50	Lithic	debris	bifacial shaping			quartzite	4 (<1/4")	0.2	9/16/2014	
15.1	1	XU 3	10-20	Lithic	debris	nonbifacial			unidentified material	3 (<1/2"-1/4")	0.9	9/16/2014	
15.2	1	XU 3	10-20	Lithic	debris	decortication			Tongue River Silica	3 (<1/2"-1/4")	1	9/16/2014	
15.3	1	XU 3	10-20	Lithic	debris	bifacial thinning			rhyolite	3 (<1/2"-1/4")	0.8	9/16/2014	
15.4	1	XU 3	10-20	Lithic	debris	bifacial thinning			Knife Lake Siltstone	2 (<1"-1/2")	6.6	9/16/2014	
15.5	1	XU 3	10-20	Lithic	debris	broken flake			quartz	3 (<1/2"-1/4")	0.4	9/16/2014	
15.6	1	XU 3	10-20	Lithic	debris	broken flake			Tongue River Silica	3 (<1/2"-1/4")	0.5	9/16/2014	
15.7-8	2	XU 3	10-20	Ceramic	body	grit temper	net impressed			2 (<1"-1/2")	6.8	9/16/2014	6.4 & 5.9 mm
16.1	1	XU 4	10-20	Ceramic	body	grit temper	net impressed			3 (<1/2"-1/4")	1	9/16/2014	5.9 mm
16.0	1	XU 4	10-20	Lithic	fire-cracked rock	angular			granitic	1 (<2"-1")	27	9/16/2014	
17.1	1	XU 5	10-20	Lithic	debris	bifacial thinning			unidentified material	2 (<1"-1/2")	1.1	9/16/2014	
17.2	1	XU 5	10-20	Lithic	debris	decortication			Knife Lake Siltstone	3 (<1/2"-1/4")	0.6	9/16/2014	
17.3	1	XU 5	10-20	Lithic	debris	decortication			unidentified chert	3 (<1/2"-1/4")	0.9	9/16/2014	
17.4	1	XU 5	10-20	Lithic	debris	broken flake			Jasper Taconite	3 (<1/2"-1/4")	0.6	9/16/2014	

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Size Grade	Weight (g)	Date	Artifact Notes
17.5	1	XU 5	10-20	Lithic	debris	broken flake			Knife Lake Siltstone	3 (<1/2"-1/4")	0.2	9/16/2014	
17.0	2	XU 5	10-20	Lithic	fire-cracked rock	angular			granitic	1 (<2"-1")	339	9/16/2014	
17.0	1	XU 5	10-20	Lithic	fire-cracked rock	angular			granitic	2 (<1"-1/2")	4	9/16/2014	
17.0	1	XU 5	10-20	Lithic	fire-cracked rock	angular			metamorphic	1 (<2"-1")	89	9/16/2014	
17.0	1	XU 5	10-20	Lithic	fire-cracked rock	angular			unidentified material	1 (<2"-1")	119	9/16/2014	
17.0	2	XU 5	10-20	Lithic	fire-cracked rock	angular			quartzite	1 (<2"-1")	192	9/16/2014	
17.0	1	XU 5	10-20	Lithic	fire-cracked rock	angular			igneous	2 (<1"-1/2")	10	9/16/2014	
17.0	1	XU 5	10-20	Lithic	fire-cracked rock	spall			unidentified material	2 (<1"-1/2")	4	9/16/2014	
17.0	1	XU 5	10-20	Lithic	fire-cracked rock	split cobble			granitic	0 (<4"-2")	248	9/16/2014	
18.1	1	XU 5	20-30	Lithic	debris	broken flake			Knife Lake Siltstone	3 (<1/2"-1/4")	0.3	9/16/2014	
18.2	1	XU 5	20-30	Lithic	debris	broken flake			quartzite	3 (<1/2"-1/4")	0.3	9/16/2014	
18.3	1	XU 5	20-30	Lithic	debris	broken flake			Lake Superior Agate	3 (<1/2"-1/4")	0.3	9/16/2014	
18.4	1	XU 5	20-30	Lithic	debris	broken flake			Border Lakes Group	3 (<1/2"-1/4")	0.9	9/16/2014	
18.5	1	XU 5	20-30	Lithic	debris	broken flake			unidentified chert	3 (<1/2"-1/4")	0.3	9/16/2014	
18.6	1	XU 5	20-30	Lithic	debris	other G4 flake			unidentified chert	4 (<1/4")	0.1	9/16/2014	

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Size Grade	Weight (g)	Date	Artifact Notes
18.0	2	XU 5	20-30	Lithic	fire-cracked rock	angular			unidentified material	2 (<1"-1/2")	18	9/16/2014	
18.0	1	XU 5	20-30	Lithic	fire-cracked rock	spall			quartzite	2 (<1"-1/2")	16	9/16/2014	
10.1	1	XU 5	30-40	Lithic	tool	unpatterned flake (bifacial retouch)	retouched flake	broken	Knife Lake Siltstone	3 (<1/2"-1/4")	1.1	9/16/2014	broken/ worn out, medial
10.2	1	XU 5	30-40	Lithic	debris	bipolar flake			unidentified chert	3 (<1/2"-1/4")	1.9	9/16/2014	
10.3	1	XU 5	30-40	Lithic	debris	bipolar flake			Lake Superior Agate	2 (<1"-1/2")	6.5	9/16/2014	
10.4	1	XU 5	30-40	Lithic	debris	bipolar flake			unidentified chert	2 (<1"-1/2")	2.1	9/16/2014	
10.5	1	XU 5	30-40	Lithic	debris	nonbifacial			unidentified chert	3 (<1/2"-1/4")	0.2	9/16/2014	
10.6	1	XU 5	30-40	Lithic	debris	nonbifacial			unidentified chert	3 (<1/2"-1/4")	0.5	9/16/2014	
10.7	1	XU 5	30-40	Lithic	debris	nonbifacial			Red River Chert	3 (<1/2"-1/4")	1.4	9/16/2014	
10.8	1	XU 5	30-40	Lithic	debris	nonbifacial			unidentified chert	3 (<1/2"-1/4")	0.7	9/16/2014	
10.9	1	XU 5	30-40	Lithic	debris	decortication			quartz	2 (<1"-1/2")	8.9	9/16/2014	
10.1	1	XU 5	30-40	Lithic	debris	nonbifacial			quartzite	2 (<1"-1/2")	4.5	9/16/2014	
10.11	1	XU 5	30-40	Lithic	debris	nonbifacial			unidentified chert	3 (<1/2"-1/4")	0.5	9/16/2014	
10.12	1	XU 5	30-40	Lithic	debris	broken flake			quartzite	3 (<1/2"-1/4")	0.4	9/16/2014	
10.13	1	XU 5	30-40	Lithic	debris	other G4 flake			unidentified chert	4 (<1/4")	0.3	9/16/2014	
947.0	1	XU 3	20-30	Lithic	fire-cracked rock	angular			granitic	1 (<2"-1")	122	9/16/2014	

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Size Grade	Weight (g)	Date	Artifact Notes
947.0	1	XU 3	20-30	Lithic	fire-cracked rock	angular			quartzite	2 (<1"-1/2")	18	9/16/2014	
947.0	1	XU 3	20-30	Lithic	fire-cracked rock	crumb			quartzite	4 (<1/4")	1	9/16/2014	
948.0	1	ST 47WSW6	0-30	Lithic	fire-cracked rock	angular			basaltic	0 (<4"-2")	154	9/16/2014	

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Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
1.1	1	ST 49W	0-30	Lithic	debris	bifacial thinning			unidentified chert	0%	probably heat treated	3 (<1/2"-1/4")	1		9/8/2014
1	1	ST 49W	0-30	Lithic	fire-cracked rock	angular/spall			basaltic			2 (<1"-1/2")	18		9/8/2014
2.1	1	ST 88E	0-30	Faunal	mammalian, medium/large	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	1.2		9/8/2014
2	1	ST 88E	0-30	Lithic	fire-cracked rock	angular			metamorphic			2 (<1"-1/2")	7		9/8/2014
2	1	ST 88E	0-30	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	12		9/8/2014
2	1	ST 88E	0-30	Lithic	fire-cracked rock	friable rounded piece			granitic			3 (<1/2"-1/4")	3		9/8/2014
3.1	1	ST 89E	0-30	Lithic	debris	bifacial thinning			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	0.7		9/8/2014
3.2	1	ST 89E	0-30	Faunal	mammalian	unidentifiable	fragment	burned				3 (<1/2"-1/4")	1.2		9/8/2014
3.3	1	ST 89E	0-30	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.4		9/8/2014
3	1	ST 89E	0-30	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	1		9/8/2014
4.1-4	4	ST 89E	30-70	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	1.1		9/8/2014
5.1-2	2	ST 90E	0-30	Ceramic	body	grit temper	smooth					2 (<1"-1/2")	7	3.0 & 3.5 mm	9/8/2014
5.3-6	4	ST 90E	0-30	Ceramic	body	grit temper	smooth					3 (<1/2"-1/4")	2.8	3.8,3.8,3.4,2.9 mm	9/8/2014
5.7-8	2	ST 90E	0-30	Ceramic	body	grit temper	smooth		interior absent			2 (<1"-1/2")	4		9/8/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
5.9-12	4	ST 90E	0-30	Ceramic	body	grit temper	smooth		interior absent			3 (<1/2"-1/4")	1.7		9/8/2014
5.13-15	3	ST 90E	0-30	Ceramic	body	grit temper	undetermined		exterior absent			3 (<1/2"-1/4")	1.2		9/8/2014
5	1	ST 90E	0-30	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	39		9/8/2014
5	1	ST 90E	0-30	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	3		9/8/2014
5	1	ST 90E	0-30	Lithic	fire-cracked rock	cobble (non-friable)			granitic			0 (<4"-2")	753		9/8/2014
5.16	1	ST 90E	0-30	Ceramic	body	grit temper	smooth	trailed			Ogechie	2 (<1"-1/2")	7.2	refit; 4.2 mm	9/8/2014
5.17-19	3	ST 90E	0-30	Ceramic	rim	grit temper	smooth		interior absent		Ogechie	3 (<1/2"-1/4")	2.6	refit	9/8/2014
5.2	1	ST 90E	0-30	Ceramic	body	grit temper	smooth	trailed	interior absent		Ogechie	3 (<1/2"-1/4")	1.2		9/8/2014
6.1-2	2	ST 90E	30-80	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	1.7		9/8/2014
6.3-5	3	ST 90E	30-80	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.5		9/8/2014
6.6	1	ST 90E	30-80	Lithic	debris	bifacial thinning			Knife River Flint	0%		3 (<1/2"-1/4")	0.6		9/8/2014
6.7	1	ST 90E	30-80	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	1		9/8/2014
6	1	ST 90E	30-80	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	21		9/8/2014
6	1	ST 90E	30-80	Lithic	fire-cracked rock	angular			igneous			3 (<1/2"-1/4")	1		9/8/2014
6	1	ST 90E	30-80	Lithic	fire-cracked rock	angular			quartzite			3 (<1/2"-1/4")	3		9/8/2014
7.1	1	ST 91E	0-30	Lithic	debris	decortication			jasper	100%		3 (<1/2"-1/4")	0.3		9/8/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
7	1	ST 91E	0-30	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	2		9/8/2014
7	1	ST 91E	0-30	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	1		9/8/2014
7	1	ST 91E	0-30	Lithic	fire-cracked rock	spall			basaltic			3 (<1/2"-1/4")	1		9/8/2014
8.1	1	ST 92E	0-30	Lithic	debris	bipolar flake			unidentified chert	>0-<50%		3 (<1/2"-1/4")	1.6		9/8/2014
8.2	1	ST 92E	0-30	Lithic	debris	broken flake			unidentified material	0%	burned	3 (<1/2"-1/4")	0.8		9/8/2014
8.3	1	ST 92E	0-30	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	0.7		9/8/2014
8	2	ST 92E	0-30	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	80		9/8/2014
8	2	ST 92E	0-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	231		9/8/2014
8	2	ST 92E	0-30	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	5		9/8/2014
8	2	ST 92E	0-30	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	47		9/8/2014
8	3	ST 92E	0-30	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	30		9/8/2014
8	2	ST 92E	0-30	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	9		9/8/2014
8	7	ST 92E	0-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	66		9/8/2014
8	1	ST 92E	0-30	Lithic	fire-cracked rock	spall			unidentified material			1 (<2"-1")	23		9/8/2014
8	1	ST 92E	0-30	Lithic	fire-cracked rock	spall			unidentified material			3 (<1/2"-1/4")	1		9/8/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
8	2	ST 92E	0-30	Lithic	fire-cracked rock	crumb			granitic			4 (<1/4")	1		9/8/2014
9.1	1	ST 97E	0-30	Lithic	debris	broken flake			unidentified material	0%		2 (<1"-1/2")	3.5		9/8/2014
9.2-3	2	ST 97E	0-30	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.8		9/8/2014
9.4	1	ST 97E	0-30	Lithic	debris	other G4 flake			quartz	0%		3 (<1/2"-1/4")	0.4		9/8/2014
10.1	1	ST 98E	0-30	Lithic	debris	broken flake			rhyolite	0%		3 (<1/2"-1/4")	0.7		9/8/2014
10.2	1	ST 98E	0-30	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.4		9/8/2014
10.3	1	ST 98E	0-30	Lithic	debris	shatter			quartz	50-<100%		2 (<1"-1/2")	4.5		9/8/2014
11.1	1	ST 99E	0-30	Lithic	debris	bipolar flake			basaltic	0%		3 (<1/2"-1/4")	3.1		9/8/2014
12.1	1	ST 100E	0-40	Lithic	debris	shatter			quartz	>0-<50%		3 (<1/2"-1/4")	1.9		9/8/2014
13.1	1	ST 87E	0-20	Lithic	tool	patterned flake (bifacial retouch)	projectile point	unidentified	Knife Lake Siltstone	0%		3 (<1/2"-1/4")	0.7	small side-notched type; finished, whole	9/8/2014
966	1	ST 87E	20-40	Lithic	fire-cracked rock	angular			metamorphic			2 (<1"-1/2")	9		9/8/2014
966	1	ST 87E	20-40	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	2		9/8/2014
967	1	ST 91E	30-60	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	1		9/8/2014
967	1	ST 91E	30-60	Lithic	fire-cracked rock	angular			unidentified material			3 (<1/2"-1/4")	1		9/8/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
968	1	ST 96E	0-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	125		9/8/2014
969	1	ST 96E	60-80	Lithic	fire-cracked rock	spall			unidentified material			3 (<1/2"-1/4")	2		9/8/2014

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Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
1.1	1	ST 48WN5	0-30	Lithic	debris	bifacial thinning			rhyolite	0%		3 (<1/2"-1/4")	0.4		9/17/2014
2.1	1	ST 87ES10	0-30	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.2		9/17/2014
2	1	ST 87ES10	0-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	16		9/17/2014
2	1	ST 87ES10	0-30	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	4		9/17/2014
3.1	1	ST 89ES5	0-30	Lithic	tool	patterned flake	end scraper	decortication	Swan River Chert	50-<100%	probably heat treated	2 (<1"-1/2")	3.2		9/17/2014
3.2	1	ST 89ES5	0-30	Lithic	debris	bipolar flake			Lake Superior Agate	>0-<50%	burned	3 (<1/2"-1/4")	1.6		9/17/2014
3.3-4	2	ST 89ES5	0-30	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	1.3		9/17/2014
3.5	1	ST 89ES5	0-30	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.3		9/17/2014
3	1	ST 89ES5	0-30	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	9		9/17/2014
3	2	ST 89ES5	0-30	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	2		9/17/2014
3	1	ST 89ES5	0-30	Lithic	fire-cracked rock	friable rounded piece			granitic			3 (<1/2"-1/4")	2		9/17/2014
4.1	1	ST 89ES5	70-90	Lithic	debris	bipolar flake			quartz	0%		3 (<1/2"-1/4")	0.9		9/17/2014
4.2	1	ST 89ES5	70-90	Lithic	debris	broken flake			Prairie du Chien Chert (oolitic)	0%		3 (<1/2"-1/4")	0.2		9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
4	1	ST 89ES5	70-90	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	5		9/17/2014
5.1	1	ST 90EN5	0-30	Lithic	debris	broken flake			quartz	0%		2 (<1"-1/2")	2.4		9/17/2014
5.2-3	2	ST 90EN5	0-30	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.9		9/17/2014
5.4	1	ST 90EN5	0-30	Lithic	debris	broken flake			Lake Superior Agate	0%	probably heat treated	3 (<1/2"-1/4")	0.2		9/17/2014
5	1	ST 90EN5	0-30	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	14		9/17/2014
5	1	ST 90EN5	0-30	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	6		9/17/2014
5	1	ST 90EN5	0-30	Lithic	fire-cracked rock	cobble with angular			quartzite			0 (<4"-2")	217		9/17/2014
5	1	ST 90EN5	0-30	Lithic	fire-cracked rock	cobble (friable)			granitic			1 (<2"-1")	154		9/17/2014
6.1	1	ST 90ES5	0-30	Lithic	debris	broken flake			Jasper Taconite	0%		3 (<1/2"-1/4")	0.3		9/17/2014
6	1	ST 90ES5	0-30	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	9		9/17/2014
6	1	ST 90ES5	0-30	Lithic	fire-cracked rock	angular			quartzite			3 (<1/2"-1/4")	3		9/17/2014
6	1	ST 90ES5	0-30	Lithic	fire-cracked rock	friable rounded piece			granitic			3 (<1/2"-1/4")	2		9/17/2014
7.1	1	ST 90ES5	65-85	Faunal	mammalian, small	unidentifiable	fragment	calcined				4 (<1/4")	0.1		9/17/2014
7.2-4	3	ST 90ES5	65-85	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.6		9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
8.1	1	ST 91ES5	0-30	Lithic	debris	decortication			basaltic	100%		2 (<1"-1/2")	14.6		9/17/2014
8.2	1	ST 91ES5	0-30	Lithic	debris	broken flake			quartz	>0-<50%		3 (<1/2"-1/4")	1		9/17/2014
8	2	ST 91ES5	0-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	136		9/17/2014
8	4	ST 91ES5	0-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	43		9/17/2014
8	3	ST 91ES5	0-30	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	45		9/17/2014
8	1	ST 91ES5	0-30	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	34		9/17/2014
8	1	ST 91ES5	0-30	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	27		9/17/2014
8	1	ST 91ES5	0-30	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	3		9/17/2014
8	1	ST 91ES5	0-30	Lithic	fire-cracked rock	spall			basaltic			1 (<2"-1")	24		9/17/2014
8	1	ST 91ES5	0-30	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	7		9/17/2014
8	1	ST 91ES5	0-30	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	2		9/17/2014
8	1	ST 91ES5	0-30	Lithic	fire-cracked rock	friable rounded piece			granitic			2 (<1"-1/2")	11		9/17/2014
9.1	1	ST 92ES5	0-30	Lithic	debris	bipolar flake			Tongue River Silica	50-<100%	heat treated	1 (<2"-1")	31.2		9/17/2014
9.2	1	ST 92ES5	0-30	Lithic	core	freehand nonbifacial	unpatterned (multi-directional)	unprepared	Tongue River Silica	50-<100%		2 (<1"-1/2")	20.1		9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
9.3	1	ST 92ES5	0-30	Lithic	debris	decortication			chalcedony	100%		3 (<1/2"-1/4")	2.6		9/17/2014
9.4	1	ST 92ES5	0-30	Lithic	debris	nonbifacial			quartz	0%		2 (<1"-1/2")	4.2		9/17/2014
9.5	1	ST 92ES5	0-30	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.5		9/17/2014
9	2	ST 92ES5	0-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	289		9/17/2014
9	1	ST 92ES5	0-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	17		9/17/2014
9	1	ST 92ES5	0-30	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	6		9/17/2014
9	1	ST 92ES5	0-30	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	39		9/17/2014
10.1	1	ST 95ES7	0-30	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	1.1		9/17/2014
11.1	1	XU 1	0-10	Lithic	debris	bipolar flake			quartz	100%		2 (<1"-1/2")	9.7		9/17/2014
11.2	1	XU 1	0-10	Lithic	debris	bipolar flake			Lake Superior Agate	50-<100%		3 (<1/2"-1/4")	3.2		9/17/2014
11.3	1	XU 1	0-10	Lithic	debris	nonbifacial			quartzite	>0-<50%		2 (<1"-1/2")	5.9		9/17/2014
11.4-5	2	XU 1	0-10	Ceramic	neck	grit temper	smooth					2 (<1"-1/2")	7.2	5.2 & 4.4 mm	9/17/2014
11.6	1	XU 1	0-10	Ceramic	body	grit temper	cord marked					2 (<1"-1/2")	2.5	3.9 mm	9/17/2014
11.7-10	4	XU 1	0-10	Ceramic	body	grit temper	smooth			residue present		2 (<1"-1/2")	9.3	4.8,3.9,4.5,4.0mm	9/17/2014
11.11-12	2	XU 1	0-10	Ceramic	body	grit temper	smooth			residue present		3 (<1/2"-1/4")	2.1	3.9 & 2.5 mm	9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
11.13-16	4	XU 1	0-10	Ceramic	body	grit temper	smooth			residue present		2 (<1"-1/2")	13.9	3.7,4.9,3.5,5.1 mm	9/17/2014
11.17-27	11	XU 1	0-10	Ceramic	body	grit temper	smooth					2 (<1"-1/2")	24.8	3.5,4.5,3.9,3.8,4.5,5.5,3.6,4.9,4.4,3.4, 4.5 mm	9/17/2014
11.28-41	14	XU 1	0-10	Ceramic	body	grit temper	smooth					3 (<1/2"-1/4")	9.8	3.4,3.3,3.3,2.8,3.8,3.1,4.2,4.1,3.6,4.2,3.6,3.6,3.4,3.1 mm	9/17/2014
11.42-45	4	XU 1	0-10	Ceramic	body	grit temper	smooth		interior absent			3 (<1/2"-1/4")	2.2		9/17/2014
11.46-47	2	XU 1	0-10	Ceramic	rim	grit temper	undetermined		exterior absent			3 (<1/2"-1/4")	2.5		9/17/2014
11.48-50	3	XU 1	0-10	Ceramic	body	grit temper	undetermined		exterior absent			2 (<1"-1/2")	7.2		9/17/2014
11.51-54	4	XU 1	0-10	Ceramic	body	grit temper	undetermined		exterior absent			3 (<1/2"-1/4")	2.3		9/17/2014
11.57-58	2	XU 1	0-10	Ceramic	body	grit temper	smooth	trailed				2 (<1"-1/2")	6.1	4.4 & 4.4 mm	9/17/2014
11.59	1	XU 1	0-10	Ceramic	body	grit temper	smooth	trailed				3 (<1/2"-1/4")	1.3	5.2 mm	9/17/2014
11.6	1	XU 1	0-10	Ceramic	rim	grit temper	smooth			residue present		1 (<2"-1")	12.9	lip 4.7 mm, below lip 5.7 mm	9/17/2014
11	1	XU 1	0-10	Lithic	fire-cracked rock	cobble with angular			granitic			1 (<2"-1")	123.7		9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
11	1	XU 1	0-10	Lithic	fire-cracked rock	cobble with angular			granitic			2 (<1"-1/2")	19.3		9/17/2014
11	1	XU 1	0-10	Lithic	fire-cracked rock	cobble with angular			quartzite			1 (<2"-1")	56.1		9/17/2014
11	1	XU 1	0-10	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	27.5		9/17/2014
11.55	1	XU 1	0-10	Ceramic	rim	grit temper	smooth					1 (<2"-1")	9.8	lip 5.2 mm, below lip 5.5 mm	9/17/2014
11.56	1	XU 1	0-10	Ceramic	rim	grit temper	smooth					3 (<1/2"-1/4")	0.7	lip 3.3mm	9/17/2014
12.1-3	3	XU 1	10-20	Faunal	mammalian	unidentifiable	fragment					3 (<1/2"-1/4")	1.1		9/17/2014
12.4	1	XU 1	10-20	Lithic	debris	nonbifacial			basaltic	>0-<50%		1 (<2"-1")	88		9/17/2014
12.5	1	XU 1	10-20	Lithic	debris	shatter			quartz	>0-<50%		2 (<1"-1/2")	3.5		9/17/2014
12.6-7	2	XU 1	10-20	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.5		9/17/2014
12.8	1	XU 1	10-20	Botanical	wood charcoal	charcoal						3 (<1/2"-1/4")	2.2		9/17/2014
12.9	1	XU 1	10-20	Ceramic	body	grit temper	smooth			residue present		2 (<1"-1/2")	3	4.4 mm	9/17/2014
12.1	1	XU 1	10-20	Ceramic	body	grit temper	smooth			residue present		2 (<1"-1/2")	1.9	3.2 mm	9/17/2014
12.11-16	6	XU 1	10-20	Ceramic	body	grit temper	smooth			residue present		3 (<1/2"-1/4")	4.1	3.1,3.0,4.2,3.7,2.1,3.8 mm	9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
12.17-30	14	XU 1	10-20	Ceramic	body	grit temper	smooth					3 (<1/2"-1/4")	10.1	3.2,3.2,3.5,5.2,3.2,3.0,4.3,4.1,2.3,3.0,3.3,3.8,3.8,3.1	9/17/2014
12.31-32	2	XU 1	10-20	Ceramic	body	grit temper	cord marked					3 (<1/2"-1/4")	0.9	3.0 & 3.0mm	9/17/2014
12.33-35	3	XU 1	10-20	Ceramic	body	grit temper	smooth		interior absent			3 (<1/2"-1/4")	1.8		9/17/2014
12.36-41	6	XU 1	10-20	Ceramic	body	grit temper	undetermined		exterior absent			3 (<1/2"-1/4")	2.3		9/17/2014
12.42-44	3	XU 1	10-20	Ceramic	body	grit temper	undetermined		exterior absent	residue present		3 (<1/2"-1/4")	1.5		9/17/2014
12	1	XU 1	10-20	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	5		9/17/2014
12.45	1	XU 1	10-20	Ceramic	body	grit temper	smooth	trailed		residue present		1 (<2"-1")	7.5	4.1 mm	9/17/2014
12.46	1	XU 1	10-20	Ceramic	body	grit temper	smooth	trailed				1 (<2"-1")	20	refir; 4.3 mm	9/17/2014
12.47	1	XU 1	10-20	Ceramic	neck	grit temper	smooth	trailed				1 (<2"-1")	16.3	5.6 mm	9/17/2014
12.48	1	XU 1	10-20	Ceramic	rim	grit temper	smooth			residue present		2 (<1"-1/2")	3.9	refit with 13.8; 3.9 mm	9/17/2014
12.49	1	XU 1	10-20	Ceramic	rim	grit temper	undetermined		exterior absent			2 (<1"-1/2")	1.4		9/17/2014
12	2	XU 1	10-20	Lithic	fire-cracked rock	friable rounded piece			granitic			2 (<1"-1/2")	15.1		9/17/2014
12	1	XU 1	10-20	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	3.5		9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
12	1	XU 1	10-20	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	38.6		9/17/2014
12	1	XU 1	10-20	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	62.2		9/17/2014
12	1	XU 1	10-20	Lithic	fire-cracked rock	cobble with angular			granitic			1 (<2"-1")	116.7		9/17/2014
12	2	XU 1	10-20	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	16.1		9/17/2014
12	1	XU 1	10-20	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	39.7		9/17/2014
12	8	XU 1	10-20	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	38.2		9/17/2014
12.50-56	7	XU 1	10-20	Ceramic	body	grit temper	smooth			residue present		3 (<1/2"-1/4")	19	Beta; 3.6, 3.4, 5.2,4.8,4.2,4.2,4.1 mm	9/17/2014
13.1-4	4	XU 1	20-30	Ceramic	body	grit temper	smooth					3 (<1/2"-1/4")	4.3	4.5,4.7,4.0,3.3 mm	9/17/2014
13.5	1	XU 1	20-30	Lithic	debris	nonbifacial			quartz	50-<100%		3 (<1/2"-1/4")	0.7		9/17/2014
13.6	1	XU 1	20-30	Lithic	debris	other G4 flake			Prairie du Chien Chert (oolitic)	0%	heat treated	4 (<1/4")	0.1		9/17/2014
13	1	XU 1	20-30	Lithic	fire-cracked rock	angular/spall			granitic			3 (<1/2"-1/4")	1		9/17/2014
13	1	XU 1	20-30	Lithic	fire-cracked rock	cobble with angular			granitic			0 (<4"-2")	534		9/17/2014
13	1	XU 1	20-30	Lithic	fire-cracked rock	cobble (non-friable)			quartzite			0 (<4"-2")	523		9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
13	1	XU 1	20-30	Lithic	fire-cracked rock	cobble with angular			basaltic			0 (<4"-2")	366		9/17/2014
13	1	XU 1	20-30	Lithic	fire-cracked rock	cobble with spall			unidentified material			0 (<4"-2")	383		9/17/2014
13	2	XU 1	20-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	277		9/17/2014
13	1	XU 1	20-30	Lithic	fire-cracked rock	cobble (non-friable)			granitic			0 (<4"-2")	260		9/17/2014
13	1	XU 1	20-30	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	61		9/17/2014
13	2	XU 1	20-30	Lithic	fire-cracked rock	crumb			granitic			3 (<1/2"-1/4")	2		9/17/2014
13	2	XU 1	20-30	Lithic	fire-cracked rock	angular			granitic			0 (<4"-2")	882		9/17/2014
13	1	XU 1	20-30	Lithic	fire-cracked rock	angular			basaltic			0 (<4"-2")	276		9/17/2014
13	2	XU 1	20-30	Lithic	fire-cracked rock	cobble (non-friable)			quartzite			0 (<4"-2")	1169		9/17/2014
13	1	XU 1	20-30	Lithic	fire-cracked rock	cobble with spall			granitic			0 (<4"-2")	1492		9/17/2014
13.7	1	XU 1	20-30	Ceramic	rim	grit temper	smooth					2 (<1"-1/2")	1.5	4.5 mm	9/17/2014
13.8	1	XU 1	20-30	Ceramic	rim	grit temper	smooth					3 (<1/2"-1/4")	1.5	refit w/ 12.48; 4.5mm	9/17/2014
13	1	XU 1	20-30	Lithic	fire-cracked rock	cobble with spall			granitic			0 (<4"-2")	443		9/17/2014
13	1	XU 1	20-30	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	30.4		9/17/2014
13	1	XU 1	20-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	17		9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
13	3	XU 1	20-30	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	23.4		9/17/2014
13	2	XU 1	20-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	179.8		9/17/2014
13	1	XU 1	20-30	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	3.1		9/17/2014
13	1	XU 1	20-30	Lithic	fire-cracked rock	cobble with angular			granitic			1 (<2"-1")	100.2		9/17/2014
13	1	XU 1	20-30	Lithic	fire-cracked rock	friable rounded piece			granitic			1 (<2"-1")	20		9/17/2014
13	2	XU 1	20-30	Lithic	fire-cracked rock	friable rounded piece			granitic			2 (<1"-1/2")	13.9		9/17/2014
14.1-2	2	XU 1	30-40	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.4		9/17/2014
14.3	1	XU 1	30-40	Lithic	debris	nonbifacial			quartzite	50-<100%		2 (<1"-1/2")	15.8		9/17/2014
14.4	1	XU 1	30-40	Lithic	debris	broken flake			rhyolite	0%		3 (<1/2"-1/4")	0.8		9/17/2014
14.5	1	XU 1	30-40	Lithic	debris	nonbifacial			rhyolite	0%		3 (<1/2"-1/4")	1.9		9/17/2014
14.6	1	XU 1	30-40	Lithic	debris	bipolar flake			Lake Superior Agate	50-<100%		3 (<1/2"-1/4")	4.9		9/17/2014
14.7	1	XU 1	30-40	Lithic	debris	bifacial shaping			Prairie du Chien Chert (oolitic)	0%	heat treated	3 (<1/2"-1/4")	0.2		9/17/2014
14.8-9	2	XU 1	30-40	Lithic	debris	bifacial shaping			Prairie du Chien Chert (oolitic)	0%	heat treated	4 (<1/4")	0.1		9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
14.1	1	XU 1	30-40	Lithic	debris	bifacial shaping			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	0.1		9/17/2014
14.11-12	2	XU 1	30-40	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	0.5		9/17/2014
14.13	1	XU 1	30-40	Lithic	debris	broken flake			unidentified material	0%		3 (<1/2"-1/4")	0.8		9/17/2014
14.14	1	XU 1	30-40	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.5		9/17/2014
14.15	1	XU 1	30-40	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.1		9/17/2014
14.16	1	XU 1	30-40	Lithic	debris	other G4 flake			Knife Lake Siltstone	0%		4 (<1/4")	0.1		9/17/2014
14	1	XU 1	30-40	Lithic	fire-cracked rock	angular/spall			granitic			3 (<1/2"-1/4")	1		9/17/2014
14	1	XU 1	30-40	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	1		9/17/2014
14	1	XU 1	30-40	Lithic	fire-cracked rock	cobble (friable)			granitic			0 (<4"-2")	917		9/17/2014
14	1	XU 1	30-40	Lithic	fire-cracked rock	cobble (non-friable)			igneous			0 (<4"-2")	477		9/17/2014
14	3	XU 1	30-40	Lithic	fire-cracked rock	cobble (non-friable)			basaltic			1 (<2"-1")	257.4		9/17/2014
14	1	XU 1	30-40	Lithic	fire-cracked rock	cobble with spall			granitic			0 (<4"-2")	222.8		9/17/2014
14	1	XU 1	30-40	Lithic	fire-cracked rock	cobble with angular			granitic			0 (<4"-2")	346.7		9/17/2014
14	1	XU 1	30-40	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	18.7		9/17/2014
14	1	XU 1	30-40	Lithic	fire-cracked rock	cobble with angular			granitic			1 (<2"-1")	63.8		9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
14	1	XU 1	30-40	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	31.2		9/17/2014
15.1	1	XU 1	40-50	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.1		9/17/2014
15.2	1	XU 1	40-50	Ceramic	body	grit temper	cord marked			residue present		2 (<1"-1/2")	1.7	3.0 mm	9/17/2014
15.3	1	XU 1	40-50	Lithic	debris	decortication			unidentified material	100%		3 (<1/2"-1/4")	1		9/17/2014
15.4	1	XU 1	40-50	Lithic	debris	bipolar flake			quartz	0%		3 (<1/2"-1/4")	0.9		9/17/2014
15.5	1	XU 1	40-50	Lithic	debris	nonbifacial			quartz	50-<100%		3 (<1/2"-1/4")	0.6		9/17/2014
15.6	1	XU 1	40-50	Lithic	debris	other G4 flake			quartzite	100%		4 (<1/4")	0.1		9/17/2014
15.7	1	XU 1	40-50	Lithic	debris	bifacial thinning			Knife Lake Siltstone	0%		3 (<1/2"-1/4")	0.5		9/17/2014
15.8	1	XU 1	40-50	Lithic	debris	bifacial shaping			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	0.1		9/17/2014
15	1	XU 1	40-50	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	3		9/17/2014
15	1	XU 1	40-50	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	24		9/17/2014
16.1	1	XU 1	50-60	Lithic	debris	broken flake			Lake Superior Agate	0%		3 (<1/2"-1/4")	0.1		9/17/2014
16.2	1	XU 1	50-60	Ceramic	body	grit temper	cord marked					3 (<1/2"-1/4")	0.6	4.0 mm	9/17/2014
17.1	1	XU 2	0-10	Ceramic	body	grit temper	cord marked					2 (<1"-1/2")	1.6	3.3 mm	9/17/2014
18.1	1	XU 2	10-20	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.4		9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
18.2	1	XU 2	10-20	Lithic	tool	unpatterned flake	utilized flake	decortication	Knife Lake Siltstone	50-<100%		3 (<1/2"-1/4")	3	finished, whole	9/17/2014
18.3	1	XU 2	10-20	Lithic	debris	decortication			unidentified material	100%		2 (<1"-1/2")	1.5		9/17/2014
18.4	1	XU 2	10-20	Lithic	debris	decortication			quartz	50-<100%		2 (<1"-1/2")	11.9		9/17/2014
18.5	1	XU 2	10-20	Lithic	debris	broken flake			Knife Lake Siltstone	0%		3 (<1/2"-1/4")	0.4		9/17/2014
18.6	1	XU 2	10-20	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.2		9/17/2014
18.7	1	XU 2	10-20	Lithic	debris	other G4 flake			unidentified chert	0%		4 (<1/4")	0.1		9/17/2014
18.8	1	XU 2	10-20	Ceramic	body	grit temper	smooth			residue present		2 (<1"-1/2")	3.3	4.6 mm	9/17/2014
18.9-12	4	XU 2	10-20	Ceramic	neck	grit temper	smooth					3 (<1/2"-1/4")	5.6	5.1,4.8,5.4,4.8 mm	9/17/2014
18.13-17	5	XU 2	10-20	Ceramic	body	grit temper	smooth					2 (<1"-1/2")	20.2	3.4,5.1,6.0,3.9,4.4 mm	9/17/2014
18.18-36	19	XU 2	10-20	Ceramic	body	grit temper	smooth					3 (<1/2"-1/4")	9.6	4.4,3.5,2.7,4.7,4.5,4.2,2.3,3.9,2.9,3.0,5.2,3.9,2.8,3.5,2.7,3.5,2.9,4.4,3.0 mm	9/17/2014
18.37-43	7	XU 2	10-20	Ceramic	body	grit temper	cord marked					2 (<1"-1/2")	13.6	4.6,3.6,4.4,4.1,3.9,4.9,5.0 mm	9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
18.44-68	25	XU 2	10-20	Ceramic	body	grit temper	cord marked					3 (<1/2"-1/4")	15.7	4.6,3.3,3.0,3.5,4.9,3.7,3.6,2.8,4.5,3.5,2.5,2.8,3.5,2.6,5.5,3.7,2.9,3.8,2.5,2.8,2.6,2.9,3.9,2.7,3.1 mm	9/17/2014
18.69-78	10	XU 2	10-20	Ceramic	body	grit temper	undetermined		exterior absent			3 (<1/2"-1/4")	2		9/17/2014
18.79-81	3	XU 2	10-20	Ceramic	body	grit temper	cord marked		interior absent			3 (<1/2"-1/4")	1.2		9/17/2014
18.82-83	2	XU 2	10-20	Ceramic	body	grit temper	smooth		interior absent			3 (<1/2"-1/4")	0.4		9/17/2014
18	5	XU 2	10-20	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	190		9/17/2014
18	15	XU 2	10-20	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	114		9/17/2014
18	2	XU 2	10-20	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	2		9/17/2014
18	2	XU 2	10-20	Lithic	fire-cracked rock	angular			metamorphic			1 (<2"-1")	21		9/17/2014
18	6	XU 2	10-20	Lithic	fire-cracked rock	angular			metamorphic			2 (<1"-1/2")	40		9/17/2014
18	1	XU 2	10-20	Lithic	fire-cracked rock	angular	metate		metamorphic			3 (<1/2"-1/4")	3		9/17/2014
18	1	XU 2	10-20	Lithic	fire-cracked rock	angular			unidentified material			3 (<1/2"-1/4")	2		9/17/2014
18	1	XU 2	10-20	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	8		9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
18	1	XU 2	10-20	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	28		9/17/2014
18	1	XU 2	10-20	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	15		9/17/2014
18	2	XU 2	10-20	Lithic	fire-cracked rock	angular/spall			unidentified material			3 (<1/2"-1/4")	3		9/17/2014
18	1	XU 2	10-20	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	3		9/17/2014
18	1	XU 2	10-20	Lithic	fire-cracked rock	cobble (non-friable)			granitic			0 (<4"-2")	223		9/17/2014
18	1	XU 2	10-20	Lithic	fire-cracked rock	friable rounded piece			granitic			3 (<1/2"-1/4")	4		9/17/2014
18.84	1	XU 2	10-20	Ceramic	rim	grit temper	smooth			residue present		2 (<1"-1/2")	6.3	refit; 5.2 mm	9/17/2014
18.85	1	XU 2	10-20	Ceramic	rim	grit temper	smooth					3 (<1/2"-1/4")	1.1	4.1 mm	9/17/2014
18.86	1	XU 2	10-20	Ceramic	rim	grit temper	smooth		interior absent			3 (<1/2"-1/4")	0.7		9/17/2014
18.87	1	XU 2	10-20	Ceramic	rim	grit temper	undetermined	trailed	interior/ exterior absent			3 (<1/2"-1/4")	1.3	trailed line or tool impression on interior or exterior; 6.2 mm	9/17/2014
18.88-92	5	XU 2	10-20	Ceramic	body	grit temper	smooth	trailed			Ogechie	2 (<1"-1/2")	11.1	4.1,4.5,4.6,3.4, & 4.8 mm	9/17/2014
18.93-94	2	XU 2	10-20	Ceramic	body	grit temper	smooth	trailed			Ogechie	3 (<1/2"-1/4")	2	3.6 & 4.0 mm	9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
18.95	1	XU 2	10-20	Lithic	tool	unpatterned cobble	anvilstone & chopper		basaltic	50-<100%		0 (<4"-2")	890	finished, whole	9/17/2014
19.1	1	XU 2	20-30	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.1		9/17/2014
19.2	1	XU 2	20-30	Lithic	debris	decortication			quartzite	50-<100%		2 (<1"-1/2")	9.9		9/17/2014
19.3	1	XU 2	20-30	Lithic	debris	decortication			quartzite	100%		3 (<1/2"-1/4")	0.7		9/17/2014
19.4	1	XU 2	20-30	Lithic	debris	decortication			Knife Lake Siltstone	100%		3 (<1/2"-1/4")	0.6		9/17/2014
19.5	1	XU 2	20-30	Lithic	debris	nonbifacial			quartz	50-<100%		3 (<1/2"-1/4")	0.6		9/17/2014
19.6	1	XU 2	20-30	Lithic	debris	nonbifacial			unidentified chert	50-<100%	heat treated	3 (<1/2"-1/4")	0.5		9/17/2014
19.7	1	XU 2	20-30	Lithic	debris	other G4 flake			Tongue River Silica	0%	heat treated	4 (<1/4")	0.1		9/17/2014
19.8	1	XU 2	20-30	Lithic	debris	broken flake			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	0.1		9/17/2014
19.9	1	XU 2	20-30	Ceramic	body	grit temper	cord marked					2 (<1"-1/2")	2.5	4.2 mm	9/17/2014
19.10-17	8	XU 2	20-30	Ceramic	body	grit temper	cord marked					3 (<1/2"-1/4")	3.9	3.8,3.6,3.8,3.9,3.9,4.1,2.5,4.3 mm	9/17/2014
19.18-19	2	XU 2	20-30	Ceramic	body	grit temper	smooth					3 (<1/2"-1/4")	0.7	3.5 & 3.2 mm	9/17/2014
19.20-25	6	XU 2	20-30	Ceramic	body	grit temper	undetermined		exterior absent			3 (<1/2"-1/4")	1.9		9/17/2014
19.26-30	5	XU 2	20-30	Ceramic	body	grit temper	cord marked		interior absent			3 (<1/2"-1/4")	1.3		9/17/2014
19	3	XU 2	20-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	243		9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
19	6	XU 2	20-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	40		9/17/2014
19	3	XU 2	20-30	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	8		9/17/2014
19	1	XU 2	20-30	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	17		9/17/2014
19	1	XU 2	20-30	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	16		9/17/2014
19	1	XU 2	20-30	Lithic	fire-cracked rock	angular			quartzite			3 (<1/2"-1/4")	4		9/17/2014
19	1	XU 2	20-30	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	8		9/17/2014
19	2	XU 2	20-30	Lithic	fire-cracked rock	angular/spall			unidentified material			2 (<1"-1/2")	14		9/17/2014
19	1	XU 2	20-30	Lithic	fire-cracked rock	angular/spall			unidentified material			3 (<1/2"-1/4")	3		9/17/2014
19	2	XU 2	20-30	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	17		9/17/2014
19	1	XU 2	20-30	Lithic	fire-cracked rock	angular/spall			granitic			3 (<1/2"-1/4")	2		9/17/2014
19	2	XU 2	20-30	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	10		9/17/2014
19	2	XU 2	20-30	Lithic	fire-cracked rock	cobble with spall			granitic			0 (<4"-2")	1143		9/17/2014
19	1	XU 2	20-30	Lithic	fire-cracked rock	cobble (non-friable)			granitic			0 (<4"-2")	593		9/17/2014
19	1	XU 2	20-30	Lithic	fire-cracked rock	cobble (friable)			granitic			0 (<4"-2")	239		9/17/2014
19	1	XU 2	20-30	Lithic	fire-cracked rock	cobble (friable)			granitic			1 (<2"-1")	166		9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
19	3	XU 2	20-30	Lithic	fire-cracked rock	crumb			granitic			3 (<1/2"-1/4")	3		9/17/2014
19	1	XU 2	20-30	Lithic	fire-cracked rock	crumb			granitic			4 (<1/4")	1		9/17/2014
19.31	1	XU 2	20-30	Ceramic	rim	grit temper	smooth					3 (<1/2"-1/4")	0.5	3.5 mm	9/17/2014
20.1-4	4	XU 2	30-40	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	1.4		9/17/2014
20.5-7	3	XU 2	30-40	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.2		9/17/2014
20.8	1	XU 2	30-40	Lithic	core	tested cobble			quartz	50-<100%		1 (<2"-1")	68.6		9/17/2014
20.9	1	XU 2	30-40	Lithic	debris	nonbifacial			Knife Lake Siltstone	>0-<50%		2 (<1"-1/2")	10.5		9/17/2014
20.1	1	XU 2	30-40	Lithic	debris	nonbifacial			basaltic	>0-<50%		3 (<1/2"-1/4")	1.5		9/17/2014
20.11	1	XU 2	30-40	Lithic	debris	decortication			Knife Lake Siltstone	50-<100%		3 (<1/2"-1/4")	1.9		9/17/2014
20.12	1	XU 2	30-40	Lithic	debris	broken flake			Knife Lake Siltstone	0%		3 (<1/2"-1/4")	0.5		9/17/2014
20.13	1	XU 2	30-40	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	0.2		9/17/2014
20.14	1	XU 2	30-40	Lithic	debris	broken flake			quartz	>0-<50%		3 (<1/2"-1/4")	0.2		9/17/2014
20	2	XU 2	30-40	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	34		9/17/2014
20	4	XU 2	30-40	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	187		9/17/2014
20	1	XU 2	30-40	Lithic	fire-cracked rock	angular			unidentified material			0 (<4"-2")	195		9/17/2014
20	1	XU 2	30-40	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	80		9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
20	1	XU 2	30-40	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	7		9/17/2014
20	2	XU 2	30-40	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	142		9/17/2014
20	7	XU 2	30-40	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	115		9/17/2014
20	1	XU 2	30-40	Lithic	fire-cracked rock	spall			basaltic			1 (<2"-1")	59		9/17/2014
20	2	XU 2	30-40	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	10		9/17/2014
20	1	XU 2	30-40	Lithic	fire-cracked rock	spall			basaltic			3 (<1/2"-1/4")	1		9/17/2014
20	1	XU 2	30-40	Lithic	fire-cracked rock	spall			quartzite			0 (<4"-2")	144		9/17/2014
20	3	XU 2	30-40	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	176		9/17/2014
20	2	XU 2	30-40	Lithic	fire-cracked rock	angular/spall			quartzite			2 (<1"-1/2")	21		9/17/2014
20	1	XU 2	30-40	Lithic	fire-cracked rock	cobble with angular			granitic			0 (<4"-2")	449		9/17/2014
20	1	XU 2	30-40	Lithic	fire-cracked rock	cobble with angular			granitic			1 (<2"-1")	102		9/17/2014
20	1	XU 2	30-40	Lithic	fire-cracked rock	cobble with spall			granitic			0 (<4"-2")	596		9/17/2014
20	1	XU 2	30-40	Lithic	fire-cracked rock	cobble (non-friable)			quartzite			0 (<4"-2")	341		9/17/2014
20	1	XU 2	30-40	Lithic	fire-cracked rock	cobble (friable)			granitic			0 (<4"-2")	319		9/17/2014
20	1	XU 2	30-40	Lithic	fire-cracked rock	crumb			basaltic			4 (<1/4")	1		9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
21.1-2	2	XU 2	40-50	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.4		9/17/2014
21.3-6	4	XU 2	40-50	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.8		9/17/2014
21.7	1	XU 2	40-50	Lithic	debris	bifacial thinning			Prairie du Chien Chert (oolitic)	0%	heat treated	3 (<1/2"-1/4")	0.3		9/17/2014
21.8	1	XU 2	40-50	Lithic	debris	bifacial shaping			Prairie du Chien Chert (oolitic)	0%	heat treated	4 (<1/4")	0.1		9/17/2014
21.9-10	2	XU 2	40-50	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	1.4		9/17/2014
21.11	1	XU 2	40-50	Lithic	debris	other G4 flake			Prairie du Chien Chert (oolitic)	0%	heat treated	4 (<1/4")	0.1		9/17/2014
21	1	XU 2	40-50	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	54		9/17/2014
21	1	XU 2	40-50	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	3		9/17/2014
21	2	XU 2	40-50	Lithic	fire-cracked rock	angular/spall			granitic			3 (<1/2"-1/4")	2		9/17/2014
22.1	1	XU 2	50-60	Lithic	debris	nonbifacial			quartz	>0-<50%		3 (<1/2"-1/4")	1.3		9/17/2014
22.2	1	XU 2	50-60	Lithic	debris	bifacial shaping			quartzite	0%		4 (<1/4")	0.2		9/17/2014
22.3	1	XU 2	50-60	Ceramic	body	grit temper	undetermined		exterior absent			3 (<1/2"-1/4")	0.4		9/17/2014
22.4	1	XU 2	50-60	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.4		9/17/2014
22	1	XU 2	50-60	Lithic	fire-cracked rock	angular			granitic			0 (<4"-2")	245		9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
22	1	XU 2	50-60	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	8		9/17/2014
22	1	XU 2	50-60	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	2		9/17/2014
22	1	XU 2	50-60	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	36		9/17/2014
22	1	XU 2	50-60	Lithic	fire-cracked rock	cobble with spall			granitic			0 (<4"-2")	304		9/17/2014
22	1	XU 2	50-60	Lithic	fire-cracked rock	cobble with angular			granitic			0 (<4"-2")	430		9/17/2014
22	2	XU 2	50-60	Lithic	fire-cracked rock	crumb			unidentified material			3 (<1/2"-1/4")	1		9/17/2014
22	4	XU 2	50-60	Lithic	fire-cracked rock	crumb			unidentified material			4 (<1/4")	1		9/17/2014
23.1	1	XU 3	0-10	Lithic	debris	nonbifacial			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	1		9/17/2014
23.2	1	XU 3	0-10	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.1		9/17/2014
23	1	XU 3	0-10	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	10		9/17/2014
23	1	XU 3	0-10	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	17		9/17/2014
24.1	1	XU 3	10-20	Lithic	debris	bipolar flake			Tongue River Silica	>0-<50%	heat treated	2 (<1"-1/2")	5.5		9/17/2014
24.2	1	XU 3	10-20	Lithic	debris	nonbifacial			quartzite	0%		2 (<1"-1/2")	2.1		9/17/2014
24.3	1	XU 3	10-20	Lithic	debris	shatter			quartz	>0-<50%		2 (<1"-1/2")	5.2		9/17/2014
24.4	1	XU 3	10-20	Lithic	debris	nonbifacial			Knife Lake Siltstone	0%		3 (<1/2"-1/4")	2		9/17/2014
24.5-7	3	XU 3	10-20	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.3		9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
24	1	XU 3	10-20	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	56.3		9/17/2014
24	3	XU 3	10-20	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	26.9		9/17/2014
24	1	XU 3	10-20	Lithic	fire-cracked rock	angular/spall			basaltic			2 (<1"-1/2")	3.7		9/17/2014
24	2	XU 3	10-20	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	6.8		9/17/2014
24	5	XU 3	10-20	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	25.5		9/17/2014
24	1	XU 3	10-20	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	0.6		9/17/2014
24	1	XU 3	10-20	Lithic	fire-cracked rock	cobble with angular			quartzite			1 (<2"-1")	112		9/17/2014
24	3	XU 3	10-20	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	13.3		9/17/2014
24	1	XU 3	10-20	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	0.3		9/17/2014
24	1	XU 3	10-20	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	10.3		9/17/2014
24	3	XU 3	10-20	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	77.2		9/17/2014
24	1	XU 3	10-20	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	23.4		9/17/2014
24	2	XU 3	10-20	Lithic	fire-cracked rock	friable rounded piece			granitic			2 (<1"-1/2")	24.8		9/17/2014
24	2	XU 3	10-20	Lithic	fire-cracked rock	cobble with angular			granitic			0 (<4"-2")	484.1		9/17/2014
24	4	XU 3	10-20	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	193.2		9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
24	1	XU 3	10-20	Lithic	fire-cracked rock	cobble with spall			granitic			1 (<2"-1")	80.4		9/17/2014
24	1	XU 3	10-20	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	103.9		9/17/2014
25.1	1	XU 3	20-30	Lithic	debris	broken flake			Knife Lake Siltstone	0%		3 (<1/2"-1/4")	0.9		9/17/2014
25.2	1	XU 3	20-30	Lithic	debris	other G4 flake			Tongue River Silica	>0-<50%	heat treated	4 (<1/4")	0.3		9/17/2014
25.3	1	XU 3	20-30	Faunal	mammalian, medium/large	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.8		9/17/2014
25	1	XU 3	20-30	Lithic	fire-cracked rock	cobble with spall			metamorphic			1 (<2"-1")	38		9/17/2014
25	1	XU 3	20-30	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	0.8		9/17/2014
25	1	XU 3	20-30	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	10		9/17/2014
25	1	XU 3	20-30	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	11.6		9/17/2014
25	1	XU 3	20-30	Lithic	fire-cracked rock	spall			quartzite			1 (<2"-1")	9.3		9/17/2014
25	3	XU 3	20-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	14.5		9/17/2014
25	1	XU 3	20-30	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	30.7		9/17/2014
25	2	XU 3	20-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	103.8		9/17/2014
25	1	XU 3	20-30	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	31.2		9/17/2014
25	1	XU 3	20-30	Lithic	fire-cracked rock	angular			metamorphic			1 (<2"-1")	32.8		9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
25	1	XU 3	20-30	Lithic	fire-cracked rock	cobble (non-friable)			quartzite			1 (<2"-1")	184.7		9/17/2014
25	1	XU 3	20-30	Lithic	fire-cracked rock	spall			metamorphic			2 (<1"-1/2")	1.5		9/17/2014
26.1	1	XU 3	30-40	Lithic	debris	nonbifacial			Tongue River Silica	100%	heat treated	3 (<1/2"-1/4")	0.2		9/19/2014
26.2-3	2	XU 3	30-40	Faunal	mammalian, medium/large	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.9		9/19/2014
26	1	XU 3	30-40	Lithic	fire-cracked rock	spall			unidentified material			1 (<2"-1")	14		9/19/2014
26	1	XU 3	30-40	Lithic	fire-cracked rock	spall			unidentified material			1 (<2"-1")	28		9/19/2014
27.1	1	XU 3	40-50	Lithic	debris	decortication			unidentified chert	100%	probably heat treated	3 (<1/2"-1/4")	1.9		9/19/2014
27.2	1	XU 3	40-50	Lithic	debris	broken flake			Tongue River Silica	>0-<50%	heat treated	3 (<1/2"-1/4")	0.3		9/19/2014
27.3	1	XU 3	40-50	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.2		9/19/2014
27	1	XU 3	40-50	Lithic	fire-cracked rock	cobble (friable)			granitic			0 (<4"-2")	190		9/19/2014
28.1	1	XU 4	0-10	Lithic	debris	decortication			unidentified material	100%		2 (<1"-1/2")	6.5		9/17/2014
28.2	1	XU 4	0-10	Lithic	debris	bipolar flake			quartzite	100%		3 (<1/2"-1/4")	0.6		9/17/2014
28.3	1	XU 4	0-10	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.4		9/17/2014
28.4	1	XU 4	0-10	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.2		9/17/2014
29.1	1	XU 4	10-20	Lithic	debris	decortication			chalcedony	50-<100%		2 (<1"-1/2")	25.1		9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
29.2	1	XU 4	10-20	Lithic	debris	bipolar flake			unidentified material	100%		3 (<1/2"-1/4")	2.5		9/17/2014
29.3	1	XU 4	10-20	Lithic	debris	bipolar flake			quartz	100%		3 (<1/2"-1/4")	1.6		9/17/2014
29.4	1	XU 4	10-20	Lithic	debris	bipolar flake			quartz	0%		3 (<1/2"-1/4")	0.6		9/17/2014
29.5	1	XU 4	10-20	Lithic	debris	nonbifacial			Swan River Chert	>0-<50%	heat treated	3 (<1/2"-1/4")	1.9		9/17/2014
29.6	1	XU 4	10-20	Lithic	debris	bifacial thinning			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	0.3		9/17/2014
29.7	1	XU 4	10-20	Lithic	debris	broken flake			unidentified material	0%		3 (<1/2"-1/4")	0.7		9/17/2014
29.8	1	XU 4	10-20	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.5		9/17/2014
29.9-10	2	XU 4	10-20	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.4		9/17/2014
29.11	1	XU 4	10-20	Lithic	debris	other G4 flake			Lake Superior Agate	0%		4 (<1/4")	0.1		9/17/2014
29.12-13	2	XU 4	10-20	Lithic	debris	broken flake			rhyolite	0%		3 (<1/2"-1/4")	0.5		9/17/2014
29.14-15	2	XU 4	10-20	Lithic	debris	other G4 flake			unidentified material	0%		4 (<1/4")	0.2		9/17/2014
29.16-17	2	XU 4	10-20	Lithic	debris	shatter			quartz	0%		3 (<1/2"-1/4")	1.6		9/17/2014
29	1	XU 4	10-20	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	54		9/17/2014
29	2	XU 4	10-20	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	13		9/17/2014
29	4	XU 4	10-20	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	208		9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
29	10	XU 4	10-20	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	78		9/17/2014
29	3	XU 4	10-20	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	6		9/17/2014
29	1	XU 4	10-20	Lithic	fire-cracked rock	angular			granitic			4 (<1/4")	1		9/17/2014
29	1	XU 4	10-20	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	187		9/17/2014
29	2	XU 4	10-20	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	50		9/17/2014
29	2	XU 4	10-20	Lithic	fire-cracked rock	angular/spall			quartzite			2 (<1"-1/2")	8		9/17/2014
29	1	XU 4	10-20	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	23		9/17/2014
29	2	XU 4	10-20	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	7		9/17/2014
29	1	XU 4	10-20	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	2		9/17/2014
29	4	XU 4	10-20	Lithic	fire-cracked rock	crumb			granitic			3 (<1/2"-1/4")	1		9/17/2014
29	2	XU 4	10-20	Lithic	fire-cracked rock	crumb			granitic			4 (<1/4")	1		9/17/2014
30.1	1	XU 4	20-30	Lithic	debris	decortication			unidentified material	50-<100%		3 (<1/2"-1/4")	1.5		9/18/2014
30.2	1	XU 4	20-30	Lithic	debris	nonbifacial			quartz	50-<100%		3 (<1/2"-1/4")	0.6		9/18/2014
30.3	1	XU 4	20-30	Lithic	debris	nonbifacial			Tongue River Silica	>0-<50%		2 (<1"-1/2")	3.9		9/18/2014
30.4	1	XU 4	20-30	Lithic	debris	bifacial thinning			Tongue River Silica	>0-<50%		3 (<1/2"-1/4")	0.4		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
30.5-6	2	XU 4	20-30	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	1.4		9/18/2014
30.7	1	XU 4	20-30	Lithic	debris	other G4 flake			Tongue River Silica	0%	heat treated	4 (<1/4")	0.1		9/18/2014
30.8	1	XU 4	20-30	Lithic	debris	shatter			chalcedony	0%		2 (<1"-1/2")	12.6		9/18/2014
30	6	XU 4	20-30	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	306		9/18/2014
30	4	XU 4	20-30	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	37		9/18/2014
30	3	XU 4	20-30	Lithic	fire-cracked rock	angular			basaltic			3 (<1/2"-1/4")	6		9/18/2014
30	5	XU 4	20-30	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	354		9/18/2014
30	5	XU 4	20-30	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	4		9/18/2014
30	2	XU 4	20-30	Lithic	fire-cracked rock	angular			quartzite			3 (<1/2"-1/4")	29		9/18/2014
30	13	XU 4	20-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	688		9/18/2014
30	10	XU 4	20-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	76		9/18/2014
30	2	XU 4	20-30	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	5		9/18/2014
30	1	XU 4	20-30	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	27		9/18/2014
30	1	XU 4	20-30	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	6		9/18/2014
30	2	XU 4	20-30	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	47		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
30	5	XU 4	20-30	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	23		9/18/2014
30	1	XU 4	20-30	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	1		9/18/2014
30	2	XU 4	20-30	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	23		9/18/2014
30	1	XU 4	20-30	Lithic	fire-cracked rock	angular/spall			quartzite			1 (<2"-1")	33		9/18/2014
30	1	XU 4	20-30	Lithic	fire-cracked rock	angular/spall			quartzite			2 (<1"-1/2")	7		9/18/2014
30	2	XU 4	20-30	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	10		9/18/2014
30	1	XU 4	20-30	Lithic	fire-cracked rock	cobble (non-friable)			granitic			0 (<4"-2")	981		9/18/2014
30	1	XU 4	20-30	Lithic	fire-cracked rock	cobble (friable)			granitic			1 (<2"-1")	132		9/18/2014
30	4	XU 4	20-30	Lithic	fire-cracked rock	crumb			granitic			3 (<1/2"-1/4")	3		9/18/2014
30	2	XU 4	20-30	Lithic	fire-cracked rock	crumb			granitic			4 (<1/4")	1		9/18/2014
31.1	1	XU 4	30-40	Lithic	debris	decortication			chalcedony	100%		3 (<1/2"-1/4")	2.7		9/18/2014
31.2	1	XU 4	30-40	Lithic	debris	nonbifacial			chalcedony	0%		3 (<1/2"-1/4")	1		9/18/2014
31.3	1	XU 4	30-40	Lithic	debris	nonbifacial			unidentified material	50-<100%		3 (<1/2"-1/4")	0.4		9/18/2014
31.4	1	XU 4	30-40	Lithic	debris	broken flake			Tongue River Silica	0%		3 (<1/2"-1/4")	0.4		9/18/2014
31	1	XU 4	30-40	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	4		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
31	1	XU 4	30-40	Lithic	fire-cracked rock	angular			basaltic			3 (<1/2"-1/4")	1		9/18/2014
31	3	XU 4	30-40	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	19		9/18/2014
31	2	XU 4	30-40	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	4		9/18/2014
31	2	XU 4	30-40	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	64		9/18/2014
31	1	XU 4	30-40	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	3		9/18/2014
31	1	XU 4	30-40	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	11		9/18/2014
32.1-2	2	XU 4	40-50	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	1.1		9/18/2014
32	1	XU 4	40-50	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	43		9/18/2014
33.1-2	2	XU 5	0-10	Lithic	debris	nonbifacial			quartzite	>0-<50%		3 (<1/2"-1/4")	3.3		9/18/2014
33.3-4	2	XU 5	0-10	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	1		9/18/2014
33.5	1	XU 5	0-10	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	0.9		9/18/2014
33.6	1	XU 5	0-10	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.4		9/18/2014
33.7	1	XU 5	0-10	Lithic	debris	shatter			quartzite	0%		3 (<1/2"-1/4")	1		9/18/2014
33.8	1	XU 5	0-10	Lithic	debris	shatter			quartz	>0-<50%		3 (<1/2"-1/4")	1		9/18/2014
34.1	1	XU 5	10-20	Lithic	debris	decortication			Lake Superior Agate	100%		2 (<1"-1/2")	5.6		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
34.2-3	2	XU 5	10-20	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.4		9/18/2014
34	5	XU 5	10-20	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	242		9/18/2014
34	4	XU 5	10-20	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	32		9/18/2014
34	1	XU 5	10-20	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	2		9/18/2014
34	1	XU 5	10-20	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	104		9/18/2014
34	1	XU 5	10-20	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	11		9/18/2014
34	9	XU 5	10-20	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	64		9/18/2014
34	2	XU 5	10-20	Lithic	fire-cracked rock	angular			quartzite			3 (<1/2"-1/4")	2		9/18/2014
34	6	XU 5	10-20	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	49		9/18/2014
34	5	XU 5	10-20	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	9		9/18/2014
34	2	XU 5	10-20	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	2		9/18/2014
34	2	XU 5	10-20	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	13		9/18/2014
34	1	XU 5	10-20	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	2		9/18/2014
34	1	XU 5	10-20	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	7		9/18/2014
34	1	XU 5	10-20	Lithic	fire-cracked rock	spall			unidentified material			3 (<1/2"-1/4")	2		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
34	1	XU 5	10-20	Lithic	fire-cracked rock	spall			unidentified material			4 (<1/4")	1		9/18/2014
34	1	XU 5	10-20	Lithic	fire-cracked rock	angular/spall			unidentified material			1 (<2"-1")	61		9/18/2014
34	1	XU 5	10-20	Lithic	fire-cracked rock	angular/spall			unidentified material			2 (<1"-1/2")	30		9/18/2014
34	4	XU 5	10-20	Lithic	fire-cracked rock	crumb			granitic			3 (<1/2"-1/4")	4		9/18/2014
34	4	XU 5	10-20	Lithic	fire-cracked rock	crumb			granitic			4 (<1/4")	1		9/18/2014
35.1	1	XU 5	20-30	Lithic	debris	bipolar flake			Gunflint Silica	0%		3 (<1/2"-1/4")	1		9/18/2014
35.2	1	XU 5	20-30	Lithic	debris	shatter			Gunflint Silica	0%		3 (<1/2"-1/4")	0.5		9/18/2014
35	7	XU 5	20-30	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	298		9/18/2014
35	4	XU 5	20-30	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	33		9/18/2014
35	1	XU 5	20-30	Lithic	fire-cracked rock	angular			quartzite			3 (<1/2"-1/4")	2		9/18/2014
35	1	XU 5	20-30	Lithic	fire-cracked rock	angular			unidentified material			0 (<4"-2")	163		9/18/2014
35	2	XU 5	20-30	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	116		9/18/2014
35	2	XU 5	20-30	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	14		9/18/2014
35	1	XU 5	20-30	Lithic	fire-cracked rock	angular			unidentified material			3 (<1/2"-1/4")	3		9/18/2014
35	5	XU 5	20-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	342		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
35	8	XU 5	20-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	84		9/18/2014
35	1	XU 5	20-30	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	8		9/18/2014
35	3	XU 5	20-30	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	12		9/18/2014
35	1	XU 5	20-30	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	1		9/18/2014
35	5	XU 5	20-30	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	40		9/18/2014
35	11	XU 5	20-30	Lithic	fire-cracked rock	spall			basaltic			3 (<1/2"-1/4")	8		9/18/2014
35	3	XU 5	20-30	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	19		9/18/2014
35	2	XU 5	20-30	Lithic	fire-cracked rock	angular/spall			basaltic			2 (<1"-1/2")	7		9/18/2014
35	10	XU 5	20-30	Lithic	fire-cracked rock	crumb			granitic			3 (<1/2"-1/4")	11		9/18/2014
35	8	XU 5	20-30	Lithic	fire-cracked rock	crumb			granitic			4 (<1/4")	3		9/18/2014
36.1	1	XU 5	40-50	Faunal	mammalian, medium	unidentifiable	fragment					2 (<1"-1/2")	1.5	possible distal femur fragment	9/18/2014
36	1	XU 5	40-50	Lithic	fire-cracked rock	cobble with spall			granitic			0 (<4"-2")	439		9/18/2014
37.1	1	XU 6	0-10	Lithic	debris	nonbifacial			Tongue River Silica	>0-<50%		3 (<1/2"-1/4")	0.6		9/18/2014
37.2	1	XU 6	0-10	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.3		9/18/2014
37	2	XU 6	0-10	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	27.8		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
37	3	XU 6	0-10	Lithic	fire-cracked rock	angular			metamorphic			2 (<1"-1/2")	35.9		9/18/2014
38.15	1	XU 6	10-20	Lithic	core	tested cobble			quartz	50-<100%		0 (<4"-2")	225.1		9/18/2014
38.1	1	XU 6	10-20	Lithic	tool	unpatterned flake (unifacial retouch)	retouched flake	unidentified	Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	0.5	broken/ worn out, medial	9/18/2014
38.2	1	XU 6	10-20	Lithic	core	freehand nonbifacial	patterned	unprepared	Tongue River Silica	>0-<50%	heat treated	2 (<1"-1/2")	14.4		9/18/2014
38.3	1	XU 6	10-20	Lithic	debris	bipolar flake			Gunflint Silica	>0-<50%		3 (<1/2"-1/4")	0.6		9/18/2014
38.4	1	XU 6	10-20	Lithic	debris	nonbifacial			Tongue River Silica	>0-<50%	heat treated	2 (<1"-1/2")	11.9		9/18/2014
38.5	1	XU 6	10-20	Lithic	debris	nonbifacial			Tongue River Silica	>0-<50%	heat treated	2 (<1"-1/2")	2.1		9/18/2014
38.6	1	XU 6	10-20	Lithic	debris	nonbifacial			quartz	0%		3 (<1/2"-1/4")	1.4		9/18/2014
38.7	1	XU 6	10-20	Lithic	debris	decortication			quartz	100%		2 (<1"-1/2")	7.6		9/18/2014
38.8	1	XU 6	10-20	Lithic	debris	nonbifacial			Lake Superior Agate	0%		3 (<1/2"-1/4")	0.5		9/18/2014
38.9	1	XU 6	10-20	Lithic	debris	broken flake			Tongue River Silica	0%	heat treated	2 (<1"-1/2")	1.3		9/18/2014
38.10-11	2	XU 6	10-20	Lithic	debris	broken flake			Tongue River Silica	0%		3 (<1/2"-1/4")	0.9		9/18/2014
38.12	1	XU 6	10-20	Faunal	mammalian, medium/large	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	1		9/18/2014
38.13-14	2	XU 6	10-20	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.9		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
38	1	XU 6	10-20	Lithic	fire-cracked rock	cobble with angular			granitic			0 (<4"-2")	538		9/18/2014
38	1	XU 6	10-20	Lithic	fire-cracked rock	cobble (non-friable)			granitic			0 (<4"-2")	695		9/18/2014
38	3	XU 6	10-20	Lithic	fire-cracked rock	angular			metamorphic			2 (<1"-1/2")	16.4		9/18/2014
38	1	XU 6	10-20	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	9.6		9/18/2014
38	3	XU 6	10-20	Lithic	fire-cracked rock	spall			metamorphic			2 (<1"-1/2")	6.7		9/18/2014
38	2	XU 6	10-20	Lithic	fire-cracked rock	spall			metamorphic			1 (<2"-1")	30.1		9/18/2014
38	1	XU 6	10-20	Lithic	fire-cracked rock	friable rounded piece			granitic			2 (<1"-1/2")	2.8		9/18/2014
38	1	XU 6	10-20	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	3.8		9/18/2014
38	1	XU 6	10-20	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	12		9/18/2014
38	1	XU 6	10-20	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	4.5		9/18/2014
38	1	XU 6	10-20	Lithic	fire-cracked rock	angular/spall			basaltic			1 (<2"-1")	33.2		9/18/2014
38	2	XU 6	10-20	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	15.9		9/18/2014
38	1	XU 6	10-20	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	48.4		9/18/2014
38	1	XU 6	10-20	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	1.4		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
39.1	1	XU 6	20-30	Lithic	debris	bipolar flake			Lake Superior Agate	>0-<50%		3 (<1/2"-1/4")	0.9		9/18/2014
39.2	1	XU 6	20-30	Lithic	debris	nonbifacial			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	1.1		9/18/2014
39.3	1	XU 6	20-30	Lithic	debris	nonbifacial			Tongue River Silica	0%		3 (<1/2"-1/4")	1.1		9/18/2014
39.4	1	XU 6	20-30	Lithic	debris	edge preparation			Knife Lake Siltstone	>0-<50%		3 (<1/2"-1/4")	1.3		9/18/2014
39.5	1	XU 6	20-30	Lithic	debris	bifacial thinning			Knife Lake Siltstone	0%		2 (<1"-1/2")	3.6		9/18/2014
39.6	1	XU 6	20-30	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.2		9/18/2014
39.7	1	XU 6	20-30	Faunal	mammalian, large	unidentifiable	fragment	calcined				2 (<1"-1/2")	1.2		9/18/2014
39.8	1	XU 6	20-30	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.4		9/18/2014
39	1	XU 6	20-30	Lithic	fire-cracked rock	cobble (friable)			granitic			1 (<2"-1")	124.6		9/18/2014
39	1	XU 6	20-30	Lithic	fire-cracked rock	cobble (non-friable)			granitic			0 (<4"-2")	407		9/18/2014
39	1	XU 6	20-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	35.6		9/18/2014
39	2	XU 6	20-30	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	8.2		9/18/2014
39	1	XU 6	20-30	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	113.6		9/18/2014
39	1	XU 6	20-30	Lithic	fire-cracked rock	cobble with angular			granitic			1 (<2"-1")	162.8		9/18/2014
39	1	XU 6	20-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	7.8		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
39	1	XU 6	20-30	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	21.5		9/18/2014
39	2	XU 6	20-30	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	18.3		9/18/2014
39	2	XU 6	20-30	Lithic	fire-cracked rock	angular/spall			metamorphic			2 (<1"-1/2")	22.6		9/18/2014
39	1	XU 6	20-30	Lithic	fire-cracked rock	angular/spall			metamorphic			1 (<2"-1")	27.4		9/18/2014
39	1	XU 6	20-30	Lithic	fire-cracked rock	angular/spall			quartzite			2 (<1"-1/2")	6.5		9/18/2014
39	1	XU 6	20-30	Lithic	fire-cracked rock	angular			metamorphic			2 (<1"-1/2")	3.6		9/18/2014
40.1	1	XU 6	30-40	Lithic	debris	bipolar flake			Lake Superior Agate	100%		3 (<1/2"-1/4")	0.3		9/18/2014
40.2	1	XU 6	30-40	Lithic	debris	nonbifacial			Lake Superior Agate	0%		3 (<1/2"-1/4")	1.1		9/18/2014
40	1	XU 6	30-40	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	31.4		9/18/2014
41.1	1	XU 7N	10-20	Lithic	debris	nonbifacial			Tongue River Silica	>0-<50%		3 (<1/2"-1/4")	0.6		9/18/2014
41.2	1	XU 7N	10-20	Lithic	debris	bifacial thinning			Knife Lake Siltstone	0%		3 (<1/2"-1/4")	0.4		9/18/2014
41.3	1	XU 7N	10-20	Lithic	debris	bifacial thinning			Knife Lake Siltstone	0%		3 (<1/2"-1/4")	0.5		9/18/2014
41.4	1	XU 7N	10-20	Lithic	debris	broken flake			Knife Lake Siltstone	0%		3 (<1/2"-1/4")	0.3		9/18/2014
41.5	1	XU 7N	10-20	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	1.1		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
41.6	1	XU 7N	10-20	Ceramic	body	grit temper	cord marked					2 (<1"-1/2")	1.3	3.3 mm	9/18/2014
41.7	1	XU 7N	10-20	Ceramic	body	grit temper	smooth	trailed		residue present		2 (<1"-1/2")	1.9		9/18/2014
41.8-9	2	XU 7N	10-20	Ceramic	body	grit temper	undetermined		exterior absent			3 (<1/2"-1/4")	0.7		9/18/2014
41	1	XU 7N	10-20	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	2		9/18/2014
41	1	XU 7N	10-20	Lithic	fire-cracked rock	spall			unidentified material			3 (<1/2"-1/4")	3		9/18/2014
41	2	XU 7N	10-20	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	18		9/18/2014
41	3	XU 7N	10-20	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	36		9/18/2014
41	1	XU 7N	10-20	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	1		9/18/2014
41	1	XU 7N	10-20	Lithic	fire-cracked rock	angular			igneous			1 (<2"-1")	21		9/18/2014
41	1	XU 7N	10-20	Lithic	fire-cracked rock	split cobble			quartzite			1 (<2"-1")	225		9/18/2014
41	1	XU 7N	10-20	Lithic	fire-cracked rock	cobble with spall			quartzite			1 (<2"-1")	30		9/18/2014
41	1	XU 7N	10-20	Lithic	fire-cracked rock	angular/spall			quartzite			3 (<1/2"-1/4")	3.3		9/18/2014
42.1-4	4	XU 7N	20-30	Faunal	mammalian, medium/large	unidentifiable	fragment					3 (<1/2"-1/4")	1.7		9/18/2014
42.5-8	4	XU 7N	20-30	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.5		9/18/2014
42.9	1	XU 7N	20-30	Lithic	tool	unpatterned flake	utilized flake	nonbifacial	Knife River Flint	0%		3 (<1/2"-1/4")	0.7	finished, whole	9/18/2014
42.1	1	XU 7N	20-30	Lithic	debris	nonbifacial			basaltic	50-<100%		2 (<1"-1/2")	3.3		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
42.11-15	5	XU 7N	20-30	Lithic	debris	bifacial shaping			Prairie du Chien Chert (oolitic)	0%	heat treated	4 (<1/4")	0.5		9/18/2014
42.16	1	XU 7N	20-30	Lithic	debris	broken flake			quartzite	0%		2 (<1"-1/2")	2.2		9/18/2014
42.17	1	XU 7N	20-30	Lithic	debris	broken flake			Knife Lake Siltstone	0%		3 (<1/2"-1/4")	0.3		9/18/2014
42.18-19	2	XU 7N	20-30	Lithic	debris	other G4 flake			Prairie du Chien Chert (oolitic)	0%	heat treated	4 (<1/4")	0.2		9/18/2014
42.2	1	XU 7N	20-30	Lithic	debris	other G4 flake			Swan River Chert	0%	heat treated	4 (<1/4")	0.1		9/18/2014
42	5	XU 7N	20-30	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	260		9/18/2014
42	1	XU 7N	20-30	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	22		9/18/2014
42	1	XU 7N	20-30	Lithic	fire-cracked rock	angular			quartzite			3 (<1/2"-1/4")	2		9/18/2014
42	2	XU 7N	20-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	34		9/18/2014
42	2	XU 7N	20-30	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	49		9/18/2014
42	1	XU 7N	20-30	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	41		9/18/2014
42	1	XU 7N	20-30	Lithic	fire-cracked rock	cobble (friable)			granitic			0 (<4"-2")	215		9/18/2014
42	1	XU 7N	20-30	Lithic	fire-cracked rock	cobble (friable)			granitic			1 (<2"-1")	127		9/18/2014
42	1	XU 7N	20-30	Lithic	fire-cracked rock	split cobble			granitic			0 (<4"-2")	155		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
42	1	XU 7N	20-30	Lithic	fire-cracked rock	friable rounded piece			granitic			2 (<1"-1/2")	5		9/18/2014
42	3	XU 7N	20-30	Lithic	fire-cracked rock	crumb			granitic			4 (<1/4")	1		9/18/2014
42	0	XU 7N	20-30	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	10.3		9/18/2014
42.21-24	4	XU 7N	20-30	Faunal	mammalian, medium/large	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	4.4	Beta-destroyed	9/18/2014
43.1-6	6	XU 7N	30-40	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	1.6		9/18/2014
43.7-13	7	XU 7N	30-40	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.6		9/18/2014
43.14	1	XU 7N	30-40	Lithic	debris	bipolar flake			chalcedony	>0-<50%		2 (<1"-1/2")	11.4		9/18/2014
43.15	1	XU 7N	30-40	Lithic	debris	bipolar flake			quartz	100%		2 (<1"-1/2")	11.3	refit	9/18/2014
43.16	1	XU 7N	30-40	Lithic	debris	decortication			unidentified chert	100%	probably heat treated	3 (<1/2"-1/4")	0.8		9/18/2014
43.17-23	7	XU 7N	30-40	Lithic	debris	bifacial shaping			Prairie du Chien Chert (oolitic)	0%	heat treated	4 (<1/4")	0.3		9/18/2014
43.24	1	XU 7N	30-40	Lithic	debris	bifacial thinning			Prairie du Chien Chert (oolitic)	0%	heat treated	2 (<1"-1/2")	1.3		9/18/2014
43.25	1	XU 7N	30-40	Lithic	debris	broken flake			basaltic	0%		3 (<1/2"-1/4")	0.2		9/18/2014
43.26	1	XU 7N	30-40	Lithic	debris	broken flake			Prairie du Chien Chert (oolitic)	0%	heat treated	3 (<1/2"-1/4")	1		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
43.27-29	3	XU 7N	30-40	Lithic	debris	other G4 flake			Prairie du Chien Chert (oolitic)	0%	heat treated	4 (<1/4")	0.2		9/18/2014
43	1	XU 7N	30-40	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	48		9/18/2014
43	1	XU 7N	30-40	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	4		9/18/2014
43	1	XU 7N	30-40	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	2		9/18/2014
44.1-3	3	XU 7N	40-50	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.3		9/18/2014
44.4	1	XU 7N	40-50	Lithic	debris	shatter			basaltic	50-<100%		1 (<2"-1")	35.2		9/18/2014
44.5	1	XU 7N	40-50	Lithic	debris	shatter			quartz	0%		2 (<1"-1/2")	5.4		9/18/2014
44.6	1	XU 7N	40-50	Lithic	debris	shatter			quartz	0%		3 (<1/2"-1/4")	1		9/18/2014
44.7	1	XU 7N	40-50	Lithic	debris	bifacial thinning			Knife Lake Siltstone	0%		2 (<1"-1/2")	2		9/18/2014
44	1	XU 7N	40-50	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	15		9/18/2014
45.1	1	XU 7N	50-60	Faunal	mammalian, medium/large	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.5		9/18/2014
46.1	1	XU 7S	0-10	Lithic	debris	bipolar flake			Lake Superior Agate	0%		3 (<1/2"-1/4")	1.9		9/18/2014
46.2	1	XU 7S	0-10	Ceramic	body	grit temper	undetermined		exterior absent			3 (<1/2"-1/4")	0.5		9/18/2014
46	1	XU 7S	0-10	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	63		9/18/2014
46	1	XU 7S	0-10	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	5		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
46	1	XU 7S	0-10	Lithic	fire-cracked rock	angular			quartzite			0 (<4"-2")	401		9/18/2014
46	1	XU 7S	0-10	Lithic	fire-cracked rock	spall			basaltic			1 (<2"-1")	26		9/18/2014
46	1	XU 7S	0-10	Lithic	fire-cracked rock	cobble with spall			granitic			0 (<4"-2")	326		9/18/2014
46	1	XU 7S	0-10	Lithic	fire-cracked rock	cobble with spall			basaltic			1 (<2"-1")	100		9/18/2014
47.1	1	XU 7S	10-20	Lithic	debris	nonbifacial			Knife Lake Siltstone	0%		2 (<1"-1/2")	4.1		9/18/2014
47.2-3	2	XU 7S	10-20	Ceramic	body	grit temper	smooth	trailed		residue present		3 (<1/2"-1/4")	3.3	5.1 & 4.6 mm	9/18/2014
47.4	1	XU 7S	10-20	Ceramic	body	grit temper	smooth					2 (<1"-1/2")	1.9	3.6 mm	9/18/2014
47.5-6	2	XU 7S	10-20	Ceramic	body	grit temper	smooth					3 (<1/2"-1/4")	2.2	4.9 & 5.4 mm	9/18/2014
47	1	XU 7S	10-20	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	29		9/18/2014
47	3	XU 7S	10-20	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	28		9/18/2014
47	1	XU 7S	10-20	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	18		9/18/2014
47	2	XU 7S	10-20	Lithic	fire-cracked rock	angular			igneous			2 (<1"-1/2")	28		9/18/2014
47	1	XU 7S	10-20	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	5		9/18/2014
47	1	XU 7S	10-20	Lithic	fire-cracked rock	spall			unidentified material			3 (<1/2"-1/4")	1		9/18/2014
47	2	XU 7S	10-20	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	1		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
48.1-2	2	XU 7S	20-30	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.7		9/18/2014
48.3	1	XU 7S	20-30	Ceramic	body	grit temper	smooth					3 (<1/2"-1/4")	1.4	3.4 mm	9/18/2014
48.4-5	2	XU 7S	20-30	Ceramic	body	grit temper	undetermined		exterior absent			3 (<1/2"-1/4")	1.7		9/18/2014
48.6	1	XU 7S	20-30	Lithic	debris	nonbifacial			basaltic	0%		1 (<2"-1")	36.1		9/18/2014
48.7	1	XU 7S	20-30	Lithic	debris	nonbifacial			quartz	>0-<50%		1 (<2"-1")	14.7		9/18/2014
48.8	1	XU 7S	20-30	Lithic	debris	bifacial thinning			unidentified chert	0%	probably heat treated	3 (<1/2"-1/4")	1.1		9/18/2014
48.9	1	XU 7S	20-30	Lithic	debris	shatter			quartz	0%		2 (<1"-1/2")	1.1		9/18/2014
48.1	1	XU 7S	20-30	Lithic	debris	broken flake			Gunflint Silica	>0-<50%		3 (<1/2"-1/4")	0.7		9/18/2014
48.11	1	XU 7S	20-30	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.3		9/18/2014
48.12	1	XU 7S	20-30	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.2		9/18/2014
48	3	XU 7S	20-30	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	31		9/18/2014
48	1	XU 7S	20-30	Lithic	fire-cracked rock	angular			quartzite			3 (<1/2"-1/4")	2		9/18/2014
48	3	XU 7S	20-30	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	5		9/18/2014
48	1	XU 7S	20-30	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	8		9/18/2014
48	1	XU 7S	20-30	Lithic	fire-cracked rock	cobble with angular			granitic			0 (<4"-2")	282		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
48	1	XU 7S	20-30	Lithic	fire-cracked rock	cobble with spall			granitic			1 (<2"-1")	136		9/18/2014
48	1	XU 7S	20-30	Lithic	fire-cracked rock	cobble (non-friable)			granitic			0 (<4"-2")	522		9/18/2014
48	3	XU 7S	20-30	Lithic	fire-cracked rock	friable rounded piece			granitic			2 (<1"-1/2")	19		9/18/2014
48	1	XU 7S	20-30	Lithic	fire-cracked rock	friable rounded piece			granitic			3 (<1/2"-1/4")	2		9/18/2014
49.1-6	6	XU 7S	30-40	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.3		9/18/2014
49.7	1	XU 7S	30-40	Lithic	debris	bifacial thinning			Prairie du Chien Chert (oolitic)	0%	heat treated	3 (<1/2"-1/4")	0.2		9/18/2014
49.8	1	XU 7S	30-40	Lithic	debris	other G4 flake			unidentified chert	>0-<50%		4 (<1/4")	0.1		9/18/2014
49.9	1	XU 7S	30-40	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.2		9/18/2014
49.1	1	XU 7S	30-40	Lithic	debris	other G4 flake			Tongue River Silica	0%	heat treated	4 (<1/4")	0.2		9/18/2014
49	1	XU 7S	30-40	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	3		9/18/2014
49	1	XU 7S	30-40	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	11		9/18/2014
50.1-4	4	XU 7S	40-50	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.3		9/18/2014
50.5	1	XU 7S	40-50	Lithic	debris	bifacial shaping			Prairie du Chien Chert (oolitic)	0%	heat treated	4 (<1/4")	0.1		9/18/2014
50.6	1	XU 7S	40-50	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.3		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
50.7	1	XU 7S	40-50	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.1		9/18/2014
50.8	1	XU 7S	40-50	Lithic	debris	other G4 flake			Prairie du Chien Chert (oolitic)	0%		4 (<1/4")	0.1		9/18/2014
50	1	XU 7S	40-50	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	53		9/18/2014
50	1	XU 7S	40-50	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	2		9/18/2014
50	1	XU 7S	40-50	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	2		9/18/2014
51.1	1	XU 7S	50-60	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.1		9/18/2014
52.1	1	XU 8	0-10	Lithic	core	freehand nonbifacial	unpatterned (multi-directional)	unprepared	chalcedony	50-<100%		1 (<2"-1")	49.1		9/18/2014
52.2	1	XU 8	0-10	Lithic	debris	nonbifacial			Knife Lake Siltstone	0%		3 (<1/2"-1/4")	1.3		9/18/2014
52.3	1	XU 8	0-10	Lithic	debris	bipolar flake			quartz	100%		3 (<1/2"-1/4")	1.7		9/18/2014
52.4	1	XU 8	0-10	Lithic	debris	bipolar flake			quartz	>0-<50%		3 (<1/2"-1/4")	1.6		9/18/2014
52.5	1	XU 8	0-10	Lithic	debris	other G4 flake			Swan River Chert	0%	heat treated	4 (<1/4")	0.1		9/18/2014
52.6	1	XU 8	0-10	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.2		9/18/2014
52	4	XU 8	0-10	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	312		9/18/2014
52	4	XU 8	0-10	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	39		9/18/2014
52	2	XU 8	0-10	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	3		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
52	1	XU 8	0-10	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	20		9/18/2014
52	1	XU 8	0-10	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	2		9/18/2014
52	1	XU 8	0-10	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	11		9/18/2014
52	1	XU 8	0-10	Lithic	fire-cracked rock	cobble with spall			granitic			1 (<2"-1")	36		9/18/2014
52	1	XU 8	0-10	Lithic	fire-cracked rock	angular/spall			basaltic			1 (<2"-1")	126		9/18/2014
52	1	XU 8	0-10	Lithic	fire-cracked rock	crumb			granitic			3 (<1/2"-1/4")	1		9/18/2014
52	8	XU 8	0-10	Lithic	fire-cracked rock	crumb			granitic			4 (<1/4")	1		9/18/2014
53.1-4	4	XU 8	10-20	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	1.2		9/18/2014
53.5	1	XU 8	10-20	Ceramic	body	grit temper	smooth					3 (<1/2"-1/4")	0.7	4.7 mm	9/18/2014
53.6	1	XU 8	10-20	Lithic	tool	unpatterned flake	utilized flake	FCR- spall	basaltic	100%		1 (<2"-1")	15.3		9/18/2014
53.7	1	XU 8	10-20	Lithic	debris	bipolar flake			quartz	100%		2 (<1"-1/2")	4.2		9/18/2014
53.8	1	XU 8	10-20	Lithic	debris	decortication			quartz	100%		2 (<1"-1/2")	2.7		9/18/2014
53.9	1	XU 8	10-20	Lithic	debris	decortication			Knife Lake Siltstone	100%		2 (<1"-1/2")	3.9		9/18/2014
53.1	1	XU 8	10-20	Lithic	debris	nonbifacial			chalcedony	100%		3 (<1/2"-1/4")	0.5		9/18/2014
53.11-12	2	XU 8	10-20	Lithic	debris	nonbifacial			quartz	0%		3 (<1/2"-1/4")	2.5		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
53.13	1	XU 8	10-20	Lithic	debris	nonbifacial			quartz	100%		3 (<1/2"-1/4")	0.3		9/18/2014
53.14-15	2	XU 8	10-20	Lithic	debris	bifacial shaping			Prairie du Chien Chert (oolitic)	0%	heat treated	4 (<1/4")	0.2		9/18/2014
53.16-17	2	XU 8	10-20	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	0.7		9/18/2014
53.18-19	2	XU 8	10-20	Lithic	debris	broken flake			basaltic	0%		3 (<1/2"-1/4")	0.5		9/18/2014
53.20-21	2	XU 8	10-20	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.9		9/18/2014
53.22	1	XU 8	10-20	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.1		9/18/2014
53.23	1	XU 8	10-20	Lithic	debris	other G4 flake			Tongue River Silica	0%	heat treated	4 (<1/4")	0.1		9/18/2014
53.24	1	XU 8	10-20	Botanical	wood charcoal	charcoal						3 (<1/2"-1/4")	0.1		9/18/2014
53	1	XU 8	10-20	Lithic	fire-cracked rock	angular			granitic			0 (<4"-2")	378		9/18/2014
53	3	XU 8	10-20	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	203		9/18/2014
53	5	XU 8	10-20	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	49		9/18/2014
53	2	XU 8	10-20	Lithic	fire-cracked rock	angular			metamorphic			2 (<1"-1/2")	17		9/18/2014
53	1	XU 8	10-20	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	19		9/18/2014
53	3	XU 8	10-20	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	6		9/18/2014
53	1	XU 8	10-20	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	20		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
53	1	XU 8	10-20	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	5		9/18/2014
53	1	XU 8	10-20	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	3		9/18/2014
53	3	XU 8	10-20	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	152		9/18/2014
53	1	XU 8	10-20	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	15		9/18/2014
53	2	XU 8	10-20	Lithic	fire-cracked rock	angular			unidentified material			3 (<1/2"-1/4")	4		9/18/2014
53	1	XU 8	10-20	Lithic	fire-cracked rock	spall			quartzite			1 (<2"-1")	92		9/18/2014
53	1	XU 8	10-20	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	11		9/18/2014
53	2	XU 8	10-20	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	5		9/18/2014
53	1	XU 8	10-20	Lithic	fire-cracked rock	spall			metamorphic			2 (<1"-1/2")	3		9/18/2014
53	2	XU 8	10-20	Lithic	fire-cracked rock	spall			metamorphic			3 (<1/2"-1/4")	2		9/18/2014
53	1	XU 8	10-20	Lithic	fire-cracked rock	spall			basaltic			1 (<2"-1")	17		9/18/2014
53	4	XU 8	10-20	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	15		9/18/2014
53	1	XU 8	10-20	Lithic	fire-cracked rock	spall			basaltic			3 (<1/2"-1/4")	2		9/18/2014
53	2	XU 8	10-20	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	6		9/18/2014
53	2	XU 8	10-20	Lithic	fire-cracked rock	spall			unidentified material			3 (<1/2"-1/4")	2		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
53	1	XU 8	10-20	Lithic	fire-cracked rock	cobble (non-friable)			quartzite			1 (<2"-1")	90		9/18/2014
53	2	XU 8	10-20	Lithic	fire-cracked rock	friable rounded piece			granitic			2 (<1"-1/2")	6		9/18/2014
53	4	XU 8	10-20	Lithic	fire-cracked rock	friable rounded piece			granitic			3 (<1/2"-1/4")	4		9/18/2014
54.1	1	XU 8	20-30	Faunal	mammalian, large	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	1.1		9/18/2014
54.2	1	XU 8	20-30	Faunal	mammalian, small	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.3		9/18/2014
54.3-9	7	XU 8	20-30	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	2.2		9/18/2014
54.10-15	6	XU 8	20-30	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.9		9/18/2014
54.16	1	XU 8	20-30	Lithic	debris	nonbifacial			basaltic	>0-<50%		1 (<2"-1")	24.6		9/18/2014
54.17	1	XU 8	20-30	Lithic	debris	nonbifacial			basaltic	>0-<50%		2 (<1"-1/2")	6.6		9/18/2014
54.18	1	XU 8	20-30	Lithic	debris	nonbifacial			basaltic	>0-<50%		3 (<1/2"-1/4")	1.1		9/18/2014
54.19	1	XU 8	20-30	Lithic	debris	nonbifacial			basaltic	0%		2 (<1"-1/2")	4.3		9/18/2014
54.2	1	XU 8	20-30	Lithic	debris	nonbifacial			basaltic	0%		3 (<1/2"-1/4")	1.6		9/18/2014
54.21	1	XU 8	20-30	Lithic	debris	nonbifacial			quartz	>0-<50%		2 (<1"-1/2")	3.9		9/18/2014
54.22-24	3	XU 8	20-30	Lithic	debris	bipolar flake			quartz	0%		3 (<1/2"-1/4")	3.4		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
54.25	1	XU 8	20-30	Lithic	debris	bipolar flake			quartz	50-<100%		2 (<1"-1/2")	7.1		9/18/2014
54.26	1	XU 8	20-30	Lithic	debris	bifacial thinning			Prairie du Chien Chert (oolitic)	0%	heat treated	3 (<1/2"-1/4")	0.4		9/18/2014
54.27	1	XU 8	20-30	Lithic	debris	bifacial shaping			unidentified chert	0%	probably heat treated	3 (<1/2"-1/4")	0.1		9/18/2014
54.28	1	XU 8	20-30	Lithic	debris	bifacial shaping			Prairie du Chien Chert (oolitic)	0%	heat treated	3 (<1/2"-1/4")	0.2		9/18/2014
54.29-30	2	XU 8	20-30	Lithic	debris	bifacial shaping			Prairie du Chien Chert (oolitic)	0%	heat treated	4 (<1/4")	0.1		9/18/2014
54.31	1	XU 8	20-30	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	0.2		9/18/2014
54.32	1	XU 8	20-30	Lithic	debris	broken flake			Knife River Flint	0%		3 (<1/2"-1/4")	0.4		9/18/2014
54.33-36	4	XU 8	20-30	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	1.6		9/18/2014
54.37-38	2	XU 8	20-30	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.1		9/18/2014
54.39-40	2	XU 8	20-30	Ceramic	body	grit temper	cord marked					2 (<1"-1/2")	3.6	5.1 & 5.3 mm	9/18/2014
54.41-43	3	XU 8	20-30	Ceramic	body	grit temper	smooth					3 (<1/2"-1/4")	2.4	4.7,5.0,4.3 mm	9/18/2014
54	1	XU 8	20-30	Lithic	fire-cracked rock	angular			quartzite			0 (<4"-2")	303		9/18/2014
54	1	XU 8	20-30	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	41		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
54	3	XU 8	20-30	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	47		9/18/2014
54	2	XU 8	20-30	Lithic	fire-cracked rock	angular			quartzite			3 (<1/2"-1/4")	5		9/18/2014
54	2	XU 8	20-30	Lithic	fire-cracked rock	angular			metamorphic			1 (<2"-1")	35		9/18/2014
54	5	XU 8	20-30	Lithic	fire-cracked rock	angular			metamorphic			2 (<1"-1/2")	31		9/18/2014
54	6	XU 8	20-30	Lithic	fire-cracked rock	angular			metamorphic			3 (<1/2"-1/4")	7		9/18/2014
54	6	XU 8	20-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	325		9/18/2014
54	5	XU 8	20-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	45		9/18/2014
54	5	XU 8	20-30	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	7		9/18/2014
54	2	XU 8	20-30	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	84		9/18/2014
54	1	XU 8	20-30	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	16		9/18/2014
54	1	XU 8	20-30	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	20		9/18/2014
54	2	XU 8	20-30	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	7		9/18/2014
54	1	XU 8	20-30	Lithic	fire-cracked rock	spall			basaltic			1 (<2"-1")	51		9/18/2014
54	2	XU 8	20-30	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	16		9/18/2014
54	1	XU 8	20-30	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	2		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
54	1	XU 8	20-30	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	3		9/18/2014
54	1	XU 8	20-30	Lithic	fire-cracked rock	cobble (non-friable)			granitic			0 (<4"-2")	768		9/18/2014
54	2	XU 8	20-30	Lithic	fire-cracked rock	friable rounded piece			granitic			2 (<1"-1/2")	12		9/18/2014
54	1	XU 8	20-30	Lithic	fire-cracked rock	friable rounded piece			granitic			3 (<1/2"-1/4")	2		9/18/2014
55.1-7	7	XU 8	30-40	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	2		9/18/2014
55.8-10	3	XU 8	30-40	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.4		9/18/2014
55.11	1	XU 8	30-40	Lithic	core	bipolar (rotated)			Lake Superior Agate	0%	heat treated	3 (<1/2"-1/4")	2.3		9/18/2014
55.12	1	XU 8	30-40	Lithic	debris	bipolar flake			quartz	0%		2 (<1"-1/2")	4.5		9/18/2014
55.13	1	XU 8	30-40	Lithic	debris	bipolar flake			quartz	50-<100%		2 (<1"-1/2")	3.9		9/18/2014
55.14-17	4	XU 8	30-40	Lithic	debris	bifacial shaping			Prairie du Chien Chert (oolitic)	0%	heat treated	4 (<1/4")	0.3		9/18/2014
55.18	1	XU 8	30-40	Lithic	debris	broken flake			chalcedony	0%		3 (<1/2"-1/4")	0.4		9/18/2014
55.19	1	XU 8	30-40	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.5		9/18/2014
55.2	1	XU 8	30-40	Botanical	bark	bark						3 (<1/2"-1/4")	2.6	charred	9/18/2014
55	2	XU 8	30-40	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	98		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
55	5	XU 8	30-40	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	64		9/18/2014
55	3	XU 8	30-40	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	23		9/18/2014
55	1	XU 8	30-40	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	19		9/18/2014
55	3	XU 8	30-40	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	197		9/18/2014
55	4	XU 8	30-40	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	36		9/18/2014
55	3	XU 8	30-40	Lithic	fire-cracked rock	angular			quartzite			3 (<1/2"-1/4")	5		9/18/2014
55	1	XU 8	30-40	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	42		9/18/2014
55	1	XU 8	30-40	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	7		9/18/2014
55	2	XU 8	30-40	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	13		9/18/2014
55	1	XU 8	30-40	Lithic	fire-cracked rock	spall			unidentified material			1 (<2"-1")	58		9/18/2014
55	3	XU 8	30-40	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	2		9/18/2014
55	1	XU 8	30-40	Lithic	fire-cracked rock	spall			unidentified material			3 (<1/2"-1/4")	1		9/18/2014
55	2	XU 8	30-40	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	10		9/18/2014
55	1	XU 8	30-40	Lithic	fire-cracked rock	cobble with spall			granitic			1 (<2"-1")	66		9/18/2014
55	2	XU 8	30-40	Lithic	fire-cracked rock	cobble (non-friable)			granitic			0 (<4"-2")	966		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
55	1	XU 8	30-40	Lithic	fire-cracked rock	cobble (friable)			granitic			0 (<4"-2")	204		9/18/2014
55	1	XU 8	30-40	Lithic	fire-cracked rock	cobble (friable)			granitic			1 (<2"-1")	93		9/18/2014
55	3	XU 8	30-40	Lithic	fire-cracked rock	friable rounded piece			granitic			2 (<1"-1/2")	12		9/18/2014
55	3	XU 8	30-40	Lithic	fire-cracked rock	friable rounded piece			granitic			3 (<1/2"-1/4")	4		9/18/2014
55	15	XU 8	30-40	Lithic	fire-cracked rock	friable rounded piece			granitic			4 (<1/4")	3		9/18/2014
56.1-2	2	XU 8	40-50	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.7		9/19/2014
56.3-8	6	XU 8	40-50	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.4		9/19/2014
56.9	1	XU 8	40-50	Lithic	debris	bifacial shaping			Prairie du Chien Chert (oolitic)	0%	heat treated	4 (<1/4")	0.1		9/19/2014
56.1	1	XU 8	40-50	Lithic	debris	bifacial shaping			quartzite	0%		4 (<1/4")	0.1		9/19/2014
56.11	1	XU 8	40-50	Lithic	debris	bifacial shaping			Swan River Chert	0%	heat treated	4 (<1/4")	0.1		9/19/2014
56.12	1	XU 8	40-50	Lithic	debris	bipolar flake			Lake Superior Agate	100%		3 (<1/2"-1/4")	0.4		9/19/2014
56.13	1	XU 8	40-50	Lithic	debris	other G4 flake			Prairie du Chien Chert (oolitic)	0%	heat treated	4 (<1/4")	0.1		9/19/2014
56.14	1	XU 8	40-50	Lithic	debris	other G4 flake			Tongue River Silica	100%	heat treated	4 (<1/4")	0.1		9/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
56	1	XU 8	40-50	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	163		9/19/2014
56	1	XU 8	40-50	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	14		9/19/2014
56	3	XU 8	40-50	Lithic	fire-cracked rock	angular			metamorphic			2 (<1"-1/2")	27		9/19/2014
56	1	XU 8	40-50	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	78		9/19/2014
56	1	XU 8	40-50	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	4		9/19/2014
56	1	XU 8	40-50	Lithic	fire-cracked rock	spall			basaltic			3 (<1/2"-1/4")	1		9/19/2014
57.1-2	2	XU 8	50-60	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	1.1		9/19/2014
57.3-7	5	XU 8	50-60	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.4		9/19/2014
57.8	1	XU 8	50-60	Lithic	debris	bifacial shaping			Knife River Flint	0%		4 (<1/4")	0.2		9/19/2014
57.9	1	XU 8	50-60	Lithic	debris	bifacial shaping			Swan River Chert	0%	heat treated	4 (<1/4")	0.1		9/19/2014
57.10-13	4	XU 8	50-60	Lithic	debris	bifacial shaping			Prairie du Chien Chert (oolitic)	0%	heat treated	4 (<1/4")	0.4		9/19/2014
57.14	1	XU 8	50-60	Lithic	debris	edge preparation			Knife Lake Siltstone	0%		3 (<1/2"-1/4")	1.5		9/19/2014
57.15	1	XU 8	50-60	Lithic	debris	broken flake			unidentified material	0%		3 (<1/2"-1/4")	0.5		9/19/2014
57	1	XU 8	50-60	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	80		9/19/2014
57	2	XU 8	50-60	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	13		9/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
57	1	XU 8	50-60	Lithic	fire-cracked rock	spall			unidentified material			1 (<2"-1")	66		9/19/2014
58.1-3	3	XU 8	60-70	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	1		9/19/2014
59.1	1	XU 9	10-20	Lithic	debris	decortication			basaltic	50-<100%		2 (<1"-1/2")	14		9/18/2014
59.2	1	XU 9	10-20	Lithic	debris	bipolar flake			Lake Superior Agate	0%		3 (<1/2"-1/4")	0.5		9/18/2014
59.3	1	XU 9	10-20	Lithic	debris	bipolar flake			Tongue River Silica	100%		2 (<1"-1/2")	11.8		9/18/2014
59.4	1	XU 9	10-20	Lithic	debris	broken flake			Tongue River Silica	0%		3 (<1/2"-1/4")	0.7		9/18/2014
59.5	1	XU 9	10-20	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.5		9/18/2014
59	1	XU 9	10-20	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	1.1		9/18/2014
59	3	XU 9	10-20	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	25.8		9/18/2014
59	1	XU 9	10-20	Lithic	fire-cracked rock	angular/spall			basaltic			2 (<1"-1/2")	3.8		9/18/2014
59	1	XU 9	10-20	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	6.9		9/18/2014
59	1	XU 9	10-20	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	40.7		9/18/2014
59	1	XU 9	10-20	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	41.1		9/18/2014
59	2	XU 9	10-20	Lithic	fire-cracked rock	spall			basaltic			1 (<2"-1")	45.1		9/18/2014
60.1	1	XU 9	20-30	Lithic	debris	bipolar flake			quartz	50-<100%		2 (<1"-1/2")	4.9		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
60.2	1	XU 9	20-30	Lithic	debris	nonbifacial			Tongue River Silica	0%		3 (<1/2"-1/4")	1.5		9/18/2014
60.3	1	XU 9	20-30	Lithic	debris	decortication			Lake Superior Agate	100%		3 (<1/2"-1/4")	0.8		9/18/2014
60.4	1	XU 9	20-30	Lithic	debris	broken flake			basaltic	0%		3 (<1/2"-1/4")	1.3		9/18/2014
60.5	1	XU 9	20-30	Lithic	debris	other G4 flake			Lake Superior Agate	0%		4 (<1/4")	0.2		9/18/2014
60	1	XU 9	20-30	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	17		9/18/2014
60	1	XU 9	20-30	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	10		9/18/2014
61.1	1	XU 9	30-40	Lithic	debris	decortication			unidentified chert	100%		2 (<1"-1/2")	6.9		9/19/2014
61.2	1	XU 9	30-40	Lithic	debris	nonbifacial			Swan River Chert	0%	heat treated	2 (<1"-1/2")	6.3		9/19/2014
62.1	1	XU 9	40-50	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	6		9/19/2014
63.1	1	XU 10	0-10	Ceramic	body	grit temper	smooth			residue present		2 (<1"-1/2")	2	5.0 mm	9/23/2014
63.2	1	XU 10	0-10	Ceramic	neck	grit temper	smooth					2 (<1"-1/2")	3.4	5.4 mm	9/23/2014
63.3-4	2	XU 10	0-10	Ceramic	body	grit temper	cord marked					3 (<1/2"-1/4")	1.7	4.2 & 3.7 mm	9/23/2014
63.5	1	XU 10	0-10	Ceramic	body	grit temper	undetermined		exterior absent			3 (<1/2"-1/4")	0.7		9/23/2014
63	3	XU 10	0-10	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	284		9/23/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
63	1	XU 10	0-10	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	12		9/23/2014
63	1	XU 10	0-10	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	4		9/23/2014
64.3	1	XU 10	10-20	Lithic	debris	nonbifacial			Knife Lake Siltstone	100%		2 (<1"-1/2")	3.6		9/23/2014
64.4-5	2	XU 10	10-20	Lithic	debris	bipolar flake			quartz	0%		3 (<1/2"-1/4")	1.1		9/23/2014
64.6	1	XU 10	10-20	Lithic	debris	shatter			quartz	0%		3 (<1/2"-1/4")	2.7		9/23/2014
64.7	1	XU 10	10-20	Lithic	debris	shatter			quartz	0%		4 (<1/4")	0.7		9/23/2014
64.8-9	2	XU 10	10-20	Ceramic	body	grit temper	cord marked					2 (<1"-1/2")	5.3	3.9 & 3.3 mm	9/23/2014
64.10-12	3	XU 10	10-20	Ceramic	body	grit temper	cord marked					3 (<1/2"-1/4")	1.4	2.7,3.1,3.2 mm	9/23/2014
64.13-14	2	XU 10	10-20	Ceramic	body	grit temper	undetermined		exterior absent			3 (<1/2"-1/4")	1.3		9/23/2014
64.15	1	XU 10	10-20	Botanical	wood charcoal	charcoal						3 (<1/2"-1/4")	1.3		9/23/2014
64	1	XU 10	10-20	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	6		9/23/2014
64	1	XU 10	10-20	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	11		9/23/2014
64	2	XU 10	10-20	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	91		9/23/2014
64	1	XU 10	10-20	Lithic	fire-cracked rock	angular/spall			unidentified material			1 (<2"-1")	48		9/23/2014
64	1	XU 10	10-20	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	72		9/23/2014
64	1	XU 10	10-20	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	6		9/23/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
64	2	XU 10	10-20	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	15		9/23/2014
64	1	XU 10	10-20	Lithic	fire-cracked rock	spall			basaltic			3 (<1/2"-1/4")	1		9/23/2014
64	1	XU 10	10-20	Lithic	fire-cracked rock	spall			unidentified material			1 (<2"-1")	31		9/23/2014
64	2	XU 10	10-20	Lithic	fire-cracked rock	friable rounded piece			granitic			2 (<1"-1/2")	8		9/23/2014
64.1	1	XU 10	10-20	Lithic	debris	bipolar flake			quartz	>0-<50%		2 (<1"-1/2")	3.1		9/23/2014
64.2	1	XU 10	10-20	Lithic	debris	bipolar flake			quartz	100%		3 (<1/2"-1/4")	2		9/23/2014
64.16	1	XU 10	10-20	Ceramic	body	grit temper	cord marked					2 (<1"-1/2")	6.4	4.2 mm	9/23/2014
65.1-2	2	XU 10	20-30	Lithic	debris	bipolar flake			quartz	100%		3 (<1/2"-1/4")	2.4		9/23/2014
65.3	1	XU 10	20-30	Lithic	debris	nonbifacial			quartz	0%		3 (<1/2"-1/4")	1.1		9/23/2014
65.4	1	XU 10	20-30	Lithic	debris	nonbifacial			quartz	100%		3 (<1/2"-1/4")	0.7		9/23/2014
65.5	1	XU 10	20-30	Lithic	debris	decortication			quartz	100%		2 (<1"-1/2")	6		9/23/2014
65.6	1	XU 10	20-30	Lithic	debris	bifacial thinning			unidentified material	0%	probably heat treated	3 (<1/2"-1/4")	0.8		9/23/2014
65.7	1	XU 10	20-30	Lithic	debris	bifacial thinning			unidentified chert	0%	probably heat treated	3 (<1/2"-1/4")	0.1		9/23/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
65.8	1	XU 10	20-30	Lithic	debris	bifacial shaping			Prairie du Chien Chert (oolitic)	0%	heat treated	3 (<1/2"-1/4")	0.1		9/23/2014
65.9-10	2	XU 10	20-30	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	1.3		9/23/2014
65.11-12	2	XU 10	20-30	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.5		9/23/2014
65.13	1	XU 10	20-30	Lithic	debris	shatter			quartz	0%		3 (<1/2"-1/4")	0.7		9/23/2014
65.14-16	3	XU 10	20-30	Faunal	mammalian, medium/large	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	2.8		9/23/2014
65.17-21	5	XU 10	20-30	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	1		9/23/2014
65.22	1	XU 10	20-30	Ceramic	body	grit temper	smooth					2 (<1"-1/2")	1.6	4.9 mm	9/23/2014
65.23	1	XU 10	20-30	Ceramic	body	grit temper	smooth			residue present		2 (<1"-1/2")	1.9	3.6 mm	9/23/2014
65.24	1	XU 10	20-30	Ceramic	body	grit temper	cord marked					2 (<1"-1/2")	1.6	4.0 mm	9/23/2014
65.25-26	2	XU 10	20-30	Ceramic	body	grit temper	cord marked					3 (<1/2"-1/4")	1.7	4.0 & 3.9 mm	9/23/2014
65	3	XU 10	20-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	245		9/23/2014
65	10	XU 10	20-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	80		9/23/2014
65	5	XU 10	20-30	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	9		9/23/2014
65	2	XU 10	20-30	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	66		9/23/2014
65	4	XU 10	20-30	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	26		9/23/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
65	1	XU 10	20-30	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	64		9/23/2014
65	1	XU 10	20-30	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	7		9/23/2014
65	1	XU 10	20-30	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	5		9/23/2014
65	1	XU 10	20-30	Lithic	fire-cracked rock	angular/spall			granitic			3 (<1/2"-1/4")	1		9/23/2014
65	1	XU 10	20-30	Lithic	fire-cracked rock	angular/spall			basaltic			1 (<2"-1")	76		9/23/2014
65	1	XU 10	20-30	Lithic	fire-cracked rock	spall			basaltic			1 (<2"-1")	14		9/23/2014
65	4	XU 10	20-30	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	8		9/23/2014
65	1	XU 10	20-30	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	3		9/23/2014
65	1	XU 10	20-30	Lithic	fire-cracked rock	spall			unidentified material			1 (<2"-1")	35		9/23/2014
65	1	XU 10	20-30	Lithic	fire-cracked rock	cobble with spall			granitic			0 (<4"-2")	617		9/23/2014
65	1	XU 10	20-30	Lithic	fire-cracked rock	split cobble			unidentified material			0 (<4"-2")	414		9/23/2014
65	3	XU 10	20-30	Lithic	fire-cracked rock	friable rounded piece			granitic			2 (<1"-1/2")	48		9/23/2014
65	2	XU 10	20-30	Lithic	fire-cracked rock	crumb			granitic			3 (<1/2"-1/4")	1		9/23/2014
65	2	XU 10	20-30	Lithic	fire-cracked rock	crumb			quartzite			3 (<1/2"-1/4")	1		9/23/2014
66.1-9	9	XU 10	30-40	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	1.7		9/23/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
66.10-19	10	XU 10	30-40	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	1.3		9/23/2014
66.2	1	XU 10	30-40	Lithic	tool	patterned flake (unifacial retouch)	retouched flake	nonbifacial	Swan River Chert	0%	heat treated	2 (<1"-1/2")	2.3	finished, whole	9/23/2014
66.21	1	XU 10	30-40	Lithic	debris	decortication			unidentified chert	50-<100%		2 (<1"-1/2")	8.6		9/23/2014
66.22	1	XU 10	30-40	Lithic	debris	nonbifacial			quartz	0%		3 (<1/2"-1/4")	2.1		9/23/2014
66.23	1	XU 10	30-40	Lithic	debris	bifacial thinning			quartz	0%		3 (<1/2"-1/4")	1.5		9/23/2014
66.24-26	3	XU 10	30-40	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	1.1		9/23/2014
66.27-28	2	XU 10	30-40	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.1		9/23/2014
66	1	XU 10	30-40	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	40		9/23/2014
66	1	XU 10	30-40	Lithic	fire-cracked rock	angular			metamorphic			2 (<1"-1/2")	20		9/23/2014
66	1	XU 10	30-40	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	7		9/23/2014
66	1	XU 10	30-40	Lithic	fire-cracked rock	spall			quartzite			1 (<2"-1")	59		9/23/2014
66	1	XU 10	30-40	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	1		9/23/2014
66.29-30	2	XU 10	30-40	Faunal	turtle	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	2.2	Beta-destroyed	9/23/2014
66.31-33	3	XU 10	30-40	Faunal	mammalian, medium/large	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	2.2	Beta-destroyed	9/23/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
67.1	1	XU 10	40-50	Faunal	mammalian, medium/large	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	1		9/23/2014
67	1	XU 10	40-50	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	39		9/23/2014
67	1	XU 10	40-50	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	6		9/23/2014
67	1	XU 10	40-50	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	40		9/23/2014
67	1	XU 10	40-50	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	2		9/23/2014
67	1	XU 10	40-50	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	32.9		9/23/2014
68.1	1	XU 11	10-20	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.4		9/23/2014
68	1	XU 11	10-20	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	99		9/23/2014
68	2	XU 11	10-20	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	31		9/23/2014
68	1	XU 11	10-20	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	2		9/23/2014
68	1	XU 11	10-20	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	47		9/23/2014
68	3	XU 11	10-20	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	88		9/23/2014
68	1	XU 11	10-20	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	7		9/23/2014
68	1	XU 11	10-20	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	7		9/23/2014
68	1	XU 11	10-20	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	40		9/23/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
68	1	XU 11	10-20	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	59		9/23/2014
68	1	XU 11	10-20	Lithic	fire-cracked rock	cobble with angular			basaltic			1 (<2"-1")	137		9/23/2014
68	2	XU 11	10-20	Lithic	fire-cracked rock	friable rounded piece			granitic			2 (<1"-1/2")	9		9/23/2014
68	1	XU 11	10-20	Lithic	fire-cracked rock	friable rounded piece			granitic			3 (<1/2"-1/4")	3		9/23/2014
69.1	1	XU 11	20-30	Lithic	tool	unpatterned flake	utilized flake	nonbifacial	quartz	0%		2 (<1"-1/2")	8.7	finished, whole	9/23/2014
69.2-4	3	XU 11	20-30	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.4		9/23/2014
69.5-7	3	XU 11	20-30	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.4		9/23/2014
69	3	XU 11	20-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	214		9/23/2014
69	2	XU 11	20-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	19		9/23/2014
69	2	XU 11	20-30	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	110		9/23/2014
69	2	XU 11	20-30	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	67		9/23/2014
69	1	XU 11	20-30	Lithic	fire-cracked rock	cobble with angular			basaltic			1 (<2"-1")	87		9/23/2014
69	2	XU 11	20-30	Lithic	fire-cracked rock	crumb			granitic			4 (<1/4")	1		9/23/2014
70.1-3	3	XU 11	30-40	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.7		9/23/2014
70.4-5	2	XU 11	30-40	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.3		9/23/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
70.6	1	XU 11	30-40	Lithic	debris	broken flake			quartzite	50-<100%		3 (<1/2"-1/4")	1.3		9/23/2014
70.7	1	XU 11	30-40	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.1		9/23/2014
70	2	XU 11	30-40	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	91		9/23/2014
70	8	XU 11	30-40	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	89		9/23/2014
70	4	XU 11	30-40	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	3		9/23/2014
70	2	XU 11	30-40	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	142		9/23/2014
70	1	XU 11	30-40	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	125		9/23/2014
70	1	XU 11	30-40	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	2		9/23/2014
70	1	XU 11	30-40	Lithic	fire-cracked rock	crumb			granitic			3 (<1/2"-1/4")	1		9/23/2014
70	1	XU 11	30-40	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	38.6		9/23/2014
71.1-5	5	XU 11	40-50	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.4		9/23/2014
71.6	1	XU 11	40-50	Lithic	tool	unpatterned flake (bifacial retouch)	retouched flake	nonbifacial	quartz	0%		3 (<1/2"-1/4")	1.5	broken/ worn out, distal	9/23/2014
71.7	1	XU 11	40-50	Lithic	debris	bipolar flake			Lake Superior Agate	0%		3 (<1/2"-1/4")	0.2		9/23/2014
71	1	XU 11	40-50	Lithic	fire-cracked rock	angular			igneous			2 (<1"-1/2")	5		9/23/2014
71	1	XU 11	40-50	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	50		9/23/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
71	2	XU 11	40-50	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	57		9/23/2014
71	1	XU 11	40-50	Lithic	fire-cracked rock	angular/spall			quartzite			1 (<2"-1")	67		9/23/2014
71	1	XU 11	40-50	Lithic	fire-cracked rock	spall			quartzite			1 (<2"-1")	17		9/23/2014
72.1	1	XU 12	0-10	Lithic	debris	nonbifacial			unidentified material	100%		4 (<1/4")	0.2		9/25/2014
72.2	1	XU 12	0-10	Ceramic	body	grit temper	smooth					2 (<1"-1/2")	1.6	3.8 mm	9/25/2014
72.3-8	6	XU 12	0-10	Ceramic	body	grit temper	smooth		interior absent			3 (<1/2"-1/4")	1.7		9/25/2014
72.9-11	3	XU 12	0-10	Ceramic	body	grit temper	undetermined		exterior absent			3 (<1/2"-1/4")	0.6		9/25/2014
72.12-13	2	XU 12	0-10	Ceramic	body	grit temper	undetermined		exterior absent			4 (<1/4")	0.2		9/25/2014
72	2	XU 12	0-10	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	150		9/25/2014
72	1	XU 12	0-10	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	41		9/25/2014
72	2	XU 12	0-10	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	1		9/25/2014
72	1	XU 12	0-10	Lithic	fire-cracked rock	friable rounded piece			quartzite			2 (<1"-1/2")	4		9/25/2014
73.1	1	XU 12	10-20	Lithic	debris	bifacial shaping			Prairie du Chien Chert (oolitic)	0%	heat treated	4 (<1/4")	0.1		9/25/2014
73.2	1	XU 12	10-20	Lithic	debris	broken flake			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	1.4		9/25/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
73.3	1	XU 12	10-20	Ceramic	body	grit temper	cord marked					2 (<1"-1/2")	4	4.3 mm	9/25/2014
73.4	1	XU 12	10-20	Ceramic	body	grit temper	smooth					3 (<1/2"-1/4")	2	4.2 mm	9/25/2014
73.5-6	2	XU 12	10-20	Ceramic	body	grit temper	smooth					3 (<1/2"-1/4")	1.4	4.3 & 4.2 mm	9/25/2014
73.7-8	2	XU 12	10-20	Ceramic	body	grit temper	undetermined		exterior absent			3 (<1/2"-1/4")	0.6		9/25/2014
73	4	XU 12	10-20	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	364		9/25/2014
73	1	XU 12	10-20	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	12		9/25/2014
73	1	XU 12	10-20	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	101		9/25/2014
73	1	XU 12	10-20	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	34		9/25/2014
73	1	XU 12	10-20	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	9		9/25/2014
73	6	XU 12	10-20	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	3		9/25/2014
73	1	XU 12	10-20	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	11		9/25/2014
73	1	XU 12	10-20	Lithic	fire-cracked rock	spall			basaltic			3 (<1/2"-1/4")	1		9/25/2014
73	1	XU 12	10-20	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	1		9/25/2014
73	1	XU 12	10-20	Lithic	fire-cracked rock	cobble (non-friable)			quartzite			0 (<4"-2")	275		9/25/2014
73	1	XU 12	10-20	Lithic	fire-cracked rock	crumb			granitic			4 (<1/4")	1		9/25/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
74.1	1	XU 12	20-30	Lithic	core	freehand nonbifacial	unpatterned (multi-directional)	unprepared	quartz	>0-<50%		1 (<2"-1")	54.9		9/25/2014
74.2	1	XU 12	20-30	Lithic	debris	decortication			unidentified material	100%		3 (<1/2"-1/4")	1.4		9/25/2014
74.3	1	XU 12	20-30	Lithic	debris	bifacial shaping			Knife Lake Siltstone	0%		3 (<1/2"-1/4")	0.2		9/25/2014
74.4	1	XU 12	20-30	Lithic	debris	broken flake			unidentified chert	0%		3 (<1/2"-1/4")	0.4		9/25/2014
74.5	1	XU 12	20-30	Lithic	debris	broken flake			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	0.2		9/25/2014
74.6	1	XU 12	20-30	Lithic	debris	broken flake			Knife Lake Siltstone	0%		3 (<1/2"-1/4")	0.4		9/25/2014
74.7-8	2	XU 12	20-30	Lithic	debris	other G4 flake			quartzite	0%		4 (<1/4")	0.1		9/25/2014
74.9	1	XU 12	20-30	Lithic	debris	shatter			quartz	0%		3 (<1/2"-1/4")	0.6		9/25/2014
74	2	XU 12	20-30	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	83		9/25/2014
74	1	XU 12	20-30	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	11		9/25/2014
74	1	XU 12	20-30	Lithic	fire-cracked rock	angular			quartzite			3 (<1/2"-1/4")	2		9/25/2014
74	1	XU 12	20-30	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	24		9/25/2014
74	1	XU 12	20-30	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	2		9/25/2014
74	1	XU 12	20-30	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	2		9/25/2014
74	1	XU 12	20-30	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	52		9/25/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
74	1	XU 12	20-30	Lithic	fire-cracked rock	cobble (friable)			granitic			1 (<2"-1")	191		9/25/2014
74	1	XU 12	20-30	Lithic	fire-cracked rock	cobble with spall			granitic			1 (<2"-1")	172		9/25/2014
74	1	XU 12	20-30	Lithic	fire-cracked rock	friable rounded piece			granitic			3 (<1/2"-1/4")	2		9/25/2014
74	2	XU 12	20-30	Lithic	fire-cracked rock	crumb			granitic			3 (<1/2"-1/4")	1		9/25/2014
75.1-3	3	XU 12	30-40	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.8		9/25/2014
75	2	XU 12	30-40	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	75		9/25/2014
75	1	XU 12	30-40	Lithic	fire-cracked rock	cobble with spall			basaltic			1 (<2"-1")	97		9/25/2014
76.1	1	XU 12	40-50	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	1.2		9/25/2014
76	1	XU 12	40-50	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	4		9/25/2014
77.1	1	XU 13	0-10	Lithic	core	tested cobble			basaltic	100%		1 (<2"-1")	127		9/25/2014
77.2	1	XU 13	0-10	Lithic	debris	bipolar flake			rhyolite	100%		3 (<1/2"-1/4")	2		9/25/2014
77.3	1	XU 13	0-10	Lithic	debris	bipolar flake			unidentified material	0%		3 (<1/2"-1/4")	2		9/25/2014
77.4-5	2	XU 13	0-10	Lithic	debris	bipolar flake			basaltic	0%		3 (<1/2"-1/4")	4.8		9/25/2014
77.6	1	XU 13	0-10	Lithic	debris	bipolar flake			quartzite	50-<100%		2 (<1"-1/2")	22.2		9/25/2014
77.7	1	XU 13	0-10	Lithic	debris	broken flake			quartz	>0-<50%		3 (<1/2"-1/4")	0.3		9/25/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
77.8	1	XU 13	0-10	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.3		9/25/2014
77.9	1	XU 13	0-10	Lithic	debris	broken flake			basaltic	0%		2 (<1"-1/2")	3		9/25/2014
77.10-14	5	XU 13	0-10	Lithic	debris	broken flake			basaltic	0%		3 (<1/2"-1/4")	3.8		9/25/2014
77.15-16	2	XU 13	0-10	Lithic	debris	broken flake			basaltic	>0-<50%		3 (<1/2"-1/4")	1.9		9/25/2014
77.17	1	XU 13	0-10	Lithic	debris	broken flake			rhyolite	0%		2 (<1"-1/2")	2.7		9/25/2014
77.18-21	4	XU 13	0-10	Lithic	debris	broken flake			unidentified material	0%		3 (<1/2"-1/4")	3.1		9/25/2014
77.22-23	2	XU 13	0-10	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	0.9		9/25/2014
77.24	1	XU 13	0-10	Lithic	debris	shatter			basaltic	100%		3 (<1/2"-1/4")	0.9		9/25/2014
77.25	1	XU 13	0-10	Lithic	debris	shatter			quartz	>0-<50%		2 (<1"-1/2")	4		9/25/2014
77	1	XU 13	0-10	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	17		9/25/2014
77	1	XU 13	0-10	Lithic	fire-cracked rock	angular			quartzite			3 (<1/2"-1/4")	3		9/25/2014
77	3	XU 13	0-10	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	18.2		9/25/2014
78.1	1	XU 13	10-20	Lithic	core	bipolar (not rotated)			quartz	>0-<50%		2 (<1"-1/2")	17.8		9/25/2014
78.2-5	4	XU 13	10-20	Lithic	debris	decortication			unidentified material	100%		3 (<1/2"-1/4")	4.9		9/25/2014
78.6	1	XU 13	10-20	Lithic	debris	decortication			chalcedony	100%		3 (<1/2"-1/4")	0.8		9/25/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
78.7	1	XU 13	10-20	Lithic	debris	nonbifacial			quartz	>0-<50%		2 (<1"-1/2")	9.2		9/25/2014
78.8	1	XU 13	10-20	Lithic	debris	nonbifacial			Swan River Chert	50-<100%	heat treated	2 (<1"-1/2")	4.2		9/25/2014
78.9	1	XU 13	10-20	Lithic	debris	nonbifacial			quartz	100%		3 (<1/2"-1/4")	0.3		9/25/2014
78.1	1	XU 13	10-20	Lithic	debris	bipolar flake			Tongue River Silica	50-<100%		3 (<1/2"-1/4")	0.6		9/25/2014
78.11-13	3	XU 13	10-20	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	1.4		9/25/2014
78.14-15	2	XU 13	10-20	Lithic	debris	broken flake			basaltic	0%		3 (<1/2"-1/4")	1		9/25/2014
78.16	1	XU 13	10-20	Lithic	debris	broken flake			Tongue River Silica	>0-<50%	heat treated	3 (<1/2"-1/4")	1.3		9/25/2014
78.17	1	XU 13	10-20	Lithic	debris	broken flake			basaltic	0%		3 (<1/2"-1/4")	1.3		9/25/2014
78.18	1	XU 13	10-20	Lithic	debris	broken flake			chalcedony	0%		3 (<1/2"-1/4")	0.6		9/25/2014
78.19	1	XU 13	10-20	Lithic	debris	shatter			Swan River Chert	>0-<50%	heat treated	2 (<1"-1/2")	5.4		9/25/2014
78.2	1	XU 13	10-20	Faunal	mammalian, large	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	2.1		9/25/2014
78.21-22	2	XU 13	10-20	Faunal	mammalian	unidentifiable	fragment	calcined				2 (<1"-1/2")	3.3		9/25/2014
78.23-77	55	XU 13	10-20	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	22.7		9/25/2014
78.78-92	15	XU 13	10-20	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	1.6		9/25/2014
78	4	XU 13	10-20	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	200		9/25/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
78	7	XU 13	10-20	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	104		9/25/2014
78	1	XU 13	10-20	Lithic	fire-cracked rock	angular			quartzite			3 (<1/2"-1/4")	3		9/25/2014
78	2	XU 13	10-20	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	13		9/25/2014
78	1	XU 13	10-20	Lithic	fire-cracked rock	angular			unidentified material			3 (<1/2"-1/4")	2		9/25/2014
78	2	XU 13	10-20	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	152		9/25/2014
78	2	XU 13	10-20	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	19		9/25/2014
78	1	XU 13	10-20	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	97		9/25/2014
78	8	XU 13	10-20	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	114		9/25/2014
78	8	XU 13	10-20	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	18		9/25/2014
78	2	XU 13	10-20	Lithic	fire-cracked rock	spall			metamorphic			2 (<1"-1/2")	12		9/25/2014
78	1	XU 13	10-20	Lithic	fire-cracked rock	spall			metamorphic			3 (<1/2"-1/4")	1		9/25/2014
78	2	XU 13	10-20	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	13		9/25/2014
78	1	XU 13	10-20	Lithic	fire-cracked rock	spall			basaltic			1 (<2"-1")	99		9/25/2014
78	2	XU 13	10-20	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	18		9/25/2014
78	1	XU 13	10-20	Lithic	fire-cracked rock	angular/spall			metamorphic			1 (<2"-1")	24		9/25/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
78	1	XU 13	10-20	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	4		9/25/2014
78	2	XU 13	10-20	Lithic	fire-cracked rock	angular/spall			granitic			3 (<1/2"-1/4")	4		9/25/2014
78	1	XU 13	10-20	Lithic	fire-cracked rock	cobble with spall			granitic			0 (<4"-2")	405		9/25/2014
78	1	XU 13	10-20	Lithic	fire-cracked rock	cobble with spall			granitic			1 (<2"-1")	150		9/25/2014
78	9	XU 13	10-20	Lithic	fire-cracked rock	crumb			granitic			4 (<1/4")	2		9/25/2014
78.93	1	XU 13	10-20	Lithic	tool	patterned bifacial	projectile point		Swan River Chert	0%		2 (<1"-1/2")	6.8	Tablerock type; finished, whole	9/25/2014
79.1	1	XU 13	20-30	Lithic	core	freehand nonbifacial	unpatterned (multi-directional)	prepared	Knife Lake Siltstone	0%		1 (<2"-1")	49.4		9/25/2014
79.2	1	XU 13	20-30	Lithic	debris	bipolar flake			quartz	50-<100%		3 (<1/2"-1/4")	2.8		9/25/2014
79.3-4	2	XU 13	20-30	Lithic	debris	bipolar flake			quartz	100%		2 (<1"-1/2")	6.9		9/25/2014
79.5	1	XU 13	20-30	Lithic	debris	decortication			quartz	50-<100%		2 (<1"-1/2")	11.4		9/25/2014
79.6	1	XU 13	20-30	Lithic	debris	decortication			quartzite	100%		1 (<2"-1")	24		9/25/2014
79.7	1	XU 13	20-30	Lithic	debris	nonbifacial			chalcedony	>0-<50%	probably heat treated	2 (<1"-1/2")	14.4		9/25/2014
79.8	1	XU 13	20-30	Lithic	debris	nonbifacial			unidentified material	>0-<50%		2 (<1"-1/2")	3.6		9/25/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
79.9	1	XU 13	20-30	Lithic	debris	nonbifacial			quartz	0%		2 (<1"-1/2")	5.1		9/25/2014
79.1	1	XU 13	20-30	Lithic	debris	nonbifacial			Swan River Chert	50-<100%	heat treated	3 (<1/2"-1/4")	1.3		9/25/2014
79.11	1	XU 13	20-30	Lithic	debris	nonbifacial			Swan River Chert	100%	heat treated	3 (<1/2"-1/4")	0.5		9/25/2014
79.12	1	XU 13	20-30	Lithic	debris	other G4 flake			Swan River Chert	100%	heat treated	4 (<1/4")	0.2		9/25/2014
79.13-14	2	XU 13	20-30	Lithic	debris	broken flake			quartz	>0-<50%		3 (<1/2"-1/4")	1.6		9/25/2014
79.15	1	XU 13	20-30	Lithic	debris	broken flake			chalcedony	0%		3 (<1/2"-1/4")	0.6		9/25/2014
79.16-17	2	XU 13	20-30	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.7		9/25/2014
79.18	1	XU 13	20-30	Lithic	debris	shatter			unidentified material	0%		3 (<1/2"-1/4")	0.4		9/25/2014
79.19-20	2	XU 13	20-30	Lithic	debris	other G4 flake			unidentified material	0%		4 (<1/4")	0.3		9/25/2014
79.21	1	XU 13	20-30	Lithic	debris	shatter			quartz	0%		3 (<1/2"-1/4")	1.4		9/25/2014
79.22	1	XU 13	20-30	Lithic	debris	shatter			Tongue River Silica	0%		3 (<1/2"-1/4")	2.5		9/25/2014
79.23-24	2	XU 13	20-30	Faunal	mammalian, large	longbone	fragment	calcined				2 (<1"-1/2")	13.3	Beta tested	9/25/2014
79.25-27	3	XU 13	20-30	Faunal	mammalian, large	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	6.1		9/25/2014
79.28-115	88	XU 13	20-30	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	34.2		9/25/2014
79.116-149	34	XU 13	20-30	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	3.6		9/25/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
79	4	XU 13	20-30	Lithic	fire-cracked rock	angular			granitic			0 (<4"-2")	1231		9/25/2014
79	9	XU 13	20-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	629		9/25/2014
79	13	XU 13	20-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	126		9/25/2014
79	9	XU 13	20-30	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	17		9/25/2014
79	3	XU 13	20-30	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	237		9/25/2014
79	5	XU 13	20-30	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	39		9/25/2014
79	1	XU 13	20-30	Lithic	fire-cracked rock	angular			quartzite			3 (<1/2"-1/4")	3		9/25/2014
79	2	XU 13	20-30	Lithic	fire-cracked rock	angular			metamorphic			1 (<2"-1")	69		9/25/2014
79	2	XU 13	20-30	Lithic	fire-cracked rock	angular			metamorphic			2 (<1"-1/2")	12		9/25/2014
79	1	XU 13	20-30	Lithic	fire-cracked rock	angular			unidentified material			3 (<1/2"-1/4")	1		9/25/2014
79	2	XU 13	20-30	Lithic	fire-cracked rock	spall			metamorphic			3 (<1/2"-1/4")	2		9/25/2014
79	1	XU 13	20-30	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	1		9/25/2014
79	1	XU 13	20-30	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	1		9/25/2014
79	1	XU 13	20-30	Lithic	fire-cracked rock	angular/spall			granitic			3 (<1/2"-1/4")	1		9/25/2014
79	4	XU 13	20-30	Lithic	fire-cracked rock	friable rounded piece			granitic			3 (<1/2"-1/4")	3		9/25/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
79	5	XU 13	20-30	Lithic	fire-cracked rock	crumb			granitic			4 (<1/4")	1		9/25/2014
80.1	1	XU 13	30-40	Lithic	tool	unpatterned flake	utilized flake	nonbifacial	Knife Lake Siltstone	0%		2 (<1"-1/2")	3.6		9/26/2014
80.2	1	XU 13	30-40	Lithic	debris	bipolar flake			quartz	50-<100%		3 (<1/2"-1/4")	1		9/26/2014
80.3	1	XU 13	30-40	Lithic	debris	bipolar flake			quartz	0%		2 (<1"-1/2")	3.5		9/26/2014
80.4	1	XU 13	30-40	Lithic	debris	bipolar flake			quartz	0%		3 (<1/2"-1/4")	0.8		9/26/2014
80.5	1	XU 13	30-40	Lithic	debris	decortication			unidentified material	100%		3 (<1/2"-1/4")	1.6		9/26/2014
80.6	1	XU 13	30-40	Lithic	debris	broken flake			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	0.3		9/26/2014
80.7-8	2	XU 13	30-40	Lithic	debris	broken flake			quartz	50-<100%		3 (<1/2"-1/4")	0.9		9/26/2014
80.9	1	XU 13	30-40	Lithic	debris	broken flake			basaltic	0%		3 (<1/2"-1/4")	0.9		9/26/2014
80.1	1	XU 13	30-40	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.1		9/26/2014
80.11	1	XU 13	30-40	Faunal	mammalian, medium/large	unidentifiable	fragment	calcined				2 (<1"-1/2")	2.3		9/26/2014
80.12-30	19	XU 13	30-40	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	9.9		9/26/2014
80.31-33	3	XU 13	30-40	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.2		9/26/2014
80	1	XU 13	30-40	Lithic	fire-cracked rock	angular			granitic			00 (>4")	376		9/26/2014
80	5	XU 13	30-40	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	259		9/26/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
80	6	XU 13	30-40	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	30		9/26/2014
80	2	XU 13	30-40	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	73		9/26/2014
80	1	XU 13	30-40	Lithic	fire-cracked rock	spall			basaltic			1 (<2"-1")	17		9/26/2014
80	1	XU 13	30-40	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	7		9/26/2014
80	1	XU 13	30-40	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	3		9/26/2014
80	3	XU 13	30-40	Lithic	fire-cracked rock	angular/spall			granitic			3 (<1/2"-1/4")	4		9/26/2014
80	1	XU 13	30-40	Lithic	fire-cracked rock	cobble (non-friable)			quartzite			0 (<4"-2")	284		9/26/2014
80	1	XU 13	30-40	Lithic	fire-cracked rock	cobble with spall			basaltic			1 (<2"-1")	101		9/26/2014
80	3	XU 13	30-40	Lithic	fire-cracked rock	friable rounded piece			granitic			3 (<1/2"-1/4")	4		9/26/2014
80	2	XU 13	30-40	Lithic	fire-cracked rock	crumb			granitic			4 (<1/4")	1		9/26/2014
81.1	1	XU 13	40-50	Lithic	debris	nonbifacial			quartz	100%		3 (<1/2"-1/4")	0.4		9/26/2014
81.2	1	XU 13	40-50	Lithic	debris	broken flake			basaltic	0%		3 (<1/2"-1/4")	0.2		9/26/2014
81.3-4	2	XU 13	40-50	Lithic	debris	broken flake			chalcedony	0%		3 (<1/2"-1/4")	0.6		9/26/2014
81.5	1	XU 13	40-50	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.1		9/26/2014
81.6-18	13	XU 13	40-50	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	3.2		9/26/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
81.19-28	10	XU 13	40-50	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.4		9/26/2014
81	1	XU 13	40-50	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	85		9/26/2014
81	1	XU 13	40-50	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	10		9/26/2014
81	1	XU 13	40-50	Lithic	fire-cracked rock	angular			basaltic			3 (<1/2"-1/4")	4		9/26/2014
81	1	XU 13	40-50	Lithic	fire-cracked rock	spall			basaltic			1 (<2"-1")	28		9/26/2014
82.1	1	XU 13	50-60	Lithic	debris	nonbifacial			Lake Superior Agate	>0-<50%		3 (<1/2"-1/4")	0.5		9/26/2014
82.2	1	XU 13	50-60	Lithic	debris	bipolar flake			quartz	0%		3 (<1/2"-1/4")	1		9/26/2014
82.3	1	XU 13	50-60	Faunal	mammalian, medium/large	epiphysis	fragment	calcined				3 (<1/2"-1/4")	0.7	unfused	9/26/2014
82.4	1	XU 13	50-60	Faunal	turtle	carapace	fragment	calcined				3 (<1/2"-1/4")	0.1		9/26/2014
82.5-11	7	XU 13	50-60	Faunal	mammalian, medium/large	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	3.1		9/26/2014
82.12-15	4	XU 13	50-60	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.4		9/26/2014
82	1	XU 13	50-60	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	60		9/26/2014
82	1	XU 13	50-60	Lithic	fire-cracked rock	angular			quartzite			3 (<1/2"-1/4")	3		9/26/2014
82	1	XU 13	50-60	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	15		9/26/2014
83.1	1	XU 14	0-10	Lithic	debris	bipolar flake			unidentified material	0%		2 (<1"-1/2")	2.9		9/26/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
83.2	1	XU 14	0-10	Lithic	debris	nonbifacial			unidentified material	>0-<50%		3 (<1/2"-1/4")	0.5		9/26/2014
83.3	1	XU 14	0-10	Lithic	debris	nonbifacial			quartzite	>0-<50%		3 (<1/2"-1/4")	1.5		9/26/2014
83.4	1	XU 14	0-10	Lithic	debris	bifacial thinning			quartz	0%		3 (<1/2"-1/4")	0.2		9/26/2014
83.5	1	XU 14	0-10	Lithic	debris	broken flake			basaltic	0%		3 (<1/2"-1/4")	0.2		9/26/2014
83.6-7	2	XU 14	0-10	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.2		9/26/2014
83.8-9	2	XU 14	0-10	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.3		9/26/2014
83	1	XU 14	0-10	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	6		9/26/2014
83	3	XU 14	0-10	Lithic	fire-cracked rock	angular			granitic			0 (<4"-2")	959		9/26/2014
83	4	XU 14	0-10	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	294		9/26/2014
83	1	XU 14	0-10	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	38		9/26/2014
83	1	XU 14	0-10	Lithic	fire-cracked rock	angular			metamorphic			1 (<2"-1")	85		9/26/2014
83	1	XU 14	0-10	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	3		9/26/2014
83	1	XU 14	0-10	Lithic	fire-cracked rock	angular			basaltic			3 (<1/2"-1/4")	2		9/26/2014
83	1	XU 14	0-10	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	9		9/26/2014
83	1	XU 14	0-10	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	2		9/26/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
83	1	XU 14	0-10	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	5		9/26/2014
83	1	XU 14	0-10	Lithic	fire-cracked rock	angular/spall			unidentified material			2 (<1"-1/2")	12		9/26/2014
83	1	XU 14	0-10	Lithic	fire-cracked rock	friable rounded piece			granitic			2 (<1"-1/2")	9		9/26/2014
83	1	XU 14	0-10	Lithic	fire-cracked rock	friable rounded piece			granitic			3 (<1/2"-1/4")	1		9/26/2014
83	2	XU 14	0-10	Lithic	fire-cracked rock	crumb			granitic			4 (<1/4")	1		9/26/2014
84.1	1	XU 14	10-20	Lithic	tool	unpatterned flake	utilized flake	shatter	Tongue River Silica	>0-<50%		2 (<1"-1/2")	21.1	finished, whole	9/26/2014
84.2	1	XU 14	10-20	Lithic	core	freehand nonbifacial	unpatterned (multi-directional)	unprepared	unidentified material	>0-<50%		2 (<1"-1/2")	8.5		9/26/2014
84.3	1	XU 14	10-20	Lithic	tool	unpatterned flake	utilized flake	nonbifacial	Lake Superior Agate	0%		3 (<1/2"-1/4")	0.9	finished, whole	9/26/2014
84.4-5	2	XU 14	10-20	Lithic	debris	decortication			Gunflint Silica	100%		3 (<1/2"-1/4")	2.1		9/26/2014
84.6	1	XU 14	10-20	Lithic	debris	nonbifacial			Knife Lake Siltstone	100%		3 (<1/2"-1/4")	0.7		9/26/2014
84.7	1	XU 14	10-20	Lithic	debris	broken flake			Knife Lake Siltstone	0%	burned	3 (<1/2"-1/4")	0.3		9/26/2014
84.8	1	XU 14	10-20	Lithic	debris	bipolar flake			unidentified material	>0-<50%		3 (<1/2"-1/4")	0.7		9/26/2014
84.9-10	2	XU 14	10-20	Lithic	debris	bipolar flake			quartz	0%		3 (<1/2"-1/4")	2.2		9/26/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
84.11	1	XU 14	10-20	Lithic	debris	nonbifacial			quartz	50-<100%		3 (<1/2"-1/4")	0.3		9/26/2014
84.12-13	2	XU 14	10-20	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.8		9/26/2014
84.14-27	14	XU 14	10-20	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	6.8		9/26/2014
84.28	1	XU 14	10-20	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.1		9/26/2014
84	1	XU 14	10-20	Lithic	fire-cracked rock	angular			granitic			0 (<4"-2")	154		9/26/2014
84	5	XU 14	10-20	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	496		9/26/2014
84	11	XU 14	10-20	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	83		9/26/2014
84	4	XU 14	10-20	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	10		9/26/2014
84	3	XU 14	10-20	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	183		9/26/2014
84	1	XU 14	10-20	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	5		9/26/2014
84	2	XU 14	10-20	Lithic	fire-cracked rock	angular			metamorphic			2 (<1"-1/2")	15		9/26/2014
84	1	XU 14	10-20	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	8		9/26/2014
84	1	XU 14	10-20	Lithic	fire-cracked rock	angular			basaltic			3 (<1/2"-1/4")	3		9/26/2014
84	1	XU 14	10-20	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	36		9/26/2014
84	1	XU 14	10-20	Lithic	fire-cracked rock	spall			unidentified material			1 (<2"-1")	28		9/26/2014
84	2	XU 14	10-20	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	9		9/26/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
84	2	XU 14	10-20	Lithic	fire-cracked rock	spall			unidentified material			3 (<1/2"-1/4")	3		9/26/2014
84	1	XU 14	10-20	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	8		9/26/2014
84	1	XU 14	10-20	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	4		9/26/2014
84	1	XU 14	10-20	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	13		9/26/2014
84	1	XU 14	10-20	Lithic	fire-cracked rock	angular/spall			quartzite			1 (<2"-1")	29		9/26/2014
84	1	XU 14	10-20	Lithic	fire-cracked rock	angular/spall			basaltic			1 (<2"-1")	52		9/26/2014
84	2	XU 14	10-20	Lithic	fire-cracked rock	cobble (non-friable)			granitic			0 (<4"-2")	824		9/26/2014
84	2	XU 14	10-20	Lithic	fire-cracked rock	crumb			granitic			3 (<1/2"-1/4")	2		9/26/2014
84	15	XU 14	10-20	Lithic	fire-cracked rock	crumb			granitic			4 (<1/4")	2		9/26/2014
85.1	1	XU 14	20-30	Lithic	core	freehand nonbifacial	unpatterned (multi-directional)	unprepared	quartz	>0-<50%		1 (<2"-1")	39.2		9/26/2014
85.2	1	XU 14	20-30	Lithic	debris	bipolar flake			Swan River Chert	100%	heat treated	2 (<1"-1/2")	7.6		9/26/2014
85.3	1	XU 14	20-30	Lithic	debris	bipolar flake			quartz	100%		3 (<1/2"-1/4")	0.5		9/26/2014
85.4	1	XU 14	20-30	Lithic	debris	nonbifacial			quartz	0%		3 (<1/2"-1/4")	0.9		9/26/2014
85.5	1	XU 14	20-30	Lithic	debris	bipolar flake			quartz	0%		3 (<1/2"-1/4")	1.2		9/26/2014
85.6	1	XU 14	20-30	Faunal	mammalian, large	tooth	fragment					3 (<1/2"-1/4")	1		9/26/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
85.7	1	XU 14	20-30	Faunal	mammalian, large	unidentifiable	fragment	calcined				2 (<1"-1/2")	4.5		9/26/2014
85.8	1	XU 14	20-30	Faunal	mammalian, large	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	2.9		9/26/2014
85.9-37	29	XU 14	20-30	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	10.8		9/26/2014
85.38-44	7	XU 14	20-30	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.5		9/26/2014
85	1	XU 14	20-30	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	126		9/26/2014
85	1	XU 14	20-30	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	14		9/26/2014
85	7	XU 14	20-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	93		9/26/2014
85	1	XU 14	20-30	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	1		9/26/2014
85	3	XU 14	20-30	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	30		9/26/2014
85	1	XU 14	20-30	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	9		9/26/2014
85	1	XU 14	20-30	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	2		9/26/2014
85	1	XU 14	20-30	Lithic	fire-cracked rock	angular/spall			basaltic			1 (<2"-1")	33		9/26/2014
85	1	XU 14	20-30	Lithic	fire-cracked rock	angular/spall			unidentified material			1 (<2"-1")	38		9/26/2014
85	2	XU 14	20-30	Lithic	fire-cracked rock	angular/spall			unidentified material			2 (<1"-1/2")	44		9/26/2014
85	1	XU 14	20-30	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	29		9/26/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
85	1	XU 14	20-30	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	4		9/26/2014
85	1	XU 14	20-30	Lithic	fire-cracked rock	split cobble			granitic			1 (<2"-1")	104		9/26/2014
85	1	XU 14	20-30	Lithic	fire-cracked rock	cobble with spall			granitic			0 (<4"-2")	247		9/26/2014
85	1	XU 14	20-30	Lithic	fire-cracked rock	cobble with spall			granitic			1 (<2"-1")	110		9/26/2014
85	2	XU 14	20-30	Lithic	fire-cracked rock	cobble (friable)			granitic			1 (<2"-1")	221		9/26/2014
85	3	XU 14	20-30	Lithic	fire-cracked rock	friable rounded piece			granitic			3 (<1/2"-1/4")	3		9/26/2014
85	13	XU 14	20-30	Lithic	fire-cracked rock	crumb			granitic			4 (<1/4")	2		9/26/2014
85	1	XU 14	20-30	Lithic	fire-cracked rock	cobble with spall			quartzite			0 (<4"-2")	614		9/26/2014
86.1	1	XU 14	30-40	Lithic	debris	bipolar flake			quartz	100%		3 (<1/2"-1/4")	1.1		9/26/2014
86.2	1	XU 14	30-40	Lithic	debris	nonbifacial			unidentified material	50-<100%		2 (<1"-1/2")	1.8		9/26/2014
86.3	1	XU 14	30-40	Lithic	debris	other G4 flake			unidentified material	0%	probably heat treated	4 (<1/4")	0		9/26/2014
86.4	1	XU 14	30-40	Lithic	debris	shatter			quartz	0%		3 (<1/2"-1/4")	2.3		9/26/2014
86.5-12	8	XU 14	30-40	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	2.9		9/26/2014
86.13	1	XU 14	30-40	Faunal	mammalian	unidentifiable	fragment	burned				3 (<1/2"-1/4")	0.1		9/26/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
86	1	XU 14	30-40	Lithic	fire-cracked rock	angular			metamorphic			2 (<1"-1/2")	8		9/26/2014
86	1	XU 14	30-40	Lithic	fire-cracked rock	spall			metamorphic			2 (<1"-1/2")	7		9/26/2014
86	1	XU 14	30-40	Lithic	fire-cracked rock	spall			basaltic			1 (<2"-1")	66		9/26/2014
86	1	XU 14	30-40	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	23		9/26/2014
86	1	XU 14	30-40	Lithic	fire-cracked rock	cobble (non-friable)			quartzite			1 (<2"-1")	78		9/26/2014
86	1	XU 14	30-40	Lithic	fire-cracked rock	cobble (non-friable)			granitic			1 (<2"-1")	181		9/26/2014
87.1	1	XU 14	40-50	Lithic	tool	patterned flake (unifacial retouch)	end scraper	nonbifacial	Animikie Silica	0%	heat treated	3 (<1/2"-1/4")	1.8	finished, whole	9/26/2014
87.2	1	XU 14	40-50	Lithic	core	freehand nonbifacial	unpatterned (multi-directional)	unprepared	Tongue River Silica	>0-<50%	heat treated	2 (<1"-1/2")	12		9/26/2014
87.3	1	XU 14	40-50	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.6		9/26/2014
87.4	1	XU 14	40-50	Faunal	mammalian, medium/large	unidentifiable	fragment	calcined				2 (<1"-1/2")	1.8		9/26/2014
87.5-8	4	XU 14	40-50	Faunal	mammalian	unidentifiable	fragment					3 (<1/2"-1/4")	0.9		9/26/2014
87.9-19	11	XU 14	40-50	Faunal	mammalian	unidentifiable	fragment					4 (<1/4")	0.3		9/26/2014
87	1	XU 14	40-50	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	17		9/26/2014
87	1	XU 14	40-50	Lithic	fire-cracked rock	angular			unidentified material			3 (<1/2"-1/4")	3		9/26/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
87	1	XU 14	40-50	Lithic	fire-cracked rock	cobble (non-friable)			granitic			0 (<4"-2")	203		9/26/2014
88.1	1	XU 14	50-60	Lithic	debris	decortication			Swan River Chert	50-<100%	heat treated	2 (<1"-1/2")	4.9		9/26/2014
88.2	1	XU 14	50-60	Lithic	debris	broken flake			Swan River Chert	0%	heat treated	2 (<1"-1/2")	1.6		9/26/2014
88.3	1	XU 14	50-60	Lithic	debris	shatter			rhyolite	0%		3 (<1/2"-1/4")	2.4		9/26/2014
88.4	1	XU 14	50-60	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.2		9/26/2014
88	1	XU 14	50-60	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	6		9/26/2014
89.1	1	XU 15	10-20	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.6		11/18/2014
89.2	1	XU 15	10-20	Lithic	tool	unpatterned flake (unifacial retouch)	retouched flake	decortication	Tongue River Silica	50-<100%		2 (<1"-1/2")	7.5	finished, whole	11/18/2014
89.3	1	XU 15	10-20	Lithic	debris	bipolar flake			quartz	>0-<50%		2 (<1"-1/2")	9.1		11/18/2014
89.4	1	XU 15	10-20	Lithic	debris	bipolar flake			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	1.8		11/18/2014
89.5	1	XU 15	10-20	Lithic	debris	decortication			Swan River Chert	50-<100%		2 (<1"-1/2")	3.6		11/18/2014
89.6	1	XU 15	10-20	Lithic	debris	nonbifacial			Lake Superior Agate	>0-<50%		2 (<1"-1/2")	2.8		11/18/2014
89.7	1	XU 15	10-20	Lithic	debris	broken flake			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	0.7		11/18/2014
89	1	XU 15	10-20	Lithic	fire-cracked rock	angular/spall			quartzite			2 (<1"-1/2")	16		11/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
89	4	XU 15	10-20	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	317		11/18/2014
89	7	XU 15	10-20	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	46		11/18/2014
89	4	XU 15	10-20	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	6		11/18/2014
89	1	XU 15	10-20	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	7		11/18/2014
89	1	XU 15	10-20	Lithic	fire-cracked rock	angular			unidentified material			0 (<4"-2")	239		11/18/2014
89	1	XU 15	10-20	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	82		11/18/2014
89	1	XU 15	10-20	Lithic	fire-cracked rock	angular/spall			unidentified material			1 (<2"-1")	113		11/18/2014
90.1	1	XU 15	20-30	Faunal	mammalian, medium/large	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.8	Beta	11/19/2014
90.2-11	10	XU 15	20-30	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	4.5		11/19/2014
90.12-13	2	XU 15	20-30	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.5		11/19/2014
90.14	1	XU 15	20-30	Lithic	core	freehand nonbifacial	unpatterned (multi-directional)	unprepared	basaltic	50-<100%		1 (<2"-1")	37.5		11/19/2014
90.15-16	2	XU 15	20-30	Lithic	debris	nonbifacial			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	4.9		11/19/2014
90.17	1	XU 15	20-30	Lithic	debris	nonbifacial			quartz	>0-<50%		3 (<1/2"-1/4")	0.7		11/19/2014
90.18	1	XU 15	20-30	Lithic	debris	bifacial thinning			quartz	0%		3 (<1/2"-1/4")	2.2		11/19/2014
90.19	1	XU 15	20-30	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.4		11/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
90.2	1	XU 15	20-30	Lithic	debris	broken flake			Gunflint Silica	0%		3 (<1/2"-1/4")	0.5		11/19/2014
90.21-25	5	XU 15	20-30	Lithic	debris	broken flake			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	3.8		11/19/2014
90.26	1	XU 15	20-30	Lithic	debris	broken flake			Swan River Chert	0%		3 (<1/2"-1/4")	1.2		11/19/2014
90.27	1	XU 15	20-30	Lithic	debris	broken flake			Swan River Chert	0%	probably heat treated	3 (<1/2"-1/4")	0.9		11/19/2014
90.28	1	XU 15	20-30	Lithic	debris	shatter			quartz	0%		3 (<1/2"-1/4")	0.6		11/19/2014
90	1	XU 15	20-30	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	91		11/19/2014
90	1	XU 15	20-30	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	9		11/19/2014
90	3	XU 15	20-30	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	24		11/19/2014
90	3	XU 15	20-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	54		11/19/2014
90	5	XU 15	20-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	35		11/19/2014
90	1	XU 15	20-30	Lithic	fire-cracked rock	spall			unidentified material			1 (<2"-1")	24		11/19/2014
90	2	XU 15	20-30	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	24		11/19/2014
90	4	XU 15	20-30	Lithic	fire-cracked rock	spall			unidentified material			3 (<1/2"-1/4")	5		11/19/2014
90	1	XU 15	20-30	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	10		11/19/2014
90	1	XU 15	20-30	Lithic	fire-cracked rock	spall			basaltic			1 (<2"-1")	71		11/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
90	1	XU 15	20-30	Lithic	fire-cracked rock	spall			basaltic			3 (<1/2"-1/4")	4		11/19/2014
90	1	XU 15	20-30	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	9		11/19/2014
90	2	XU 15	20-30	Lithic	fire-cracked rock	angular/spall			quartzite			1 (<2"-1")	53		11/19/2014
90	1	XU 15	20-30	Lithic	fire-cracked rock	angular/spall			quartzite			2 (<1"-1/2")	7		11/19/2014
90	1	XU 15	20-30	Lithic	fire-cracked rock	cobble with spall			quartzite			0 (<4"-2")	531		11/19/2014
90	1	XU 15	20-30	Lithic	fire-cracked rock	cobble with angular			quartzite			1 (<2"-1")	114		11/19/2014
90	1	XU 15	20-30	Lithic	fire-cracked rock	cobble (non-friable)			granitic			0 (<4"-2")	568		11/19/2014
90	1	XU 15	20-30	Lithic	fire-cracked rock	crumb			granitic			3 (<1/2"-1/4")	1		11/19/2014
90	13	XU 15	20-30	Lithic	fire-cracked rock	crumb			granitic			4 (<1/4")	2		11/19/2014
91.1-11	11	XU 15	30-40	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	5.4		11/19/2014
91.12	1	XU 15	30-40	Lithic	debris	bipolar flake			quartz	50-<100%		2 (<1"-1/2")	4.6		11/19/2014
91.13	1	XU 15	30-40	Lithic	debris	bipolar flake			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	2.2		11/19/2014
91.14	1	XU 15	30-40	Lithic	debris	decortication			rhyolite	50-<100%		2 (<1"-1/2")	2.7		11/19/2014
91.15	1	XU 15	30-40	Lithic	debris	bifacial thinning			Swan River Chert	0%	heat treated	2 (<1"-1/2")	2.2		11/19/2014
91.16	1	XU 15	30-40	Lithic	debris	bifacial thinning			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	0.4		11/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
91.17	1	XU 15	30-40	Lithic	debris	bifacial thinning			unidentified material	0%		3 (<1/2"-1/4")	0.4		11/19/2014
91.18	1	XU 15	30-40	Lithic	debris	broken flake			basaltic	50-<100%		3 (<1/2"-1/4")	0.4		11/19/2014
91.19	1	XU 15	30-40	Lithic	debris	broken flake			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	0.3		11/19/2014
91.2	1	XU 15	30-40	Lithic	debris	broken flake			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	0.5		11/19/2014
91.21	1	XU 15	30-40	Lithic	debris	edge preparation			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	0.3		11/19/2014
91	1	XU 15	30-40	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	43		11/19/2014
91	3	XU 15	30-40	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	24		11/19/2014
91	1	XU 15	30-40	Lithic	fire-cracked rock	angular			igneous			1 (<2"-1")	26		11/19/2014
91	1	XU 15	30-40	Lithic	fire-cracked rock	angular			unidentified material			3 (<1/2"-1/4")	2		11/19/2014
91	1	XU 15	30-40	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	13		11/19/2014
91	1	XU 15	30-40	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	9		11/19/2014
91	1	XU 15	30-40	Lithic	fire-cracked rock	angular/spall			granitic			3 (<1/2"-1/4")	2		11/19/2014
91	1	XU 15	30-40	Lithic	fire-cracked rock	angular/spall			quartzite			1 (<2"-1")	70		11/19/2014
91	1	XU 15	30-40	Lithic	fire-cracked rock	cobble (non-friable)			granitic			1 (<2"-1")	114		11/19/2014
92.1	1	XU 15	40-50	Lithic	debris	nonbifacial			quartz	>0-<50%		2 (<1"-1/2")	2.2		11/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
92.2	1	XU 15	40-50	Lithic	debris	nonbifacial			quartz	>0-<50%		3 (<1/2"-1/4")	0.9		11/19/2014
92.3	1	XU 15	40-50	Lithic	debris	bifacial thinning			Swan River Chert	0%		3 (<1/2"-1/4")	0.7		11/19/2014
92.4	1	XU 15	40-50	Lithic	debris	broken flake			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	0.7		11/19/2014
92.5-6	2	XU 15	40-50	Faunal	mammalian, medium/large	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	3.2		11/19/2014
92.7-15	9	XU 15	40-50	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	3.2		11/19/2014
92.16-18	3	XU 15	40-50	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.3		11/19/2014
92.19	1	XU 15	40-50	Botanical	wood charcoal	charcoal						3 (<1/2"-1/4")	0.1		11/19/2014
92	1	XU 15	40-50	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	2		11/19/2014
92	1	XU 15	40-50	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	3		11/19/2014
92	1	XU 15	40-50	Lithic	fire-cracked rock	spall			basaltic			3 (<1/2"-1/4")	2		11/19/2014
92.2	1	XU 15	40-50	Lithic	tool	patterned bifacial	unfinished biface, stage 4		Knife Lake Siltstone	0%		2 (<1"-1/2")	4.6	broken/ worn out, distal	11/19/2014
93.1-2	2	XU 15	50-60	Lithic	debris	shatter			Swan River Chert	0%	probably heat treated	3 (<1/2"-1/4")	3.3		11/19/2014
93.3	1	XU 15	50-60	Lithic	debris	shatter			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	1.5		11/19/2014
93.4	1	XU 15	50-60	Lithic	debris	decortication			Lake Superior Agate	100%		3 (<1/2"-1/4")	0.8		11/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
93.5	1	XU 15	50-60	Lithic	debris	decortication			Swan River Chert	100%	heat treated	2 (<1"-1/2")	3.5		11/19/2014
93.6	1	XU 15	50-60	Lithic	debris	bipolar flake			Gunflint Silica	50-<100%		3 (<1/2"-1/4")	3.8		11/19/2014
93.7	1	XU 15	50-60	Lithic	debris	other G4 flake			Lake Superior Agate	0%		4 (<1/4")	0.2		11/19/2014
93.8	1	XU 15	50-60	Lithic	debris	bifacial shaping			Swan River Chert	0%	heat treated	4 (<1/4")	0.1		11/19/2014
93.9	1	XU 15	50-60	Lithic	debris	bifacial thinning			quartz	0%		3 (<1/2"-1/4")	0.3		11/19/2014
93.1	1	XU 15	50-60	Lithic	debris	broken flake			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	0.2		11/19/2014
93.11-20	10	XU 15	50-60	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	3		11/19/2014
93	1	XU 15	50-60	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	17		11/19/2014
93	2	XU 15	50-60	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	33		11/19/2014
93	1	XU 15	50-60	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	9		11/19/2014
93	1	XU 15	50-60	Lithic	fire-cracked rock	angular/spall			basaltic			1 (<2"-1")	57		11/19/2014
93	1	XU 15	50-60	Lithic	fire-cracked rock	cobble with spall			quartzite			1 (<2"-1")	117		11/19/2014
93.21	1	XU 15	50-60	Lithic	tool	patterned flake (bifacial retouch)	projectile point	unidentified	Swan River Chert	0%		2 (<1"-1/2")	3.7	broken/ worn out, distal	11/19/2014
94.7-11	5	XU 15	60-70	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	1.4		11/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
94	1	XU 15	60-70	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	7		11/19/2014
94	1	XU 15	60-70	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	66		11/19/2014
94	1	XU 15	60-70	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	29		11/19/2014
94.1	1	XU 15	60-70	Lithic	core	freehand nonbifacial	unpatterned (multi-directional)	unprepared	Tongue River Silica	>0-<50%		2 (<1"-1/2")	24.9		11/19/2014
94.2	1	XU 15	60-70	Lithic	debris	other G4 flake			Swan River Chert	0%	heat treated	4 (<1/4")	0.2		11/19/2014
94.3	1	XU 15	60-70	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.6		11/19/2014
94.4-6	3	XU 15	60-70	Faunal	mammalian, large	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	2.3	Beta	11/19/2014
95.1	1	XU 15	70-80	Lithic	debris	bifacial thinning			Swan River Chert	0%	heat treated	2 (<1"-1/2")	2.3		11/20/2014
95.2	1	XU 15	70-80	Lithic	debris	broken flake			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	0.9		11/20/2014
95.3	1	XU 15	70-80	Lithic	debris	broken flake			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	0.3		11/20/2014
95.4	1	XU 15	70-80	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	1		11/20/2014
95.5	1	XU 15	70-80	Lithic	debris	shatter			quartz	0%		3 (<1/2"-1/4")	1.8		11/20/2014
95.6-9	4	XU 15	70-80	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	1.6		11/20/2014
95	1	XU 15	70-80	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	14		11/20/2014
96.1	1	XU 15	80-90	Lithic	debris	shatter			quartz	50-<100%		3 (<1/2"-1/4")	0.7		11/21/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
96.2-3	2	XU 15	80-90	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.3		11/21/2014
97.1	1	XU 16	10-20	Lithic	debris	bipolar flake			quartz	100%		2 (<1"-1/2")	3.3		11/19/2014
97.2-4	3	XU 16	10-20	Lithic	debris	bipolar flake			quartz	0%		3 (<1/2"-1/4")	3.8		11/19/2014
97.5	1	XU 16	10-20	Lithic	core	bipolar (not rotated)			rhyolite	>0-<50%		2 (<1"-1/2")	3.4		11/19/2014
97.6	1	XU 16	10-20	Lithic	debris	bipolar flake			Lake Superior Agate	>0-<50%	burned	3 (<1/2"-1/4")	2.2		11/19/2014
97.7-8	2	XU 16	10-20	Lithic	debris	broken flake			unidentified material	0%		3 (<1/2"-1/4")	1.5		11/19/2014
97.9	1	XU 16	10-20	Lithic	debris	shatter			quartz	>0-<50%		3 (<1/2"-1/4")	1.2		11/19/2014
97.10-11	2	XU 16	10-20	Ceramic	body	grit temper	cord marked					2 (<1"-1/2")	14.9	6.3 & 6.7 mm	11/19/2014
97.12	1	XU 16	10-20	Ceramic	body	grit temper	smooth		interior absent			3 (<1/2"-1/4")	0.3		11/19/2014
97	2	XU 16	10-20	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	124		11/19/2014
97	1	XU 16	10-20	Lithic	fire-cracked rock	angular/spall			unidentified material			1 (<2"-1")	82		11/19/2014
97	5	XU 16	10-20	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	56		11/19/2014
97	3	XU 16	10-20	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	30		11/19/2014
97	1	XU 16	10-20	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	16		11/19/2014
97	1	XU 16	10-20	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	114		11/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
98.1	1	XU 16	20-30	Lithic	debris	decortication			chalcedony	100%		2 (<1"-1/2")	9.3		11/19/2014
98	1	XU 16	20-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	98		11/19/2014
98	1	XU 16	20-30	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	54		11/19/2014
98	2	XU 16	20-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	22		11/19/2014
98	1	XU 16	20-30	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	18		11/19/2014
98.2	1	XU 16	20-30	Ceramic	rim	grit temper	smooth	incised			Ogechie	2 (<1"-1/2")	7.6	oval tool impressed on rim, faint vertical incision lines; refits with 100.16; 6.3mm	11/19/2014
99.1	1	XU 17	0-10	Lithic	core	freehand nonbifacial	unpatterned (multi-directional)	unprepared	chalcedony	>0-<50%		2 (<1"-1/2")	18.9		11/19/2014
99.2	1	XU 17	0-10	Lithic	debris	nonbifacial			chalcedony	>0-<50%		2 (<1"-1/2")	3.3		11/19/2014
99.3	1	XU 17	0-10	Lithic	debris	bipolar flake			quartz	>0-<50%		3 (<1/2"-1/4")	0.6		11/19/2014
99.4	1	XU 17	0-10	Lithic	debris	nonbifacial			unidentified material	>0-<50%		3 (<1/2"-1/4")	1.3		11/19/2014
99	1	XU 17	0-10	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	73		11/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
99	2	XU 17	0-10	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	44		11/19/2014
99	1	XU 17	0-10	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	36		11/19/2014
99	1	XU 17	0-10	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	10		11/19/2014
99	1	XU 17	0-10	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	6		11/19/2014
99	1	XU 17	0-10	Lithic	fire-cracked rock	cobble (friable)			granitic			1 (<2"-1")	95		11/19/2014
100.1	1	XU 17	10-20	Lithic	debris	decortication			chalcedony	100%		2 (<1"-1/2")	6.9		11/19/2014
100.2	1	XU 17	10-20	Lithic	debris	other G4 flake			Lake Superior Agate	0%		4 (<1/4")	0.1		11/19/2014
100.3-7	5	XU 17	10-20	Ceramic	body	grit temper	cord marked					2 (<1"-1/2")	19.3	5.1,6.3,5.9,5.9,5.8 mm	11/19/2014
100.8	1	XU 17	10-20	Ceramic	body	grit temper	cord marked					3 (<1/2"-1/4")	0.8	5.1 mm	11/19/2014
100.9	1	XU 17	10-20	Ceramic	body	grit temper	smooth			residue present		2 (<1"-1/2")	1.9	5.3 mm	11/19/2014
100.10-12	3	XU 17	10-20	Ceramic	body	grit temper	smooth					2 (<1"-1/2")	9.1	4.5,5.4,5.5 mm	11/19/2014
100.13-14	2	XU 17	10-20	Ceramic	body	grit temper	smooth					3 (<1/2"-1/4")	1.6	6.3 & 5.5 mm	11/19/2014
100.15	1	XU 17	10-20	Botanical	wood charcoal	charcoal						3 (<1/2"-1/4")	1.1		11/19/2014
100	2	XU 17	10-20	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	2		11/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
100	1	XU 17	10-20	Lithic	fire-cracked rock	angular			granitic			0 (<4"-2")	249		11/19/2014
100	1	XU 17	10-20	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	71		11/19/2014
100	1	XU 17	10-20	Lithic	fire-cracked rock	angular			basaltic			0 (<4"-2")	371		11/19/2014
100	1	XU 17	10-20	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	84		11/19/2014
100	1	XU 17	10-20	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	39		11/19/2014
100	1	XU 17	10-20	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	3		11/19/2014
100	1	XU 17	10-20	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	12		11/19/2014
100	2	XU 17	10-20	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	12		11/19/2014
100	2	XU 17	10-20	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	13		11/19/2014
100	1	XU 17	10-20	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	57		11/19/2014
100	1	XU 17	10-20	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	18		11/19/2014
100	1	XU 17	10-20	Lithic	fire-cracked rock	cobble (non-friable)			granitic			0 (<4"-2")	1462		11/19/2014
100	1	XU 17	10-20	Lithic	fire-cracked rock	cobble with spall			unidentified material			0 (<4"-2")	314		11/19/2014
100	1	XU 17	10-20	Lithic	fire-cracked rock	cobble with spall			granitic			1 (<2"-1")	202		11/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
100.16	1	XU 17	10-20	Ceramic	rim & neck	grit temper	smooth	incised			Ogechie	1 (<2"-1")	32.7	oval tool impressed on top of rim, faint vertical incision lines, trailed line at neck, pinched lip; refits with 98.2; 6.1 mm	11/19/2014
101.1	1	XU 17	20-30	Ceramic	body	grit temper	smooth	trailed				2 (<1"-1/2")	2.4	6.0 mm	11/19/2014
101	1	XU 17	20-30	Lithic	fire-cracked rock	angular			basaltic			0 (<4"-2")	183		11/19/2014
101	2	XU 17	20-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	148		11/19/2014
101	1	XU 17	20-30	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	43		11/19/2014
101	2	XU 17	20-30	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	16		11/19/2014
101	1	XU 17	20-30	Lithic	fire-cracked rock	angular/spall			basaltic			2 (<1"-1/2")	21		11/19/2014
101	1	XU 17	20-30	Lithic	fire-cracked rock	cobble with spall			granitic			00 (>4")	1526		11/19/2014
101	1	XU 17	20-30	Lithic	fire-cracked rock	crumb			granitic			3 (<1/2"-1/4")	1		11/19/2014
101	3	XU 17	20-30	Lithic	fire-cracked rock	crumb			granitic			4 (<1/4")	1		11/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
102.1	1	XU 17	30-40	Lithic	core	freehand nonbifacial	unpatterned (multi-directional)	unprepared	quartz	0%		1 (<2"-1")	41.3		11/22/2014
102.2	1	XU 17	30-40	Lithic	debris	nonbifacial			quartz	0%		3 (<1/2"-1/4")	1.3		11/22/2014
102	1	XU 17	30-40	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	52		11/22/2014
102	1	XU 17	30-40	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	22		11/22/2014
102	1	XU 17	30-40	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	15		11/22/2014
102	1	XU 17	30-40	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	9		11/22/2014
102	1	XU 17	30-40	Lithic	fire-cracked rock	crumb			granitic			4 (<1/4")	1		11/22/2014
103.39	1	XU 18W	0-20	Ceramic	neck	grit temper	cord marked	trailed				1 (<2"-1")	7.9	5.9 mm	11/21/2014
103.40-42	3	XU 18W	0-20	Ceramic	body	grit temper	cord marked	trailed				2 (<1"-1/2")	10.7	6.4, 5.6, 5.4 mm	11/21/2014
103.1	1	XU 18W	0-20	Lithic	debris	decortication			chalcedony	100%		1 (<2"-1")	50.1		11/21/2014
103.2	1	XU 18W	0-20	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	1.5		11/21/2014
103.3	1	XU 18W	0-20	Ceramic	rim	grit temper	smooth	incised				2 (<1"-1/2")	7.7	faint vertical incised lines; lip missing; lip 5.5 mm, below lip 6.3 mm	11/21/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
103.4-12	9	XU 18W	0-20	Ceramic	body	grit temper	smooth					2 (<1"-1/2")	30.8	6.5,7.1,6.7,6.8,8.3,7.9,6.2,6.3,7.6 mm	11/21/2014
103.13-15	3	XU 18W	0-20	Ceramic	body	grit temper	smooth					3 (<1/2"-1/4")	1.7	7.4,6.2,5.3 mm	11/21/2014
103.16-28	13	XU 18W	0-20	Ceramic	body	grit temper	cord marked					2 (<1"-1/2")	40.4	7.9,6.2,7.0,5.2,7.5,7.2,7.2,6.2,6.2,5.7,6.1,5.7, 5.7 mm	11/21/2014
103.29-33	5	XU 18W	0-20	Ceramic	body	grit temper	cord marked					3 (<1/2"-1/4")	7.4	4.4,5.6,5.4,6.2,5.5 mm	11/21/2014
103.34-35	2	XU 18W	0-20	Ceramic	body	grit temper	cord marked		interior absent			3 (<1/2"-1/4")	1.3		11/21/2014
103.36-37	2	XU 18W	0-20	Ceramic	body	grit temper	undetermined		exterior absent			3 (<1/2"-1/4")	1.9		11/21/2014
103.38	1	XU 18W	0-20	Botanical	wood charcoal	charcoal						3 (<1/2"-1/4")	0.3		11/21/2014
103	4	XU 18W	0-20	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	41		11/21/2014
103	1	XU 18W	0-20	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	3		11/21/2014
103	1	XU 18W	0-20	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	22		11/21/2014
103	1	XU 18W	0-20	Lithic	fire-cracked rock	angular			quartzite			0 (<4"-2")	138		11/21/2014
103	1	XU 18W	0-20	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	21		11/21/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
103	1	XU 18W	0-20	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	27		11/21/2014
103	3	XU 18W	0-20	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	12		11/21/2014
103	1	XU 18W	0-20	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	1		11/21/2014
103	2	XU 18W	0-20	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	9		11/21/2014
103	1	XU 18W	0-20	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	5		11/21/2014
103.43-49	7	XU 18W	0-20	Ceramic	body	grit temper	cord marked			residue present		2 (<1"-1/2")	17.7	Beta; 6.4,5.8,5.2,6.6,6.2,6.7,5.2 mm	11/21/2014
104.1	1	XU 18W	20-30	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.2		11/20/2014
104.2	1	XU 18W	20-30	Lithic	debris	broken flake			quartz	0%		2 (<1"-1/2")	1.3		11/20/2014
104.3-4	2	XU 18W	20-30	Ceramic	body	grit temper	undetermined		exterior absent			3 (<1/2"-1/4")	1.8		11/20/2014
104.5-14	10	XU 18W	20-30	Ceramic	body	grit temper	cord marked					2 (<1"-1/2")	27.3	6.4,5.8,7.0,7.4,6.7,5.6,5.1,7.0,5.5,6.0 mm	11/20/2014
104.15-19	5	XU 18W	20-30	Ceramic	body	grit temper	cord marked					3 (<1/2"-1/4")	6.2	5.0,6.5,6.7,5.1,6.6 mm	11/20/2014
104	1	XU 18W	20-30	Lithic	fire-cracked rock	spall			basaltic			1 (<2"-1")	16		11/20/2014
104	2	XU 18W	20-30	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	7		11/20/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
104	2	XU 18W	20-30	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	92		11/20/2014
104	1	XU 18W	20-30	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	7		11/20/2014
104	2	XU 18W	20-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	25		11/20/2014
104	3	XU 18W	20-30	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	4		11/20/2014
104	1	XU 18W	20-30	Lithic	fire-cracked rock	spall			granitic			0 (<4"-2")	100		11/20/2014
104	1	XU 18W	20-30	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	11		11/20/2014
104	1	XU 18W	20-30	Lithic	fire-cracked rock	spall			basaltic			3 (<1/2"-1/4")	1		11/20/2014
104	2	XU 18W	20-30	Lithic	fire-cracked rock	split cobble			quartzite			0 (<4"-2")	593		11/20/2014
105.1	1	XU 18W	30-40	Lithic	debris	decortication			quartz	100%		2 (<1"-1/2")	3		11/20/2014
106.1	1	XU 18N	10-20	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.7		11/19/2014
106	2	XU 18N	10-20	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	75		11/19/2014
106	1	XU 18N	10-20	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	17		11/19/2014
106	1	XU 18N	10-20	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	8		11/19/2014
106	1	XU 18N	10-20	Lithic	fire-cracked rock	spall			unidentified material			3 (<1/2"-1/4")	1		11/19/2014
106	1	XU 18N	10-20	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	1		11/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
107.1	1	XU 7N	0-10	Lithic	debris	nonbifacial			Jasper Taconite	>0-<50%		3 (<1/2"-1/4")	0.7		9/18/2014
107.2	1	XU 7N	0-10	Ceramic	body	grit temper	smooth	trailed		residue present		2 (<1"-1/2")	3.9		9/18/2014
107	1	XU 7N	0-10	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	34		9/18/2014
107	1	XU 7N	0-10	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	12		9/18/2014
108.1	1	XU 19	10-20	Lithic	debris	bipolar flake			Lake Superior Agate	50-<100%		2 (<1"-1/2")	6		11/19/2014
108.2	1	XU 19	10-20	Lithic	debris	bipolar flake			quartz	0%		2 (<1"-1/2")	4.1		11/19/2014
108.3	1	XU 19	10-20	Lithic	debris	nonbifacial			Swan River Chert	0%	heat treated	2 (<1"-1/2")	4.6		11/19/2014
108.4	1	XU 19	10-20	Lithic	tool	unpatterned flake	utilized flake	bipolar	Tongue River Silica	50-<100%	heat treated	3 (<1/2"-1/4")	0.8	finished, whole	11/19/2014
108.5	1	XU 19	10-20	Lithic	debris	broken flake			basaltic	0%		2 (<1"-1/2")	1.2		11/19/2014
108.6	1	XU 19	10-20	Lithic	debris	broken flake			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	0.7		11/19/2014
108	1	XU 19	10-20	Lithic	fire-cracked rock	angular			igneous			4 (<1/4")	1		11/19/2014
108	1	XU 19	10-20	Lithic	fire-cracked rock	angular			igneous			2 (<1"-1/2")	9		11/19/2014
108	1	XU 19	10-20	Lithic	fire-cracked rock	cobble (non-friable)			granitic			0 (<4"-2")	291		11/19/2014
108	1	XU 19	10-20	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	37		11/19/2014
108	2	XU 19	10-20	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	22		11/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
108	1	XU 19	10-20	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	56		11/19/2014
109.1	1	XU 19	20-30	Lithic	debris	nonbifacial			quartzite	>0-<50%		2 (<1"-1/2")	17.2		11/19/2014
109.2	1	XU 19	20-30	Lithic	core	bipolar (rotated)			Swan River Chert	>0-<50%	heat treated	2 (<1"-1/2")	11.9		11/19/2014
109.3	1	XU 19	20-30	Lithic	core	bipolar (rotated)			Swan River Chert	0%	heat treated	2 (<1"-1/2")	7.6		11/19/2014
109.4-6	3	XU 19	20-30	Lithic	debris	decortication			quartzite	100%		3 (<1/2"-1/4")	4.4		11/19/2014
109.7	1	XU 19	20-30	Lithic	core	bipolar (not rotated)			Tongue River Silica	>0-<50%	heat treated	2 (<1"-1/2")	8		11/19/2014
109.8	1	XU 19	20-30	Lithic	debris	nonbifacial			quartz	0%		2 (<1"-1/2")	1.6		11/19/2014
109.9	1	XU 19	20-30	Lithic	debris	nonbifacial			Tongue River Silica	0%	heat treated	1 (<2"-1")	10.5		11/19/2014
109.1	1	XU 19	20-30	Lithic	debris	bifacial shaping			Knife River Flint	0%		3 (<1/2"-1/4")	0.3		11/19/2014
109.11-13	3	XU 19	20-30	Lithic	debris	broken flake			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	0.9		11/19/2014
109.14	1	XU 19	20-30	Lithic	debris	broken flake			Knife Lake Siltstone	0%		3 (<1/2"-1/4")	0.6		11/19/2014
109.15	1	XU 19	20-30	Lithic	debris	bifacial thinning			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	1.3		11/19/2014
109.16	1	XU 19	20-30	Lithic	debris	shatter			unidentified material	>0-<50%		3 (<1/2"-1/4")	1.1		11/19/2014
109.17-18	2	XU 19	20-30	Lithic	debris	bipolar flake			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	2.9		11/19/2014
109.19-28	10	XU 19	20-30	Faunal	mammalian	unidentifiable	fragment	calcined				2 (<1"-1/2")	5.4		11/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
109	1	XU 19	20-30	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	8		11/19/2014
109	3	XU 19	20-30	Lithic	fire-cracked rock	spall			unidentified material			3 (<1/2"-1/4")	8		11/19/2014
109	1	XU 19	20-30	Lithic	fire-cracked rock	angular			quartzite			3 (<1/2"-1/4")	3		11/19/2014
109	2	XU 19	20-30	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	1		11/19/2014
109	1	XU 19	20-30	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	1		11/19/2014
109	8	XU 19	20-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	545		11/19/2014
109	2	XU 19	20-30	Lithic	fire-cracked rock	angular			granitic			0 (<4"-2")	514		11/19/2014
109	4	XU 19	20-30	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	162		11/19/2014
109	2	XU 19	20-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	32		11/19/2014
109	3	XU 19	20-30	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	167		11/19/2014
109	1	XU 19	20-30	Lithic	fire-cracked rock	spall			basaltic			1 (<2"-1")	46		11/19/2014
109	5	XU 19	20-30	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	383		11/19/2014
109	4	XU 19	20-30	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	126		11/19/2014
109	4	XU 19	20-30	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	202		11/19/2014
109	6	XU 19	20-30	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	90		11/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
109	2	XU 19	20-30	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	27		11/19/2014
109	1	XU 19	20-30	Lithic	fire-cracked rock	angular			unidentified material			3 (<1/2"-1/4")	2		11/19/2014
109	2	XU 19	20-30	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	21		11/19/2014
109	1	XU 19	20-30	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	8		11/19/2014
109	1	XU 19	20-30	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	7		11/19/2014
109.29	1	XU 19	20-30	Lithic	tool	patterned bifacial	projectile point		Tongue River Silica	0%	heat treated	2 (<1"-1/2")	4.1		11/19/2014
110.14	1	XU 19	30-40	Lithic	tool	patterned bifacial	unfinished biface, stage 3		Knife Lake Siltstone	0%		2 (<1"-1/2")	9.4	broken/ worn out; distal	11/19/2014
110.15	1	XU 19	30-40	Lithic	debris	bipolar flake			unidentified material	50-<100%		2 (<1"-1/2")	23.7		11/19/2014
110.16-21	6	XU 19	30-40	Lithic	debris	broken flake			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	3.6		11/19/2014
110.22-23	2	XU 19	30-40	Lithic	debris	other G4 flake			Swan River Chert	0%	heat treated	4 (<1/4")	0.4		11/19/2014
110.24	1	XU 19	30-40	Lithic	debris	nonbifacial			Swan River Chert	0%	heat treated	2 (<1"-1/2")	2.2		11/19/2014
110.25	1	XU 19	30-40	Lithic	debris	shatter			quartz	>0-<50%		2 (<1"-1/2")	2.8		11/19/2014
110.26	1	XU 19	30-40	Lithic	core	bipolar (rotated)			quartz	>0-<50%		1 (<2"-1")	56.9		11/19/2014
110.27	1	XU 19	30-40	Faunal	mammalian, large	unidentifiable	fragment	calcined				2 (<1"-1/2")	2.1		11/19/2014
110.28	1	XU 19	30-40	Faunal	mammalian, large	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.9		11/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
110.29-55	27	XU 19	30-40	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	9.8		11/19/2014
110.56-59	4	XU 19	30-40	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.3		11/19/2014
110	12	XU 19	30-40	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	851		11/19/2014
110	11	XU 19	30-40	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	97		11/19/2014
110	1	XU 19	30-40	Lithic	fire-cracked rock	angular			granitic			0 (<4"-2")	237		11/19/2014
110	4	XU 19	30-40	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	8		11/19/2014
110	1	XU 19	30-40	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	144		11/19/2014
110	1	XU 19	30-40	Lithic	fire-cracked rock	angular/spall			basaltic			2 (<1"-1/2")	2		11/19/2014
110	1	XU 19	30-40	Lithic	fire-cracked rock	angular/spall			basaltic			1 (<2"-1")	75		11/19/2014
110	1	XU 19	30-40	Lithic	fire-cracked rock	angular/spall			unidentified material			1 (<2"-1")	17		11/19/2014
110	3	XU 19	30-40	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	13		11/19/2014
110	1	XU 19	30-40	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	14		11/19/2014
110	1	XU 19	30-40	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	4		11/19/2014
110	1	XU 19	30-40	Lithic	fire-cracked rock	spall			basaltic			3 (<1/2"-1/4")	2		11/19/2014
110	2	XU 19	30-40	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	8		11/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
110.1	1	XU 19	30-40	Lithic	debris	nonbifacial			Swan River Chert	0%	heat treated	2 (<1"-1/2")	10.8		11/19/2014
110.2	1	XU 19	30-40	Lithic	debris	nonbifacial			Gunflint Silica	0%		3 (<1/2"-1/4")	0.5		11/19/2014
110.3	1	XU 19	30-40	Lithic	debris	bipolar flake			quartz	0%		2 (<1"-1/2")	5.4		11/19/2014
110.4	1	XU 19	30-40	Lithic	tool	patterned flake	side and end scraper	broken	Knife River Flint	0%		3 (<1/2"-1/4")	0.5	broken/ worn out	11/19/2014
110.5	1	XU 19	30-40	Lithic	debris	broken flake			Prairie du Chien Chert (oolitic)	0%	heat treated	3 (<1/2"-1/4")	0.1		11/19/2014
110.6	1	XU 19	30-40	Lithic	debris	nonbifacial			quartz	100%		4 (<1/4")	0.1		11/19/2014
110.7-8	2	XU 19	30-40	Lithic	tool	unpatterned flake	utilized flake	nonbifacial	Tongue River Silica	0%	heat treated	2 (<1"-1/2")	11.5	finished, whole; intentional backing	11/19/2014
110.9	1	XU 19	30-40	Lithic	core	bipolar (rotated)			Tongue River Silica	0%		2 (<1"-1/2")	5.6		11/19/2014
110.1	1	XU 19	30-40	Lithic	debris	bifacial thinning			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	0.3		11/19/2014
110.11	1	XU 19	30-40	Lithic	debris	bifacial shaping			Swan River Chert	0%	heat treated	4 (<1/4")	0.1		11/19/2014
110.12	1	XU 19	30-40	Lithic	tool	unpatterned flake	utilized flake	broken	Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	0.4	brokem/ worn out; distal	11/19/2014
110.13	1	XU 19	30-40	Lithic	debris	bifacial thinning			Prairie du Chien Chert (oolitic)	0%	heat treated	3 (<1/2"-1/4")	0.5		11/19/2014
110.6	1	XU 19	30-40	Lithic	tool	patterned bifacial	projectile point		Swan River Chert	0%		3 (<1/2"-1/4")	0.9	broken/ worn out, distal	11/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
111.1	1	XU 19	40-50	Lithic	core	tested cobble			Lake Superior Agate	50-<100%		2 (<1"-1/2")	21.9		11/19/2014
111.2	1	XU 19	40-50	Lithic	debris	shatter			Swan River Chert	>0-<50%	heat treated	2 (<1"-1/2")	4.1		11/19/2014
111.3-4	2	XU 19	40-50	Lithic	debris	broken flake			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	1.6		11/19/2014
111.5	1	XU 19	40-50	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	1.1		11/19/2014
111.6	1	XU 19	40-50	Lithic	debris	bipolar flake			Swan River Chert	>0-<50%	heat treated	2 (<1"-1/2")	10.6		11/19/2014
111.7	1	XU 19	40-50	Lithic	debris	bipolar flake			Swan River Chert	100%	heat treated	3 (<1/2"-1/4")	1.7		11/19/2014
111.8	1	XU 19	40-50	Lithic	debris	bipolar flake			quartz	50-<100%		3 (<1/2"-1/4")	2		11/19/2014
111.9	1	XU 19	40-50	Lithic	debris	nonbifacial			Tongue River Silica	>0-<50%		2 (<1"-1/2")	11.6		11/19/2014
111.1	1	XU 19	40-50	Lithic	debris	bipolar flake			quartz	100%		2 (<1"-1/2")	20.9		11/19/2014
111.11	1	XU 19	40-50	Lithic	debris	bifacial shaping			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	0.5		11/19/2014
111.12	1	XU 19	40-50	Lithic	debris	broken flake			Animikie Silica	0%		3 (<1/2"-1/4")	0.6		11/19/2014
111.13	1	XU 19	40-50	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.1		11/19/2014
111.14	1	XU 19	40-50	Lithic	debris	decortication			Gunflint Silica	100%		3 (<1/2"-1/4")	0.6		11/19/2014
111.15	1	XU 19	40-50	Lithic	debris	broken flake			quartzite	50-<100%		3 (<1/2"-1/4")	0.3		11/19/2014
111.16	1	XU 19	40-50	Lithic	debris	broken flake			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	0.3		11/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
111.17-18	2	XU 19	40-50	Lithic	debris	nonbifacial			Swan River Chert	0%	heat treated	2 (<1"-1/2")	6.4		11/19/2014
111.19	1	XU 19	40-50	Lithic	debris	nonbifacial			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	1.2		11/19/2014
111.2	1	XU 19	40-50	Lithic	debris	broken flake			Knife Lake Siltstone	0%		3 (<1/2"-1/4")	1		11/19/2014
111.21	1	XU 19	40-50	Faunal	mammalian, large	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	1.6		11/19/2014
111.22-34	13	XU 19	40-50	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	6		11/19/2014
111.35-48	14	XU 19	40-50	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	1.1		11/19/2014
111	1	XU 19	40-50	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	100		11/19/2014
111	1	XU 19	40-50	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	60		11/19/2014
111	1	XU 19	40-50	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	40		11/19/2014
111	1	XU 19	40-50	Lithic	fire-cracked rock	angular/spall			quartzite			2 (<1"-1/2")	16		11/19/2014
111	1	XU 19	40-50	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	11		11/19/2014
111	1	XU 19	40-50	Lithic	fire-cracked rock	angular			metamorphic			2 (<1"-1/2")	7		11/19/2014
111	1	XU 19	40-50	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	1		11/19/2014
112.1	1	XU 19	50-60	Lithic	debris	bipolar flake			Knife Lake Siltstone	50-<100%		2 (<1"-1/2")	27.6		11/19/2014
112.2	1	XU 19	50-60	Lithic	core	bipolar (rotated)			Tongue River Silica	0%		2 (<1"-1/2")	7		11/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
112.3	1	XU 19	50-60	Lithic	core	bipolar (rotated)			Tongue River Silica	>0-<50%		2 (<1"-1/2")	8.7		11/19/2014
112.4-6	3	XU 19	50-60	Lithic	debris	broken flake			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	2.8		11/19/2014
112.7	1	XU 19	50-60	Lithic	debris	broken flake			basaltic	0%		3 (<1/2"-1/4")	1.4		11/19/2014
112.8	1	XU 19	50-60	Lithic	debris	other G4 flake			Tongue River Silica	0%	heat treated	4 (<1/4")	0.1		11/19/2014
112.9	1	XU 19	50-60	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.4		11/19/2014
112.10-17	8	XU 19	50-60	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	5.6		11/19/2014
112.18-19	2	XU 19	50-60	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.1		11/19/2014
112	3	XU 19	50-60	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	115		11/19/2014
112	1	XU 19	50-60	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	3		11/19/2014
112	1	XU 19	50-60	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	4		11/19/2014
112	1	XU 19	50-60	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	23		11/19/2014
112	1	XU 19	50-60	Lithic	fire-cracked rock	spall			basaltic			1 (<2"-1")	16		11/19/2014
112	1	XU 19	50-60	Lithic	fire-cracked rock	angular/spall			basaltic			2 (<1"-1/2")	10		11/19/2014
112	1	XU 19	50-60	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	37		11/19/2014
112	1	XU 19	50-60	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	5		11/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
112	1	XU 19	50-60	Lithic	fire-cracked rock	angular/spall			granitic			3 (<1/2"-1/4")	3		11/19/2014
112	1	XU 19	50-60	Lithic	fire-cracked rock	cobble with spall			granitic			1 (<2"-1")	81		11/19/2014
112	5	XU 19	50-60	Lithic	fire-cracked rock	crumb			granitic			4 (<1/4")	2		11/19/2014
113.1	1	XU 19	60-70	Lithic	debris	bipolar flake			quartz	100%		2 (<1"-1/2")	11.3		11/19/2014
113.2	1	XU 19	60-70	Lithic	debris	bipolar flake			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	0.8		11/19/2014
113.3	1	XU 19	60-70	Lithic	debris	nonbifacial			quartz	>0-<50%		3 (<1/2"-1/4")	0.8		11/19/2014
113.4	1	XU 19	60-70	Lithic	debris	edge preparation			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	1.7		11/19/2014
113.5	1	XU 19	60-70	Lithic	debris	broken flake			basaltic	0%		3 (<1/2"-1/4")	1.1		11/19/2014
113.6-11	6	XU 19	60-70	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	1.7		11/19/2014
113.12-14	3	XU 19	60-70	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.3		11/19/2014
113	1	XU 19	60-70	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	99		11/19/2014
113	2	XU 19	60-70	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	105		11/19/2014
113	1	XU 19	60-70	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	9		11/19/2014
113	1	XU 19	60-70	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	11		11/19/2014
113	1	XU 19	60-70	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	1		11/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
113	1	XU 19	60-70	Lithic	fire-cracked rock	angular/spall			basaltic			2 (<1"-1/2")	14		11/19/2014
114.1	1	XU 19	70-80	Lithic	debris	bipolar flake			Swan River Chert	0%	heat treated	2 (<1"-1/2")	4.1		11/20/2014
114.2	1	XU 19	70-80	Lithic	debris	shatter			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	1.8		11/20/2014
114.3	1	XU 19	70-80	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.3		11/20/2014
114	2	XU 19	70-80	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	19		11/20/2014
114	2	XU 19	70-80	Lithic	fire-cracked rock	crumb			granitic			4 (<1/4")	1		11/20/2014
115.4	1	XU 20	10-20	Lithic	tool	patterned bifacial	unfinished biface, stage 4		Swan River Chert	0%	heat treated	2 (<1"-1/2")	11.6	broken/ worn out; distal	11/20/2014
115.1	1	XU 20	10-20	Faunal	mammalian, medium/large	longbone	fragment		fractured, spiral			3 (<1/2"-1/4")	0.7	Beta	11/20/2014
115.2-3	2	XU 20	10-20	Faunal	mammalian, medium/large	longbone	fragment		fractured, spiral			3 (<1/2"-1/4")	14.7	Beta	11/20/2014
115.5-6	2	XU 20	10-20	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.9		11/20/2014
115.7	1	XU 20	10-20	Lithic	debris	bipolar flake			Lake Superior Agate	0%		3 (<1/2"-1/4")	1.2		11/20/2014
115.8	1	XU 20	10-20	Lithic	debris	decortication			unidentified material	100%		3 (<1/2"-1/4")	2.9		11/20/2014
115.9	1	XU 20	10-20	Lithic	debris	bipolar flake			quartz	0%		3 (<1/2"-1/4")	2.7		11/20/2014
115.1	1	XU 20	10-20	Lithic	debris	nonbifacial			quartzite	0%		2 (<1"-1/2")	9.6		11/20/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
115.11	1	XU 20	10-20	Lithic	debris	bipolar flake			quartz	>0-<50%		3 (<1/2"-1/4")	2		11/20/2014
115.12	1	XU 20	10-20	Lithic	debris	bipolar flake			basaltic	0%		3 (<1/2"-1/4")	1.8		11/20/2014
115.13	1	XU 20	10-20	Lithic	debris	broken flake			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	0.4		11/20/2014
115.14	1	XU 20	10-20	Lithic	debris	broken flake			basaltic	0%		3 (<1/2"-1/4")	1.1		11/20/2014
115.15	1	XU 20	10-20	Lithic	debris	bipolar flake			Lake Superior Agate	100%		3 (<1/2"-1/4")	0.6		11/20/2014
115.16	1	XU 20	10-20	Lithic	debris	broken flake			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	1.2		11/20/2014
115.17	1	XU 20	10-20	Lithic	debris	bipolar flake			Tongue River Silica	0%	heat treated	2 (<1"-1/2")	2.8		11/20/2014
115.18	1	XU 20	10-20	Lithic	debris	bipolar flake			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	2		11/20/2014
115.19	1	XU 20	10-20	Lithic	debris	bipolar flake			quartz	100%		2 (<1"-1/2")	5.8		11/20/2014
115.2	1	XU 20	10-20	Faunal	mammalian, medium/large	ulna, left	fragment					2 (<1"-1/2")	2.8	prob. Deer; very eroded	11/20/2014
115.21	1	XU 20	10-20	Faunal	Odocoileus virginianus (white-tailed deer)	radius, right	proximal fragment					1 (<2"-1")	8.6		11/20/2014
115.22	1	XU 20	10-20	Faunal	mammalian, large	unidentifiable	fragment					3 (<1/2"-1/4")	2.6		11/20/2014
115.23	1	XU 20	10-20	Faunal	mammalian	unidentifiable	fragment					3 (<1/2"-1/4")	0.5		11/20/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
115	1	XU 20	10-20	Lithic	fire-cracked rock	spall			basaltic			1 (<2"-1")	162		11/20/2014
115	1	XU 20	10-20	Lithic	fire-cracked rock	angular/spall			quartzite			2 (<1"-1/2")	19		11/20/2014
115	1	XU 20	10-20	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	44		11/20/2014
115	1	XU 20	10-20	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	21		11/20/2014
115	2	XU 20	10-20	Lithic	fire-cracked rock	crumb			granitic			4 (<1/4")	1		11/20/2014
115	1	XU 20	10-20	Lithic	fire-cracked rock	angular			igneous			2 (<1"-1/2")	11		11/20/2014
115	1	XU 20	10-20	Lithic	fire-cracked rock	angular/spall			unidentified material			2 (<1"-1/2")	4		11/20/2014
115	1	XU 20	10-20	Lithic	fire-cracked rock	angular			igneous			3 (<1/2"-1/4")	2		11/20/2014
115	1	XU 20	10-20	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	1		11/20/2014
115	1	XU 20	10-20	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	7		11/20/2014
115	3	XU 20	10-20	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	12		11/20/2014
115	1	XU 20	10-20	Lithic	fire-cracked rock	spall			basaltic			3 (<1/2"-1/4")	1		11/20/2014
115	1	XU 20	10-20	Lithic	fire-cracked rock	spall			basaltic			4 (<1/4")	1		11/20/2014
116.1	1	XU 20	20-30	Lithic	tool	patterned flake (unifacial retouch)	end scraper	decortication	silicified wood	50-<100%		2 (<1"-1/2")	3.2	finished, whole	11/20/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
116.2	1	XU 20	20-30	Lithic	debris	broken flake			Tongue River Silica	>0-<50%	heat treated	3 (<1/2"-1/4")	0.4		11/20/2014
116.3	1	XU 20	20-30	Lithic	debris	bipolar flake			quartz	100%		2 (<1"-1/2")	6.3		11/20/2014
116.4-5	2	XU 20	20-30	Lithic	debris	bipolar flake			quartz	0%		3 (<1/2"-1/4")	2.7		11/20/2014
116.6	1	XU 20	20-30	Lithic	debris	bifacial shaping			Prairie du Chien Chert (oolitic)	0%	heat treated	3 (<1/2"-1/4")	0.3		11/20/2014
116.7	1	XU 20	20-30	Lithic	debris	other G4 flake			Swan River Chert	0%	heat treated	4 (<1/4")	0.1		11/20/2014
116.8	1	XU 20	20-30	Lithic	debris	other G4 flake			Swan River Chert	0%	heat treated	4 (<1/4")	0.4		11/20/2014
116.9	1	XU 20	20-30	Lithic	debris	nonbifacial			unidentified material	>0-<50%		3 (<1/2"-1/4")	2.1		11/20/2014
116.1	1	XU 20	20-30	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.3		11/20/2014
116.11	1	XU 20	20-30	Faunal	mammalian	tooth, enamel	fragment					3 (<1/2"-1/4")	0.4		11/20/2014
116.12-13	2	XU 20	20-30	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.7		11/20/2014
116.14-17	4	XU 20	20-30	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.1		11/20/2014
116	1	XU 20	20-30	Lithic	fire-cracked rock	angular			quartzite			0 (<4"-2")	184		11/20/2014
116	2	XU 20	20-30	Lithic	fire-cracked rock	angular/spall			unidentified material			1 (<2"-1")	118		11/20/2014
116	2	XU 20	20-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	94		11/20/2014
116	1	XU 20	20-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	18		11/20/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
116	1	XU 20	20-30	Lithic	fire-cracked rock	angular/spall			basaltic			2 (<1"-1/2")	25		11/20/2014
116	1	XU 20	20-30	Lithic	fire-cracked rock	angular/spall			unidentified material			2 (<1"-1/2")	4		11/20/2014
116	1	XU 20	20-30	Lithic	fire-cracked rock	angular			metamorphic			3 (<1/2"-1/4")	5		11/20/2014
116	1	XU 20	20-30	Lithic	fire-cracked rock	spall			metamorphic			2 (<1"-1/2")	6		11/20/2014
116	1	XU 20	20-30	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	1		11/20/2014
116	2	XU 20	20-30	Lithic	fire-cracked rock	angular			metamorphic			2 (<1"-1/2")	6		11/20/2014
116	1	XU 20	20-30	Lithic	fire-cracked rock	angular/spall			unidentified material			2 (<1"-1/2")	4		11/20/2014
116	1	XU 20	20-30	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	1		11/20/2014
117.1	1	XU 20	30-40	Lithic	core	freehand nonbifacial	patterned	unprepared	basaltic	50-<100%		1 (<2"-1")	80		11/20/2014
117.2	1	XU 20	30-40	Lithic	core	freehand nonbifacial	unpatterned (multi-directional)	unprepared	basaltic	50-<100%		1 (<2"-1")	78.1		11/20/2014
117.3	1	XU 20	30-40	Lithic	debris	decortication			Red River Chert	100%		2 (<1"-1/2")	9.5		11/20/2014
117.4	1	XU 20	30-40	Lithic	debris	nonbifacial			Tongue River Silica	0%	heat treated	2 (<1"-1/2")	3.2		11/20/2014
117.5	1	XU 20	30-40	Lithic	debris	bipolar flake			quartz	>0-<50%		3 (<1/2"-1/4")	1.2		11/20/2014
117.6	1	XU 20	30-40	Lithic	tool	unpatterned flake	utilized flake	nonbifacial	Knife Lake Siltstone	>0-<50%		2 (<1"-1/2")	11.1	finished, whole; intentional backing	11/20/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
117.7-8	2	XU 20	30-40	Lithic	debris	bifacial thinning			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	0.5		11/20/2014
117.9	1	XU 20	30-40	Lithic	debris	bipolar flake			Lake Superior Agate	50-<100%		3 (<1/2"-1/4")	1.1		11/20/2014
117.1	1	XU 20	30-40	Lithic	debris	other G4 flake			unidentified chert	0%	probably heat treated	4 (<1/4")	0.2		11/20/2014
117.11-14	4	XU 20	30-40	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	1.2		11/20/2014
117	1	XU 20	30-40	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	27		11/20/2014
117	1	XU 20	30-40	Lithic	fire-cracked rock	angular/spall			granitic			4 (<1/4")	2		11/20/2014
117	1	XU 20	30-40	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	5		11/20/2014
117	1	XU 20	30-40	Lithic	fire-cracked rock	angular/spall			unidentified material			2 (<1"-1/2")	3		11/20/2014
117	1	XU 20	30-40	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	3		11/20/2014
117	1	XU 20	30-40	Lithic	fire-cracked rock	angular/spall			unidentified material			3 (<1/2"-1/4")	2		11/20/2014
117	1	XU 20	30-40	Lithic	fire-cracked rock	angular/spall			unidentified material			2 (<1"-1/2")	3		11/20/2014
118.1	1	XU 20	40-50	Lithic	debris	bifacial shaping			Knife River Flint	0%		4 (<1/4")	0.1		11/20/2014
118	1	XU 20	40-50	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	67		11/20/2014
118	1	XU 20	40-50	Lithic	fire-cracked rock	friable rounded piece			granitic			2 (<1"-1/2")	4		11/20/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
118	1	XU 20	40-50	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	8		11/20/2014
118	1	XU 20	40-50	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	2		11/20/2014
119.1-2	2	XU 20	50-60	Lithic	debris	broken flake			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	0.9		11/20/2014
119.3	1	XU 20	50-60	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.7		11/20/2014
120.1	1	XU 20	60-70	Lithic	debris	shatter			quartz	>0-<50%		2 (<1"-1/2")	10.5		11/20/2014
120.2	1	XU 20	60-70	Faunal	mammalian, medium/large	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	1.5		11/20/2014
120	1	XU 20	60-70	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	5		11/20/2014
121.1	1	XU 21	10-20	Lithic	debris	decortication			Lake Superior Agate	100%		3 (<1/2"-1/4")	0.8		11/21/2014
121.2	1	XU 21	10-20	Faunal	mammalian, large	unidentifiable	fragment					2 (<1"-1/2")	1.3		11/21/2014
121.3	1	XU 21	10-20	Faunal	Odocoileus virginianus (white-tailed deer)	phalanx						2 (<1"-1/2")	4.1	2nd	11/21/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
122.16	1	XU 21	20-30	Lithic	tool	unpatterned cobble	anvilstone		quartzite	100%		0 (<4"-2")	958	one side has 3 pecking concentratio ns, the other has one pecking concentratio n	11/20/2014
122.1	1	XU 21	20-30	Lithic	debris	nonbifacial			Swan River Chert	0%	heat treated	2 (<1"-1/2")	2.4		11/20/2014
122.2	1	XU 21	20-30	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	1.2		11/20/2014
122.3-4	2	XU 21	20-30	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.9		11/20/2014
122.5	1	XU 21	20-30	Lithic	debris	broken flake			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	0.3		11/20/2014
122.6	1	XU 21	20-30	Lithic	debris	nonbifacial			Tongue River Silica	0%		3 (<1/2"-1/4")	0.6		11/20/2014
122.7	1	XU 21	20-30	Lithic	debris	decortication			Swan River Chert	50-<100%	heat treated	3 (<1/2"-1/4")	0.5		11/20/2014
122.8	1	XU 21	20-30	Lithic	debris	broken flake			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	0.2		11/20/2014
122.9	1	XU 21	20-30	Lithic	debris	bipolar flake			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	2.3		11/20/2014
122.10-13	4	XU 21	20-30	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	2.2		11/20/2014
122.14-15	2	XU 21	20-30	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.4		11/20/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
122	1	XU 21	20-30	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	2.5		11/20/2014
122	1	XU 21	20-30	Lithic	fire-cracked rock	spall			basaltic			3 (<1/2"-1/4")	1.2		11/20/2014
122	1	XU 21	20-30	Lithic	fire-cracked rock	angular			quartzite			3 (<1/2"-1/4")	2		11/20/2014
122	1	XU 21	20-30	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	10		11/20/2014
122	3	XU 21	20-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	286		11/20/2014
122	2	XU 21	20-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	18		11/20/2014
122	1	XU 21	20-30	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	30		11/20/2014
122	1	XU 21	20-30	Lithic	fire-cracked rock	angular			quartzite			3 (<1/2"-1/4")	1		11/20/2014
122	2	XU 21	20-30	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	16		11/20/2014
122	2	XU 21	20-30	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	21		11/20/2014
122	3	XU 21	20-30	Lithic	fire-cracked rock	angular/spall			basaltic			2 (<1"-1/2")	10		11/20/2014
122	1	XU 21	20-30	Lithic	fire-cracked rock	spall			unidentified material			3 (<1/2"-1/4")	1		11/20/2014
122	1	XU 21	20-30	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	24		11/20/2014
122	1	XU 21	20-30	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	43		11/20/2014
122	1	XU 21	20-30	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	52		11/20/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
122	2	XU 21	20-30	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	15		11/20/2014
122	1	XU 21	20-30	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	15		11/20/2014
122	1	XU 21	20-30	Lithic	fire-cracked rock	angular/spall			granitic			3 (<1/2"-1/4")	3		11/20/2014
122	3	XU 21	20-30	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	29		11/20/2014
122	1	XU 21	20-30	Lithic	fire-cracked rock	cobble with angular			unidentified material			0 (<4"-2")	522		11/20/2014
123.1	1	XU 21	30-40	Lithic	debris	shatter			quartz	0%		3 (<1/2"-1/4")	2.5		11/20/2014
123.2	1	XU 21	30-40	Lithic	debris	broken flake			quartz	50-<100%		3 (<1/2"-1/4")	0.1		11/20/2014
123	1	XU 21	30-40	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	13		11/20/2014
123	1	XU 21	30-40	Lithic	fire-cracked rock	angular			quartzite			3 (<1/2"-1/4")	1		11/20/2014
124.1	1	XU 21	40-50	Lithic	debris	nonbifacial			chalcedony	0%	probably heat treated	3 (<1/2"-1/4")	2.1		11/20/2014
124.2	1	XU 21	40-50	Lithic	debris	shatter			quartz	0%		3 (<1/2"-1/4")	1.3		11/20/2014
124.3	1	XU 21	40-50	Lithic	debris	broken flake			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	0.4		11/20/2014
124.4	1	XU 21	40-50	Lithic	debris	broken flake			Tongue River Silica	0%		3 (<1/2"-1/4")	0.3		11/20/2014
124.5	1	XU 21	40-50	Faunal	mammalian, large	unidentifiable	fragment	calcined				2 (<1"-1/2")	1.7		11/20/2014
124.6	1	XU 21	40-50	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.5		11/20/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
124	1	XU 21	40-50	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	11		11/20/2014
124	1	XU 21	40-50	Lithic	fire-cracked rock	angular			basaltic			3 (<1/2"-1/4")	2		11/20/2014
124	1	XU 21	40-50	Lithic	fire-cracked rock	angular			quartzite			3 (<1/2"-1/4")	2		11/20/2014
125.1-2	2	XU 21	50-60	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.2		11/20/2014
125.3	1	XU 21	50-60	Lithic	tool	unpatterned flake	utilized flake	nonbifacial	Knife Lake Siltstone	0%		1 (<2"-1")	23.6	finished, whole	11/20/2014
126.1	1	XU 21	60-70	Lithic	debris	nonbifacial			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	1.3		11/20/2014
126.2	1	XU 21	60-70	Lithic	debris	broken flake			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	0.8		11/20/2014
126	1	XU 21	60-70	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	31		11/20/2014
126	1	XU 21	60-70	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	6		11/20/2014
127.1	1	XU 22	10-20	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	1.1		11/20/2014
127.2	1	XU 22	10-20	Lithic	debris	broken flake			basaltic	0%		3 (<1/2"-1/4")	0.9		11/20/2014
127	2	XU 22	10-20	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	13		11/20/2014
127	1	XU 22	10-20	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	7		11/20/2014
127	1	XU 22	10-20	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	3		11/20/2014
127	1	XU 22	10-20	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	50		11/20/2014
127	1	XU 22	10-20	Lithic	fire-cracked rock	angular/spall			quartzite			1 (<2"-1")	19		11/20/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
127	1	XU 22	10-20	Lithic	fire-cracked rock	spall			basaltic			1 (<2"-1")	11		11/20/2014
127	1	XU 22	10-20	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	103		11/20/2014
127	1	XU 22	10-20	Lithic	fire-cracked rock	friable rounded piece			granitic			2 (<1"-1/2")	5		11/20/2014
127	1	XU 22	10-20	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	16		11/20/2014
128.1	1	ST 87EN5	0-30	Lithic	debris	bipolar flake			quartz	100%		2 (<1"-1/2")	11.2		9/17/2014
128.2	1	ST 87EN5	0-30	Lithic	debris	nonbifacial			chalcedony	0%		2 (<1"-1/2")	5.6		9/17/2014
128.3	1	ST 87EN5	0-30	Lithic	debris	bipolar flake			granitic	100%		2 (<1"-1/2")	12.9		9/17/2014
128	2	ST 87EN5	0-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	75		9/17/2014
128	1	ST 87EN5	0-30	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	1		9/17/2014
128	1	ST 87EN5	0-30	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	3		9/17/2014
128	2	ST 87EN5	0-30	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	20		9/17/2014
128	1	ST 87EN5	0-30	Lithic	fire-cracked rock	angular			quartzite			3 (<1/2"-1/4")	2		9/17/2014
128	1	ST 87EN5	0-30	Lithic	fire-cracked rock	cobble (non-friable)			granitic			0 (<4"-2")	713		9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
129.1	1	XU 3	29-35	Lithic	tool	patterned cobble	net sinker		basaltic	50-<100%		0 (<4"-2")	380.9	PP 38; finished, whole; natural notch on one edge, flaked on one edge; L= 92.9, W= 57.8, T= 39.3	9/19/2014
130.1	1	XU 14	13-20	Lithic	tool	unpatterned flake (unifacial retouch)	denticulate	decortication	basaltic	100%		0 (<4"-2")	309.6	PP 1; finished, whole	9/26/2014
131.1	1	XU 3	12-17	Lithic	tool	patterned cobble	net sinker		granitic	50-<100%		0 (<4"-2")	303.5	PP 2; finished, whole; flaked on both edges; L= 109.9, W= 57.6, T= 38.9	9/17/2014
132.1	1	XU 9	19-24	Lithic	tool	patterned cobble	net sinker		granitic	50-<100%		0 (<4"-2")	271.5	PP 36; flaked on both edges; L= 98.5, W= 55.3, T= 37.2	9/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
133.1	1	XU 13	16-24	Lithic	core	freehand nonbifacial	unpatterned (multi-directional)	unprepared	basaltic	50-<100%		0 (<4"-2")	580	PP 5	9/25/2014
134.1	1	XU 3	20-27	Lithic	tool	patterned cobble	net sinker		quartzite	50-<100%		0 (<4"-2")	1104	PP 6; finished, whole; flake on both edges; L= 156.4, W= 68.5, T= 65	9/19/2014
135.1	1	XU 13	30-40	Lithic	tool	unpatterned flake	utilized flake	decortication	basaltic	100%		0 (<4"-2")	439	PP 6; finished, whole	9/26/2014
136.1	1	XU 3	16-20	Lithic	tool	patterned cobble	net sinker		quartzite	50-<100%		0 (<4"-2")	351.8	PP 7; finished, whole; flaked on both edges; L= 108.6, W= 63.5, T= 33.4	9/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
137.1	1	XU 3	20-22	Lithic	tool	patterned cobble	net sinker		quartzite	50-<100%		0 (<4"-2")	229.8	PP 8; finished, whole; natural notch on one edge, flaked on one edge; L= 105.5, W= 70.1, T= 18.4	9/19/2014
138.1	1	XU 3	17-22	Lithic	tool	patterned cobble	net sinker		unidentified material	50-<100%		0 (<4"-2")	288.9	PP 9; finished, whole; flaked on both edges; L= 97.9, W= 69.5, T= 36	9/19/2014
139.1	1	XU 3	18-20	Lithic	tool	patterned cobble	net sinker		quartzite	50-<100%		0 (<4"-2")	266.8	PP 10; finished, whole; flaked on both edges; L= 109.5, W= 72.2, T= 18	9/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
140.1	1	XU 3	20-22	Lithic	tool	patterned cobble	net sinker		unidentified material	50-<100%		0 (<4"-2")	248.1	PP 11; finished, whole; natural notch on both edges; L= 113.9, W= 54.3, T= 23.9	9/19/2014
141.1	1	XU 3	20-23	Lithic	tool	patterned cobble	net sinker		quartzite	50-<100%		0 (<4"-2")	89.9	PP 12; broken/ worn out, distal; natural notch on one edge, refit w/ 160.1; L= 185.1, W= 61.3, T= 9.7	9/19/2014
142.1	1	XU 3	17-24	Lithic	tool	patterned cobble	net sinker		quartzite	50-<100%		0 (<4"-2")	272	PP 13; finished, whole; flaked on both edges; L= 106.5, W= 87.2, T= 16.7	9/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
143.1	1	XU 3	24-31	Lithic	tool	patterned cobble	net sinker		granitic	50-<100%		0 (<4"-2")	318.9	PP 15; finished, whole; flaked on both edges; L= 103.2, W= 61.7, T= 30.9	9/19/2014
144.1	1	XU 3	19-23	Lithic	tool	patterned cobble	net sinker		rhyolite	50-<100%		0 (<4"-2")	317.3	PP 16; finished, whole; natural notch on one edge, flaked on one edge; L= 87.6, W= 70, T= 32.8	9/19/2014
145.1	1	XU 3	19-23	Lithic	tool	patterned cobble	net sinker		quartzite	50-<100%		0 (<4"-2")	233.3	PP 17; finished, whole; flaked on both edges; L= 119.6, W= 60.5, T= 25.2	9/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
146.1	1	XU 3	19-23	Lithic	tool	patterned cobble	net sinker		granitic	50-<100%		0 (<4"-2")	263.7	PP 18; finished, whole; flaked on both edges; L= 93.9, W= 64.7, T= 34.8	9/19/2014
147.1	1	XU 3	19-24	Lithic	tool	patterned cobble	net sinker		granitic	50-<100%		0 (<4"-2")	357.2	PP 19; finished, whole; natural notch on one edge, flaked on one edge; L= 133.5, W= 60, T= 27.4	9/19/2014
148.1	1	XU 9	22-25	Lithic	tool	patterned cobble	net sinker		basaltic	50-<100%		0 (<4"-2")	196.2	PP 20; finished, whole; flaked on both edges; L= 133.6, W= 59.5, T= 12.3	9/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
149.1	1	XU 9	20-25	Lithic	tool	patterned cobble	net sinker		basaltic	50-<100%		0 (<4"-2")	290.4	PP 21; finished, whole; flaked on both edges; L= 116.4, W= 70.4, T= 22.5	9/19/2014
150.1	1	XU 9	21-24	Lithic	tool	patterned cobble	net sinker		rhyolite	50-<100%		0 (<4"-2")	220	PP 22; finished, whole; natural notch on one edge, flaked on one edge; L= 78.2, W= 64.8, T= 22.3	9/19/2014
151.1	1	XU 9	20-24	Lithic	tool	patterned cobble	net sinker		quartzite	50-<100%		0 (<4"-2")	313.4	PP 24; finished, whole; flaked on both edges; L= 103.7, W= 70.3, T= 30.2	9/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
152.1	1	XU 9	13-20	Lithic	tool	patterned cobble	net sinker		metamorphic	50-<100%		0 (<4"-2")	400.9	PP 25; finished, whole; flaked on both edges; L= 108, W= 68.5, T= 29.3	9/19/2014
153.1	1	XU 9	17-21	Lithic	tool	patterned cobble	net sinker		metamorphic	50-<100%		0 (<4"-2")	376.5	PP 26; finished, whole; flaked on both edges; L= 115.9, W= 67, T= 27.5	9/19/2014
154.1	1	XU 9	20-26	Lithic	tool	patterned cobble	net sinker		quartzite	50-<100%		0 (<4"-2")	330	PP 27; finished, whole; flaked on both edges; L= 110.1, W= 78.9, T= 19.8	9/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
155.1	1	XU 9	13-19	Lithic	tool	patterned cobble	net sinker		unidentified material	50-<100%		0 (<4"-2")	238	PP 28; finished, whole; natural notch on one edge, flaked on one edge; L= 96, W= 72.1, T= 27.3	9/19/2014
156.1	1	XU 9	16-21	Lithic	tool	patterned cobble	net sinker		quartzite	50-<100%		0 (<4"-2")	332.2	PP 29; finished, whole; flaked on both edges; L= 83.9, W= 66.1, T= 32.5	9/19/2014
157.1	1	XU 3	24-28	Lithic	tool	patterned cobble	net sinker		basaltic	50-<100%		1 (<2"-1")	233.1	PP 32; finished, whole; natural notch on one edge, flaked on one edge; L= 118.5, W= 49.5, T= 28.8	9/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
158.1	1	XU 3	24-31	Lithic	tool	patterned cobble	net sinker		quartzite	50-<100%		0 (<4"-2")	355.5	PP 34; finished, whole; flaked on both edges; L= 110.1, W= 66.8, T= 31.5	9/19/2014
159.1	1	XU 9	18-24	Lithic	tool	patterned cobble	net sinker		basaltic	50-<100%		1 (<2"-1")	279.6	PP 37; finished, whole; natural notch on one edge, flaked on one edge; L= 125.8, W= 33.8, T= 27.8	9/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
160.1	1	ST 88ES5	0-30	Lithic	tool	patterned cobble	net sinker		quartzite	50-<100%		0 (<4"-2")	117.6	broken/ worn out, proximal; natural notch on one edge, flaked on one edge; refit with 141.1; L= 185.1, W= 61.3, T= 9.7	9/17/2014
160.2	1	ST 88ES5	0-30	Lithic	tool	patterned cobble	net sinker		metamorphic	50-<100%		0 (<4"-2")	364.1	finished, whole; flaked on both edges; L= 116.5, W=66.4; T= 26.5	9/17/2014
160.3	1	ST 88ES5	0-30	Lithic	tool	patterned cobble	net sinker		quartzite	50-<100%		0 (<4"-2")	376.1	finished, whole; flaked on both edges; L= 106.6, W= 72, T= 29.4	9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
160.4	1	ST 88ES5	0-30	Lithic	tool	patterned cobble	net sinker		rhyolite	50-<100%		0 (<4"-2")	262.7	finished, whole; natural notch on one edge, flaked on one edge; L= 108.6, W= 65.6, T= 22.1	9/17/2014
160.5	1	ST 88ES5	0-30	Lithic	tool	patterned cobble	net sinker		metamorphic	50-<100%		0 (<4"-2")	278.4	finished, whole; natural notch on one edge, flaked on one edge; L= 120.6, W= 58.1, T= 25.3	9/17/2014
160.6	1	ST 88ES5	0-30	Lithic	tool	patterned cobble	net sinker		siltstone	50-<100%		0 (<4"-2")	272.3	finished, whole; flaked on both edges; L= 105.5, W= 71.3, T= 26.7	9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
160.7	1	ST 88ES5	0-30	Lithic	tool	patterned cobble	net sinker		quartzite	50-<100%		0 (<4"-2")	249.1	finished, whole; flaked on both edges; L= 91, W= 73.3, T= 23.7	9/17/2014
160.8	1	ST 88ES5	0-30	Lithic	tool	patterned cobble	net sinker		quartzite	50-<100%		0 (<4"-2")	205.9	finished, whole; flaked on both edges; L= 99.2, W= 80.2, T= 19.9	9/17/2014
160.9	1	ST 88ES5	0-30	Lithic	tool	patterned cobble	net sinker		quartzite	50-<100%		0 (<4"-2")	262.9	finished, whole; flaked on both edges; L= 97.3, W= 68.5, T= 21.1	9/17/2014
160	1	ST 88ES5	0-30	Lithic	fire-cracked rock	spall			quartzite			0 (<4"-2")	199.3		9/17/2014
160	1	ST 88ES5	0-30	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	55		9/17/2014
160	1	ST 88ES5	0-30	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	25		9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
160	2	ST 88ES5	0-30	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	34		9/17/2014
955	1	XU 13	10-23	Lithic	tool	unpatterned cobble	anvilstone		unidentified material	100%		00 (>4")	3130	finished, whole; pitted surface from use	9/25/2014
956	1	XU 3	25-28	Lithic	fire-cracked rock	angular			metamorphic			1 (<2"-1")	41.1	PP 33	9/17/2014
957	1	XU 6	20-23	Lithic	fire-cracked rock	spall			unidentified material			0 (<4"-2")	131.5	PP 3	9/18/2014
958	1	XU 6	16-18	Lithic	fire-cracked rock	spall			granitic			0 (<4"-2")	115	PP 4	9/18/2014
959	1	XU 6	24-33	Lithic	fire-cracked rock	cobble (friable)			granitic			0 (<4"-2")	774	PP 5	9/18/2014
960	1	XU 9	0-10	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	10		9/18/2014
960	1	XU 9	0-10	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	26.5		9/18/2014
961	1	XU 9	20-24	Lithic	fire-cracked rock	cobble with spall			quartzite			0 (<4"-2")	324.7	PP 23	9/19/2014
962	1	XU 9	24-28	Lithic	fire-cracked rock	spall			basaltic			1 (<2"-1")	39.9	PP 30	9/19/2014
963	1	XU 9	20-23	Lithic	fire-cracked rock	spall			basaltic			0 (<4"-2")	199.9	PP 35	9/19/2014
964	1	XU 3	14-16	Lithic	fire-cracked rock	spall			metamorphic			0 (<4"-2")	217.8	PP 1	9/19/2014
965	2	XU 6	40-50	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	24.1		9/18/2014
965	1	XU 6	40-50	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	49.7		9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
965	1	XU 6	40-50	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	28.7		9/18/2014
965	1	XU 6	40-50	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	13.4		9/18/2014
965	1	XU 6	40-50	Lithic	fire-cracked rock	angular/spall			metamorphic			2 (<1"-1/2")	5.7		9/18/2014
965	1	XU 6	40-50	Lithic	fire-cracked rock	angular/spall			metamorphic			1 (<2"-1")	123		9/18/2014
965	1	XU 6	40-50	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	10.4		9/18/2014
965	2	XU 6	40-50	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	15.2		9/18/2014
965	1	XU 6	40-50	Lithic	fire-cracked rock	friable rounded piece			granitic			2 (<1"-1/2")	8.9		9/18/2014
970	1	ST 90ES10	0-30	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	5		9/17/2014
970	1	ST 90ES10	0-30	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	1		9/17/2014
970	1	ST 90ES10	0-30	Lithic	fire-cracked rock	angular			quartzite			3 (<1/2"-1/4")	1		9/17/2014
970	1	ST 90ES10	0-30	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	2		9/17/2014
970	1	ST 90ES10	0-30	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	10		9/17/2014
971	1	ST 90ES10	0-30	Lithic	fire-cracked rock	cobble (friable)			granitic			00 (>4")	2566		9/17/2014
972	1	ST 91EN5	0-30	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	115		9/17/2014
972	1	ST 91EN5	0-30	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	54		9/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
972	1	ST 91EN5	0-30	Lithic	fire-cracked rock	angular			metamorphic			1 (<2"-1")	170		9/17/2014
973	1	ST 93ES5	0-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	15		9/17/2014
973	1	ST 93ES5	0-30	Lithic	fire-cracked rock	cobble with spall			granitic			0 (<4"-2")	589		9/17/2014
973	2	ST 93ES5	0-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	109		9/17/2014
973	2	ST 93ES5	0-30	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	82		9/17/2014
974	1	ST 96EN8	0-75	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	12		9/17/2014
974	1	ST 96EN8	0-75	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	5		9/17/2014
975	1	XU 5	30-40	Lithic	fire-cracked rock	cobble (friable)			granitic			0 (<4"-2")	991		9/18/2014
975	1	XU 5	30-40	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	20		9/18/2014
975	1	XU 5	30-40	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	36		9/18/2014
975	1	XU 5	30-40	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	5		9/18/2014
975	1	XU 5	30-40	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	12		9/18/2014
975	1	XU 5	30-40	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	3		9/18/2014
976	1	XU 13	13-20	Lithic	fire-cracked rock	angular			granitic			0 (<4"-2")	172		9/25/2014
977	1	XU 13	12-19	Lithic	fire-cracked rock	cobble (non-friable)			granitic			0 (<4"-2")	388	PP 2	9/25/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
978	1	XU 13	11-18	Lithic	fire-cracked rock	cobble with spall			basaltic			00 (>4")	1452	PP 3	9/25/2014
979	1	XU 14	8-26	Lithic	fire-cracked rock	cobble (non-friable)			quartzite			00 (>4")	2851	PP 2	9/26/2014
980	1	XU 18N	0-10	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	65		11/19/2014
980	1	XU 18N	0-10	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	34		11/19/2014
980	1	XU 18N	0-10	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	25		11/19/2014
980	3	XU 18N	0-10	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	15		11/19/2014
980	1	XU 18N	0-10	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	62		11/19/2014
980	2	XU 18N	0-10	Lithic	fire-cracked rock	spall			unidentified material			1 (<2"-1")	80		11/19/2014
980	2	XU 18N	0-10	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	279		11/19/2014
980	1	XU 18N	0-10	Lithic	fire-cracked rock	angular/spall			basaltic			1 (<2"-1")	100		11/19/2014
980	2	XU 18N	0-10	Lithic	fire-cracked rock	spall			basaltic			1 (<2"-1")	81		11/19/2014
980	1	XU 18N	0-10	Lithic	fire-cracked rock	angular/spall			metamorphic			1 (<2"-1")	43		11/19/2014
980	3	XU 18N	0-10	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	37		11/19/2014
980	1	XU 18N	0-10	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	40		11/19/2014
980	1	XU 18N	0-10	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	13		11/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
980	1	XU 18N	0-10	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	9		11/19/2014
980	1	XU 18N	0-10	Lithic	fire-cracked rock	angular/spall			quartzite			2 (<1"-1/2")	6		11/19/2014
980	1	XU 18N	0-10	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	18		11/19/2014
980	2	XU 18N	0-10	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	1		11/19/2014
981	1	XU 18N	20-30	Lithic	fire-cracked rock	angular			granitic			0 (<4"-2")	190		11/19/2014
981	1	XU 18N	20-30	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	77		11/19/2014
981	1	XU 18N	20-30	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	9		11/19/2014
982	1	XU 18N	30-40	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	58		11/20/2014
982	2	XU 18N	30-40	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	21		11/20/2014
983	1	XU 19	0-10	Lithic	fire-cracked rock	cobble (non-friable)			unidentified material			0 (<4"-2")	335		11/19/2014
984	1	XU 21	0-10	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	55		11/20/2014
985	1	XU 22	0-10	Lithic	fire-cracked rock	spall			basaltic			1 (<2"-1")	54		11/21/2014
985	1	XU 22	0-10	Lithic	fire-cracked rock	spall			quartzite			1 (<2"-1")	52		11/21/2014
986	5	XU 22	20-30	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	173		11/20/2014
986	1	XU 22	20-30	Lithic	fire-cracked rock	spall			quartzite			1 (<2"-1")	99		11/20/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
986	1	XU 22	20-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	57		11/20/2014
986	1	XU 22	20-30	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	26		11/20/2014
986	1	XU 22	20-30	Lithic	fire-cracked rock	cobble with angular			granitic			0 (<4"-2")	192		11/20/2014
986	2	XU 22	20-30	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	10		11/20/2014
986	1	XU 22	20-30	Lithic	fire-cracked rock	angular			quartzite			0 (<4"-2")	125		11/20/2014
986	2	XU 22	20-30	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	16		11/20/2014
987	1	XU 22	30-40	Lithic	fire-cracked rock	split cobble			unidentified material			0 (<4"-2")	249		11/20/2014
987	1	XU 22	30-40	Lithic	fire-cracked rock	spall			unidentified material			1 (<2"-1")	23		11/20/2014
987	1	XU 22	30-40	Lithic	fire-cracked rock	cobble with spall			unidentified material			2 (<1"-1/2")	23		11/20/2014
987	1	XU 22	30-40	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	14		11/20/2014
987	2	XU 22	30-40	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	357		11/20/2014
988	1	XU 22	40-50	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	92		11/21/2014
989	1	XU 5	25-35	Lithic	fire-cracked rock	cobble (non-friable)			granitic			0 (<4"-2")	1073	bagged as possible feature; but not feature	9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
989	1	XU 5	25-35	Lithic	fire-cracked rock	cobble with spall			granitic			1 (<2"-1")	246	bagged as possible feature; but not feature	9/18/2014
989	1	XU 5	25-35	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	13	bagged as possible feature; but not feature	9/18/2014
989	1	XU 5	25-35	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	14	bagged as possible feature; but not feature	9/18/2014
989	1	XU 5	25-35	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	3	bagged as possible feature; but not feature	9/18/2014
989	2	XU 5	25-35	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	9	bagged as possible feature; but not feature	9/18/2014
989	1	XU 5	25-35	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	4	bagged as possible feature; but not feature	9/18/2014
989	1	XU 5	25-35	Lithic	fire-cracked rock	spall			basaltic			3 (<1/2"-1/4")	1	bagged as possible feature; but not feature	9/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
989	1	XU 5	25-35	Lithic	fire-cracked rock	angular			quartzite			3 (<1/2"-1/4")	1	bagged as possible feature; but not feature	9/18/2014
989	1	XU 5	25-35	Lithic	fire-cracked rock	angular			basaltic			3 (<1/2"-1/4")	3	bagged as possible feature; but not feature	9/18/2014
989	4	XU 5	25-35	Lithic	fire-cracked rock	crumb			granitic			3 (<1/2"-1/4")	3	bagged as possible feature; but not feature	9/18/2014
989	1	XU 5	25-35	Lithic	fire-cracked rock	crumb			granitic			4 (<1/4")	1	bagged as possible feature; but not feature	9/18/2014

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Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
1.1-4	4	ST 113E	cmbs	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.7		9/22/2014
1.5	1	ST 113E	cmbs	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	0.2		9/22/2014
2.1	1	ST 103E	cmbs	Lithic	debris	broken flake			basaltic	0%		2 (<1"-1/2")	2.2	bottom of dark soil	9/9/2014
3.1	1	ST 107E	cmbs	Lithic	debris	nonbifacial			basaltic	0%		2 (<1"-1/2")	1.7		9/9/2014
4.1	1	ST 115E	cmbs	Lithic	tool	unpatterned flake	utilized flake	nonbifacial	Knife Lake Siltstone	0%		2 (<1"-1/2")	3.1	finished, whole; intentional backing	9/9/2014
5.1	1	ST 116E	cmbs	Lithic	debris	broken flake			basaltic	0%		3 (<1/2"-1/4")	0.3		9/9/2014
5.2	1	ST 116E	cmbs	Lithic	debris	broken flake			unidentified material	0%		3 (<1/2"-1/4")	0.9		9/9/2014
6.1	1	ST 117E	cmbs	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.2		9/9/2014
7.1	1	ST 121E	cmbs	Lithic	debris	nonbifacial			basaltic	100%		3 (<1/2"-1/4")	0.5		9/9/2014
8.1	1	ST 124E	cmbs	Lithic	debris	shatter			quartz	50-<100%		2 (<1"-1/2")	5.8		9/9/2014
8	2	ST 124E	cmbs	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	8		9/9/2014
9.1	1	ST 125E	cmbs	Lithic	debris	bipolar flake			Lake Superior Agate	50-<100%		2 (<1"-1/2")	3.3		9/9/2014
9.2	1	ST 125E	cmbs	Lithic	debris	bipolar flake			unidentified material	100%		3 (<1/2"-1/4")	2.1		9/9/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
9.3-4	2	ST 125E	cmbs	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	1		9/9/2014
9.5	1	ST 125E	cmbs	Lithic	debris	shatter			quartzite	>0-<50%		2 (<1"-1/2")	8.2		9/9/2014
9.6-8	3	ST 125E	cmbs	Lithic	debris	shatter			quartz	0%		3 (<1/2"-1/4")	3.6		9/9/2014
9	2	ST 125E	cmbs	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	4		9/9/2014
9	1	ST 125E	cmbs	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	2		9/9/2014
10.1	1	ST 59W	cmbs	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	1		9/9/2014
11.1	1	ST 60W	cmbs	Lithic	debris	bipolar flake			quartzite	0%		4 (<1/4")	0.5		9/9/2014
12.1	1	ST 61W	cmbs	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.6		9/9/2014
13.1	1	ST 65W	cmbs	Lithic	debris	nonbifacial			basaltic	0%		3 (<1/2"-1/4")	1		9/9/2014
13.2	1	ST 65W	cmbs	Lithic	debris	broken flake			rhyolite	0%		3 (<1/2"-1/4")	0.6		9/9/2014
13.3	1	ST 65W	cmbs	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	0.5		9/9/2014
14.1	1	ST 66W	cmbs	Lithic	debris	nonbifacial			quartzite	>0-<50%		3 (<1/2"-1/4")	1.1		9/9/2014
14.2-3	2	ST 66W	cmbs	Lithic	debris	broken flake			Lake Superior Agate	0%	burned	3 (<1/2"-1/4")	0.5		9/9/2014
14.4	1	ST 66W	cmbs	Lithic	debris	broken flake			Lake Superior Agate	0%	heat treated	3 (<1/2"-1/4")	0.5		9/9/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
15.1	1	ST 66W	cmbs	Lithic	debris	nonbifacial			Lake Superior Agate	100%	heat treated	3 (<1/2"-1/4")	0.3		9/9/2014
16.1	1	ST 67W	cmbs	Lithic	debris	decortication			basaltic	100%		3 (<1/2"-1/4")	1.7		9/9/2014
17.1	1	ST 68W	cmbs	Lithic	debris	edge preparation			basaltic	0%		3 (<1/2"-1/4")	0.4		9/9/2014
18.1	1	ST 70W	cmbs	Lithic	debris	broken flake			igneous	0%		3 (<1/2"-1/4")	0.5		9/9/2014
19.1	1	ST 73W	cmbs	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	1.3		9/9/2014
20.1	1	ST 75W	cmbs	Lithic	debris	broken flake			basaltic	0%		2 (<1"-1/2")	2.3		9/9/2014
21.1	1	ST 75W	cmbs	Lithic	debris	decortication			quartz	100%		2 (<1"-1/2")	3.8		9/9/2014
21.2	1	ST 75W	cmbs	Lithic	debris	nonbifacial			basaltic	0%		2 (<1"-1/2")	9.1		9/9/2014
22.1	1	ST 76W	cmbs	Lithic	debris	nonbifacial			igneous	0%		2 (<1"-1/2")	2.4		9/9/2014
22.2	1	ST 76W	cmbs	Lithic	debris	broken flake			basaltic	0%		3 (<1/2"-1/4")	2.4		9/9/2014
900	1	ST 60W	cmbs	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	253		9/9/2014
901	1	ST 64W	cmbs	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	80		9/9/2014
902	1	ST 106E	cmbs	Lithic	fire-cracked rock	cobble with spall			granitic			0 (<4"-2")	356		9/9/2014
903	2	ST 109E	cmbs	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	126		9/9/2014

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Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
903	1	ST 109E	cmbs	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	2		9/9/2014
904	2	ST 118E	cmbs	Lithic	fire-cracked rock	spall			unidentified material			3 (<1/2"-1/4")	2		9/9/2014
905	1	ST 120E	cmbs	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	16		9/9/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
1.1	1	ST 114ES5	cmbs	Faunal	bird	unidentifiable	fragment					4 (<1/4")	0.3		9/22/2014
1.2-3	2	ST 114ES5	cmbs	Faunal	fish	dentary	fragment	calcined				3 (<1/2"-1/4")	0.4		9/22/2014
1.4-5	2	ST 114ES5	cmbs	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.3		9/22/2014
2.1-2	2	ST 124ES7	cmbs	Faunal	mammalian, medium/large	unidentifiable	fragment					3 (<1/2"-1/4")	1.4		9/22/2014
3.1-2	2	XU 6	cmbs	Faunal	fish	unidentifiable	fragment					3 (<1/2"-1/4")	0.3		11/10/2014
3.3-4	2	XU 6	cmbs	Faunal	molluscan	unidentifiable	fragment					3 (<1/2"-1/4")	0.2		11/10/2014
3.5-7	3	XU 6	cmbs	Faunal	bird	unidentifiable	fragment					3 (<1/2"-1/4")	0.5		11/10/2014
3.8-18	11	XU 6	cmbs	Faunal	bird	unidentifiable	fragment					4 (<1/4")	0.5		11/10/2014
3.19	1	XU 6	cmbs	Faunal	Odocoileus virginianus (white-tailed deer)	phalanx	fragment					3 (<1/2"-1/4")	0.4	3rd phalanx; immature	11/10/2014
3.20	1	XU 6	cmbs	Faunal	mammalian	vertebra, caudal	fragment					3 (<1/2"-1/4")	0.2	immature	11/10/2014
3.21	1	XU 6	cmbs	Faunal	mammalian, large	unidentifiable	fragment	calcined				2 (<1"-1/2")	1.1		11/10/2014
3.22-24	3	XU 6	cmbs	Faunal	mammalian, large	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	1.7		11/10/2014
3.25-65	41	XU 6	cmbs	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	12.5		11/10/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
3.67-93	27	XU 6	cmbs	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	2.7		11/10/2014
3.94	1	XU 6	cmbs	Faunal	turtle	carapace	fragment					3 (<1/2"-1/4")	0.3		11/10/2014
3.95-96	2	XU 6	cmbs	Faunal	mammalian, medium/large	longbone	fragment	calcined				2 (<1"-1/2")	7.8	Beta	11/10/2014
3.97-101	5	XU 6	cmbs	Faunal	mammalian, large	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	6.4		11/10/2014
3	1	XU 6	cmbs	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	14		11/10/2014
3	1	XU 6	cmbs	Lithic	fire-cracked rock	angular			metamorphic			2 (<1"-1/2")	12		11/10/2014
3	1	XU 6	cmbs	Lithic	fire-cracked rock	angular			metamorphic			3 (<1/2"-1/4")	1		11/10/2014
3	1	XU 6	cmbs	Lithic	fire-cracked rock	split cobble			quartzite			0 (<4"-2")	249		11/10/2014
3.102	1	XU 6	cmbs	Lithic	tool	unpatterned flake	utilized flake	bipolar	Lake Superior Agate	50-<100%	heat treated	2 (<1"-1/2")	6		11/10/2014
3.103	1	XU 6	cmbs	Lithic	debris	bipolar flake			quartz	0%		3 (<1/2"-1/4")	3.1		11/10/2014
3.104	1	XU 6	cmbs	Lithic	debris	broken flake			Prairie du Chien Chert (oolitic)	>0-<50%	heat treated	2 (<1"-1/2")	1.8		11/10/2014
3.105	1	XU 6	cmbs	Lithic	debris	shatter			unidentified chert	>0-<50%		3 (<1/2"-1/4")	1.6		11/10/2014
4.1-4	4	XU 6	cmbs	Faunal	bird	unidentifiable	fragment					4 (<1/4")	0.2		11/10/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
4.5-11	7	XU 6	cmbs	Faunal	mammalian	unidentifiable	fragment					4 (<1/4")	0.9		11/10/2014
4.12-17	6	XU 6	cmbs	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.1		11/10/2014
4	1	XU 6	cmbs	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	6		11/10/2014
4	1	XU 6	cmbs	Lithic	fire-cracked rock	angular/spall			basaltic			1 (<2"-1")	44		11/10/2014
4	1	XU 6	cmbs	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	11		11/10/2014
4	1	XU 6	cmbs	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	1		11/10/2014
4	1	XU 6	cmbs	Lithic	fire-cracked rock	spall			unidentified material			1 (<2"-1")	22		11/10/2014
4.18-22	5	XU 6	cmbs	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	1.5		11/10/2014
4.23	1	XU 6	cmbs	Lithic	debris	other G4 flake			unidentified chert	0%		4 (<1/4")	0.1		11/10/2014
4.24	1	XU 6	cmbs	Lithic	debris	shatter			quartz	0%		3 (<1/2"-1/4")	0.6		11/10/2014
5.1-2	2	XU 6	cmbs	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.3		11/10/2014
5.3	1	XU 6	cmbs	Lithic	debris	nonbifacial			quartz	0%		2 (<1"-1/2")	2		11/10/2014
5.4	1	XU 6	cmbs	Lithic	debris	bifacial thinning			quartz	0%		3 (<1/2"-1/4")	0.2		11/10/2014
5.5-6	2	XU 6	cmbs	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.9		11/10/2014
5.7	1	XU 6	cmbs	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.3		11/10/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
6.1	1	XU 6	cmbs	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.4		11/10/2014
7.1-2	2	XU 7	cmbs	Faunal	mammalian	unidentifiable	fragment					3 (<1/2"-1/4")	0.3		11/10/2014
7.3-11	9	XU 7	cmbs	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	1.8		11/10/2014
7.12	1	XU 7	cmbs	Lithic	debris	bipolar flake			quartzite	100%		4 (<1/4")	0.4		11/10/2014
7.13	1	XU 7	cmbs	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	0.5		11/10/2014
7.14	1	XU 7	cmbs	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.1		11/10/2014
8.1	1	XU 8	cmbs	Faunal	mammalian	unidentifiable	fragment					4 (<1/4")	0.5		11/10/2014
8.2-6	5	XU 8	cmbs	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	2.4		11/10/2014
8.7-11	5	XU 8	cmbs	Faunal	mammalian	unidentifiable	fragment	calcined				4 (<1/4")	0.9		11/10/2014
8.12	1	XU 8	cmbs	Lithic	debris	bipolar flake			Tongue River Silica	50-<100%	heat treated	2 (<1"-1/2")	3.8		11/10/2014
9.1	1	ST 102ES10	cmbs	Lithic	debris	nonbifacial			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	2.2		9/21/2014
10.1	1	ST 103ES5	cmbs	Lithic	debris	shatter			quartz	0%		2 (<1"-1/2")	7.7		9/21/2014
10.2	1	ST 103ES5	cmbs	Lithic	debris	broken flake			Swan River Chert	0%		3 (<1/2"-1/4")	0.7		9/21/2014
10.3-4	2	ST 103ES5	cmbs	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	1.6		9/21/2014
10	1	ST 103ES5	cmbs	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	80		9/21/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
11.1	1	ST 103ES15	cmbs	Lithic	debris	nonbifacial			quartzite	>0-<50%		3 (<1/2"-1/4")	1.5		9/21/2014
12.1	1	ST 103ES20	cmbs	Lithic	debris	decortication			quartz	100%		1 (<2"-1")	53.9		9/21/2014
13.1	1	ST 106EN5	cmbs	Lithic	debris	broken flake			basaltic	0%		2 (<1"-1/2")	2.3		9/22/2014
13.2-3	2	ST 106EN5	cmbs	Lithic	debris	broken flake			basaltic	0%		3 (<1/2"-1/4")	1.6		9/22/2014
13	1	ST 106EN5	cmbs	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	7		9/22/2014
14.1	1	ST 107EN5	cmbs	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	0.7		9/22/2014
14.2	1	ST 107EN5	cmbs	Lithic	debris	broken flake			basaltic	0%		3 (<1/2"-1/4")	0.2		9/22/2014
14	1	ST 107EN5	cmbs	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	3		9/22/2014
14	1	ST 107EN5	cmbs	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	7		9/22/2014
15.1	1	ST 109EN5	cmbs	Lithic	debris	nonbifacial			basaltic	>0-<50%		1 (<2"-1")	27.2		9/22/2014
15	1	ST 109EN5	cmbs	Lithic	fire-cracked rock	angular			quartzite			0 (<4"-2")	157		9/22/2014
15	2	ST 109EN5	cmbs	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	67		9/22/2014
15	2	ST 109EN5	cmbs	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	27		9/22/2014
15	2	ST 109EN5	cmbs	Lithic	fire-cracked rock	angular			granitic			0 (<4"-2")	511		9/22/2014
15	1	ST 109EN5	cmbs	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	8		9/22/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
15	3	ST 109EN5	cmbs	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	129		9/22/2014
15	2	ST 109EN5	cmbs	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	13		9/22/2014
16.1-2	2	ST 113EN5	cmbs	Lithic	debris	broken flake			basaltic	0%		3 (<1/2"-1/4")	2.2		9/19/2014
16.3	1	ST 113EN5	cmbs	Lithic	debris	shatter			quartz	0%		2 (<1"-1/2")	2.6		9/19/2014
16	1	ST 113EN5	cmbs	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	9		9/19/2014
16	1	ST 113EN5	cmbs	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	18		9/19/2014
17.1	1	ST 114ES5	cmbs	Lithic	debris	nonbifacial			basaltic	50-<100%		3 (<1/2"-1/4")	1.2		9/19/2014
18.1	1	ST 115EN5	cmbs	Lithic	debris	broken flake			unidentified material	0%		3 (<1/2"-1/4")	0.3		9/19/2014
19.1	1	ST 115ES5	cmbs	Lithic	debris	nonbifacial			Lake Superior Agate	0%	heat treated	3 (<1/2"-1/4")	0.2		9/19/2014
20.1	1	ST 117EN8	cmbs	Lithic	debris	bipolar flake			quartz	0%		3 (<1/2"-1/4")	0.9		9/19/2014
20.2	1	ST 117EN8	cmbs	Lithic	debris	broken flake			basaltic	0%		3 (<1/2"-1/4")	0.8		9/19/2014
20	1	ST 117EN8	cmbs	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	10		9/19/2014
20	1	ST 117EN8	cmbs	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	3		9/19/2014
21.1	1	ST 121ES5	cmbs	Lithic	debris	broken flake			basaltic	0%		3 (<1/2"-1/4")	0.6		9/19/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
21.2	1	ST 121ES5	cmbs	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.2		9/19/2014
22.1	1	ST 59WN7	cmbs	Lithic	tool	patterned flake	side scraper	nonbifacial	Tongue River Silica	0%		3 (<1/2"-1/4")	2.1	finished, whole	9/22/2014
22	1	ST 59WN7	cmbs	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	17		9/22/2014
23.1	1	ST 61WN15	cmbs	Lithic	debris	shatter			quartz	>0-<50%		2 (<1"-1/2")	3.8		9/22/2014
24.1	1	ST 65WN9	cmbs	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.5		9/22/2014
24.2	1	ST 65WN9	cmbs	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	1.2		9/22/2014
25.1	1	ST 66WS8	cmbs	Lithic	debris	nonbifacial			basaltic	50-<100%		3 (<1/2"-1/4")	1.3		9/19/2014
25.2	1	ST 66WS8	cmbs	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.7		9/19/2014
25.3	1	ST 66WS8	cmbs	Lithic	debris	shatter			quartz	0%		3 (<1/2"-1/4")	1.7		9/19/2014
25.4	1	ST 66WS8	cmbs	Lithic	debris	shatter			quartz	>0-<50%		2 (<1"-1/2")	2.9		9/19/2014
26.1	1	ST 67WS8	cmbs	Lithic	debris	nonbifacial			quartz	100%		3 (<1/2"-1/4")	0.7		9/19/2014
26.2	1	ST 67WS8	cmbs	Lithic	debris	broken flake			basaltic	0%		3 (<1/2"-1/4")	0.7		9/19/2014
27.1	1	ST 68WN7	cmbs	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.7		9/19/2014
27.2	1	ST 68WN7	cmbs	Lithic	debris	shatter			quartz	0%		3 (<1/2"-1/4")	1.8		9/19/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
28.1	1	ST 70WN5	cmbs	Lithic	tool	unpatterned flake	utilized flake	broken	Hudson Bay Lowland Chert	0%		3 (<1/2"-1/4")	0.4	broken/ worn out, medial	9/22/2014
28.2	1	ST 70WN5	cmbs	Lithic	debris	nonbifacial			basaltic	0%		2 (<1"-1/2")	3.7		9/22/2014
28	1	ST 70WN5	cmbs	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	15		9/22/2014
29.1	1	ST 73WS5	cmbs	Lithic	debris	other G4 flake			rhyolite	0%		4 (<1/4")	0.3		9/21/2014
29	1	ST 73WS5	cmbs	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	34		9/21/2014
30.1	1	XU 1	cmbd	Lithic	debris	nonbifacial			rhyolite	50-<100%		3 (<1/2"-1/4")	2.2		9/25/2014
30	1	XU 1	cmbd	Lithic	fire-cracked rock	angular			quartzite			0 (<4"-2")	214		9/25/2014
30	1	XU 1	cmbd	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	20		9/25/2014
30	4	XU 1	cmbd	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	222		9/25/2014
30	1	XU 1	cmbd	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	7		9/25/2014
30	3	XU 1	cmbd	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	5		9/25/2014
30	3	XU 1	cmbd	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	218		9/25/2014
30	1	XU 1	cmbd	Lithic	fire-cracked rock	spall			basaltic			1 (<2"-1")	14		9/25/2014
30	1	XU 1	cmbd	Lithic	fire-cracked rock	angular/spall			quartzite			1 (<2"-1")	32		9/25/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
30	1	XU 1	cmbd	Lithic	fire-cracked rock	cobble with spall			quartzite			1 (<2"-1")	250		9/25/2014
30	1	XU 1	cmbd	Lithic	fire-cracked rock	cobble with angular			granitic			0 (<4"-2")	387		9/25/2014
30	1	XU 1	cmbd	Lithic	fire-cracked rock	cobble (non-friable)			granitic			0 (<4"-2")	446		9/25/2014
31.1	1	XU 1	cmbd	Lithic	debris	decortication			Animikie Silica	100%		3 (<1/2"-1/4")	0.7		9/25/2014
31.2	1	XU 1	cmbd	Lithic	debris	broken flake			Knife Lake Siltstone	0%		3 (<1/2"-1/4")	0.2		9/25/2014
31	1	XU 1	cmbd	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	42		9/25/2014
32.1	1	XU 3	cmbs	Lithic	core	bipolar (not rotated)			quartz	>0-<50%		2 (<1"-1/2")	12.6		9/24/2014
32.2	1	XU 3	cmbs	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	0.8		9/24/2014
32.3	1	XU 3	cmbs	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.3		9/24/2014
32	1	XU 3	cmbs	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	126		9/24/2014
33.1	1	XU 3	cmbs	Lithic	debris	shatter			quartz	0%		2 (<1"-1/2")	6.6		9/24/2014
34.1	1	XU 3	cmbs	Lithic	debris	nonbifacial			unidentified material	>0-<50%		3 (<1/2"-1/4")	0.2	NW 1/4	9/25/2014
34.2	1	XU 3	cmbs	Lithic	debris	other G4 flake			Gunflint Silica	0%		4 (<1/4")	0.1	NW 1/4	9/25/2014
34.3	1	XU 3	cmbs	Lithic	debris	other G4 flake			Tongue River Silica	0%	heat treated	4 (<1/4")	0	NW 1/4	9/25/2014
34.4-6	3	XU 3	cmbs	Lithic	debris	other G4 flake			Swan River Chert	0%	heat treated	4 (<1/4")	0.2	NW 1/4	9/25/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
34.7-9	3	XU 3	cmbs	Lithic	debris	other G4 flake			quartzite	0%		4 (<1/4")	0.2	NW 1/4	9/25/2014
34.1	1	XU 3	cmbs	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.1	NW 1/4	9/25/2014
35.1	1	XU 3	cmbs	Lithic	debris	nonbifacial			Swan River Chert	0%	heat treated	2 (<1"-1/2")	2.6	NW 1/4	9/25/2014
35.2	1	XU 3	cmbs	Lithic	debris	bifacial shaping			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	0.2	NW 1/4	9/25/2014
35.3	1	XU 3	cmbs	Lithic	debris	bifacial shaping			Swan River Chert	0%	heat treated	4 (<1/4")	0.1	NW 1/4	9/25/2014
35.4	1	XU 3	cmbs	Lithic	debris	other G4 flake			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	0.1	NW 1/4	9/25/2014
36.9	1	XU 4	cmbs	Lithic	tool	patterned bifacial	unfinished biface, stage 4		Tongue River Silica	0%		2 (<1"-1/2")	9.7	unfinished, whole	9/25/2014
36.1	1	XU 4	cmbs	Lithic	debris	bifacial thinning			Tongue River Silica	>0-<50%		2 (<1"-1/2")	4.1		9/25/2014
36.2	1	XU 4	cmbs	Lithic	debris	bipolar flake			quartz	100%		3 (<1/2"-1/4")	0.8		9/25/2014
36.3	1	XU 4	cmbs	Lithic	debris	bipolar flake			quartzite	50-<100%		2 (<1"-1/2")	4.9		9/25/2014
36.4	1	XU 4	cmbs	Lithic	debris	decortication			quartzite	100%		3 (<1/2"-1/4")	0.7		9/25/2014
36.5	1	XU 4	cmbs	Lithic	debris	decortication			Swan River Chert	50-<100%	heat treated	2 (<1"-1/2")	2.4		9/25/2014
36.6	1	XU 4	cmbs	Lithic	debris	decortication			quartz	100%		3 (<1/2"-1/4")	0.6		9/25/2014
36.7	1	XU 4	cmbs	Lithic	debris	bifacial thinning			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	0.8		9/25/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
36.8	1	XU 4	cmbs	Lithic	debris	broken flake			Swan River Chert	100%	heat treated	3 (<1/2"-1/4")	0.2		9/25/2014
36	1	XU 4	cmbs	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	30		9/25/2014
37.1	1	XU 4	cmbs	Lithic	debris	decortication			Tongue River Silica	100%	heat treated	2 (<1"-1/2")	7.6		9/25/2014
37.2	1	XU 4	cmbs	Lithic	debris	nonbifacial			Knife Lake Siltstone	0%		2 (<1"-1/2")	8.6		9/25/2014
37.3	1	XU 4	cmbs	Lithic	debris	nonbifacial			Tongue River Silica	100%	heat treated	3 (<1/2"-1/4")	0.4		9/25/2014
37.4	1	XU 4	cmbs	Lithic	debris	nonbifacial			Tongue River Silica	50-<100%	heat treated	3 (<1/2"-1/4")	0.5		9/25/2014
37.5	1	XU 4	cmbs	Lithic	debris	bifacial thinning			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	0.3		9/25/2014
37.6	1	XU 4	cmbs	Lithic	debris	broken flake			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	0.3		9/25/2014
37.7	1	XU 4	cmbs	Lithic	debris	broken flake			Tongue River Silica	>0-<50%	heat treated	3 (<1/2"-1/4")	0.4		9/25/2014
37.8	1	XU 4	cmbs	Lithic	debris	broken flake			Swan River Chert	0%	heat treated	2 (<1"-1/2")	1.7		9/25/2014
37.9-11	3	XU 4	cmbs	Lithic	debris	broken flake			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	3.4		9/25/2014
37.12-13	2	XU 4	cmbs	Lithic	debris	other G4 flake			Swan River Chert	0%	heat treated	4 (<1/4")	0.1		9/25/2014
37	1	XU 4	cmbs	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	115		9/25/2014
38.1	1	XU 4	cmbs	Lithic	core	freehand nonbifacial	unpatterned (multi-directional)	unprepared	Lake Superior Agate	>0-<50%		1 (<2"-1")	46.5		9/24/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
38.2	1	XU 4	cmbs	Lithic	core	freehand nonbifacial	unpatterned (multi-directional)	unprepared	Tongue River Silica	>0-<50%	heat treated	2 (<1"-1/2")	16.5		9/24/2014
38.3	1	XU 4	cmbs	Lithic	debris	decortication			Tongue River Silica	100%	heat treated	3 (<1/2"-1/4")	1.1		9/24/2014
38.4	1	XU 4	cmbs	Lithic	debris	decortication			Tongue River Silica	50-<100%	heat treated	2 (<1"-1/2")	2.2		9/24/2014
38.5	1	XU 4	cmbs	Lithic	debris	decortication			Tongue River Silica	50-<100%	heat treated	3 (<1/2"-1/4")	0.2		9/24/2014
38.6-7	2	XU 4	cmbs	Lithic	debris	bifacial thinning			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	0.4		9/24/2014
38.8	1	XU 4	cmbs	Lithic	debris	bifacial thinning			Tongue River Silica	0%	heat treated	4 (<1/4")	0.2		9/24/2014
38.9	1	XU 4	cmbs	Lithic	debris	bifacial thinning			Tongue River Silica	>0-<50%	heat treated	2 (<1"-1/2")	1.9		9/24/2014
38.10	1	XU 4	cmbs	Lithic	debris	bifacial thinning			Swan River Chert	0%	heat treated	2 (<1"-1/2")	2		9/24/2014
38.11-12	2	XU 4	cmbs	Lithic	debris	bifacial thinning			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	3.3		9/24/2014
38.13-15	3	XU 4	cmbs	Lithic	debris	broken flake			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	1		9/24/2014
38.16-17	2	XU 4	cmbs	Lithic	debris	other G4 flake			Tongue River Silica	0%	heat treated	4 (<1/4")	0.2		9/24/2014
38.18	1	XU 4	cmbs	Lithic	debris	broken flake			Tongue River Silica	>0-<50%	heat treated	3 (<1/2"-1/4")	0.5		9/24/2014
38.19	1	XU 4	cmbs	Lithic	debris	broken flake			unidentified material	0%		3 (<1/2"-1/4")	0.2		9/24/2014
38.20-21	2	XU 4	cmbs	Lithic	debris	other G4 flake			Swan River Chert	0%	heat treated	4 (<1/4")	0.1		9/24/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
38.22	1	XU 4	cmbs	Lithic	debris	shatter			Tongue River Silica	0%	heat treated	3 (<1/2"-1/4")	0.7		9/24/2014
38	1	XU 4	cmbs	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	2		9/24/2014
39.1	1	XU 4	cmbs	Lithic	debris	bipolar flake			Tongue River Silica	50-<100%	heat treated	2 (<1"-1/2")	3.6		9/24/2014
39.2	1	XU 4	cmbs	Lithic	debris	broken flake			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	0.4		9/24/2014
39.3	1	XU 4	cmbs	Lithic	debris	shatter			Lake Superior Agate	50-<100%		3 (<1/2"-1/4")	1.8		9/24/2014
39	2	XU 4	cmbs	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	130		9/24/2014
40.1	1	XU 4	cmbs	Lithic	core	freehand nonbifacial	unpatterned (multi-directional)	unprepared	Tongue River Silica	>0-<50%	heat treated	2 (<1"-1/2")	7		9/24/2014
40	1	XU 4	cmbs	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	235		9/24/2014
41.1	1	XU 5	cmbs	Lithic	debris	bipolar flake			basaltic	0%		3 (<1/2"-1/4")	4.9		9/25/2014
41.2	1	XU 5	cmbs	Lithic	debris	bipolar flake			quartz	0%		3 (<1/2"-1/4")	1.6		9/25/2014
41.3	1	XU 5	cmbs	Lithic	debris	decortication			quartz	100%		3 (<1/2"-1/4")	0.9		9/25/2014
41.4	1	XU 5	cmbs	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.1		9/25/2014
41.5	1	XU 5	cmbs	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.1		9/25/2014
41.6	1	XU 5	cmbs	Lithic	debris	shatter			quartz	>0-<50%		3 (<1/2"-1/4")	0.8		9/25/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
41.7	1	XU 5	cmbs	Lithic	debris	shatter			quartz	0%		3 (<1/2"-1/4")	1.4		9/25/2014
41	1	XU 5	cmbs	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	31		9/25/2014
42.1	1	XU 5	cmbs	Lithic	debris	bifacial thinning			Swan River Chert	0%	heat treated	2 (<1"-1/2")	2.4		9/25/2014
42.2	1	XU 5	cmbs	Lithic	debris	nonbifacial			Swan River Chert	50-<100%	heat treated	3 (<1/2"-1/4")	0.9		9/25/2014
42.3	1	XU 5	cmbs	Lithic	debris	broken flake			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	0.9		9/25/2014
42	1	XU 5	cmbs	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	6		9/25/2014
42	1	XU 5	cmbs	Lithic	fire-cracked rock	spall			basaltic			3 (<1/2"-1/4")	1		9/25/2014
43.1	1	XU 5	cmbs	Lithic	core	freehand nonbifacial	unpatterned (multi-directional)	unprepared	Tongue River Silica	>0-<50%	heat treated	1 (<2"-1")	42		9/25/2014
43.2	1	XU 5	cmbs	Lithic	debris	decortication			Swan River Chert	50-<100%	heat treated	2 (<1"-1/2")	5.7		9/25/2014
43.3-4	2	XU 5	cmbs	Lithic	debris	broken flake			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	1		9/25/2014
44.1	1	XU 5	cmbs	Lithic	debris	broken flake			Swan River Chert	0%	heat treated	3 (<1/2"-1/4")	0.3	NW 1/4	9/25/2014
44.2-3	2	XU 5	cmbs	Lithic	debris	other G4 flake			Swan River Chert	0%	heat treated	4 (<1/4")	0.4	NW 1/4	9/25/2014
44.4	1	XU 5	cmbs	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.1	NW 1/4	9/25/2014
45.1	1	XU 7	cmbs	Lithic	debris	decortication			Swan River Chert	50-<100%	probably heat treated	2 (<1"-1/2")	1.6		11/10/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
46.1	1	XU 7	cmbs	Lithic	debris	broken flake			quartzite	>0-<50%		3 (<1/2"-1/4")	0.4		11/10/2014
47.1	1	XU 8	cmbs	Lithic	core	bipolar (not rotated)			quartz	0%		2 (<1"-1/2")	4.2		11/10/2014
47.2	1	XU 8	cmbs	Lithic	debris	nonbifacial			quartzite	0%	probably heat treated	2 (<1"-1/2")	2.7		11/10/2014
48.1	1	XU 9	cmbs	Lithic	debris	bipolar flake			quartzite	0%		2 (<1"-1/2")	4		11/12/2014
48.2	1	XU 9	cmbs	Lithic	debris	bipolar flake			quartz	0%		4 (<1/4")	0.3		11/12/2014
48.3	1	XU 9	cmbs	Lithic	debris	bifacial thinning			Knife Lake Siltstone	0%		3 (<1/2"-1/4")	0.6		11/12/2014
48.4	1	XU 9	cmbs	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.2		11/12/2014
48.5-7	3	XU 9	cmbs	Lithic	debris	shatter			quartz	0%		3 (<1/2"-1/4")	2.9		11/12/2014
49.1	1	XU 9	cmbs	Lithic	debris	bifacial thinning			Knife Lake Siltstone	0%		2 (<1"-1/2")	1.8		11/12/2014
49.2-4	3	XU 9	cmbs	Lithic	debris	bifacial thinning			Knife Lake Siltstone	0%		3 (<1/2"-1/4")	1.6		11/12/2014
49.5	1	XU 9	cmbs	Lithic	debris	bifacial thinning			Knife Lake Siltstone	0%		4 (<1/4")	0.1		11/12/2014
49.6	1	XU 9	cmbs	Lithic	debris	edge preparation			chalcedony	0%		3 (<1/2"-1/4")	0.3		11/12/2014
49.7	1	XU 9	cmbs	Lithic	debris	broken flake			Knife Lake Siltstone	0%		3 (<1/2"-1/4")	0.3		11/12/2014
49.8	1	XU 9	cmbs	Lithic	debris	other G4 flake			Knife Lake Siltstone	0%		4 (<1/4")	0		11/12/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
50.1-2	2	XU 9	cmbs	Lithic	debris	bifacial thinning			Knife Lake Siltstone	0%		2 (<1"-1/2")	1.1		11/12/2014
51.1	1	XU 10	cmbs	Lithic	debris	bipolar flake			quartz	0%		3 (<1/2"-1/4")	1		11/12/2014
51.2	1	XU 10	cmbs	Lithic	debris	bipolar flake			quartz	100%		3 (<1/2"-1/4")	1.5		11/12/2014
52.1	1	XU 10	cmbs	Lithic	tool	unpatterned flake	graver	blade	unidentified material	0%		2 (<1"-1/2")	7	finnished, whole	11/12/2014
52.2	1	XU 10	cmbs	Lithic	debris	nonbifacial			quartz	100%		3 (<1/2"-1/4")	0.4		11/12/2014
52.3	1	XU 10	cmbs	Lithic	debris	nonbifacial			quartz	100%		4 (<1/4")	0.2		11/12/2014
52.4	1	XU 10	cmbs	Lithic	debris	bifacial thinning			Knife Lake Siltstone	0%		3 (<1/2"-1/4")	1.3		11/12/2014
52.5	1	XU 10	cmbs	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	0.3		11/12/2014
52.6	1	XU 10	cmbs	Lithic	debris	broken flake			quartz	>0-<50%		3 (<1/2"-1/4")	0.6		11/12/2014
52.7	1	XU 10	cmbs	Lithic	debris	broken flake			unidentified material	0%		3 (<1/2"-1/4")	1.2		11/12/2014
52.8	1	XU 10	cmbs	Lithic	debris	shatter			quartzite	>0-<50%		3 (<1/2"-1/4")	1		11/12/2014
52.9-11	3	XU 10	cmbs	Lithic	debris	shatter			quartz	0%		3 (<1/2"-1/4")	4.5		11/12/2014
52	1	XU 10	cmbs	Lithic	fire-cracked rock	angular/spall			quartzite			2 (<1"-1/2")	2		11/12/2014
52	1	XU 10	cmbs	Lithic	fire-cracked rock	spall			basaltic			3 (<1/2"-1/4")	5		11/12/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
53.10	1	FEAT 1	cmbd	Botanical	nut	nut						4 (<1/4")	0	XU 2; 1/2 nutmeat, probably from acorn or hazelnut; charred	11/12/2014
53.11	1	FEAT 1	cmbd	Botanical	undetermined	organic material						4 (<1/4")	0	XU 2; 1 small flat speciman with hard, resinous interior; appears charred	11/12/2014
53.12	1	FEAT 1	cmbd	Botanical	seed	seed						4 (<1/4")	0	XU 2; cf. Cruciferae (mustard family); appears charred, but too eroded	11/12/2014
53.13	1	FEAT 1	cmbd	Botanical	wood charcoal	charcoal						4 (<1/4")	0	XU 2; medium size charcoal sample	11/12/2014
53.1	1	FEAT 1	cmbd	Lithic	debris	bifacial shaping			Swan River Chert	0%	heat treated	4 (<1/4")	0.1	XU 2; Heavy Fraction	11/12/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
53.2	1	FEAT 1	cmbd	Lithic	debris	other G4 flake			Tongue River Silica	0%	heat treated	4 (<1/4")	0.1	XU 2; Heavy Fraction	11/12/2014
53.3	1	FEAT 1	cmbd	Lithic	debris	broken flake			quartzite	>0-<50%		3 (<1/2"-1/4")	0.2	XU 2; Heavy Fraction	11/12/2014
53.4	1	FEAT 1	cmbd	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	0.6	XU 2; Heavy Fraction	11/12/2014
53.5	1	FEAT 1	cmbd	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.6	XU 2;Heavy Fraction	11/12/2014
53.6-8	3	FEAT 1	cmbd	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.1	XU 2; Heavy Fraction	11/12/2014
53.9	1	FEAT 1	cmbd	Lithic	debris	nonbifacial			quartzite	0%		2 (<1"-1/2")	2.3	XU 2; Heavy Fraction	11/12/2014
53	1	FEAT 1	cmbd	Lithic	fire-cracked rock	angular			igneous			3 (<1/2"-1/4")	1	XU 2; Heavy Fraction	11/12/2014
53	1	FEAT 1	cmbd	Lithic	fire-cracked rock	angular			quartzite			3 (<1/2"-1/4")	1.2	XU 2; Heavy Fraction	11/12/2014
53	3	FEAT 1	cmbd	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	16.5	XU 2; Heavy Fraction	11/12/2014
53	1	FEAT 1	cmbd	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	0.1	XU 2; Heavy Fraction	11/12/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
53	1	FEAT 1	cmbd	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	25	XU 2; Heavy Fraction	11/12/2014
53	1	FEAT 1	cmbd	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	37.9	XU 2; Heavy Fraction	11/12/2014
53	2	FEAT 1	cmbd	Lithic	fire-cracked rock	angular/spall			unidentified material			3 (<1/2"-1/4")	2.8	XU 2; Heavy Fraction	11/12/2014
53	6	FEAT 1	cmbd	Lithic	fire-cracked rock	angular/spall			unidentified material			2 (<1"-1/2")	87.9	XU 2; Heavy Fraction	11/12/2014
53	4	FEAT 1	cmbd	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	25.1	XU 2; Heavy Fraction	11/12/2014
53	4	FEAT 1	cmbd	Lithic	fire-cracked rock	spall			basaltic			3 (<1/2"-1/4")	4.6	XU 2; Heavy Fraction	11/12/2014
53	3	FEAT 1	cmbd	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	185.3	XU 2; Heavy Fraction	11/12/2014
53	1	FEAT 1	cmbd	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	3.4	XU 2; Heavy Fraction	11/12/2014
53	139	FEAT 1	cmbd	Lithic	fire-cracked rock	crumb			granitic			2 (<1"-1/2")	50.2	XU 2; Heavy Fraction	11/12/2014
53	1	FEAT 1	cmbd	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	28.9	XU 2; Heavy Fraction	11/12/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
53	7	FEAT 1	cmbd	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	70	XU 2; Heavy Fraction	11/12/2014
53	2	FEAT 1	cmbd	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	269.7	XU 2; Heavy Fraction	11/12/2014
53	1	FEAT 1	cmbd	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	19.4	XU 2; Heavy Fraction	11/12/2014
53	4	FEAT 1	cmbd	Lithic	fire-cracked rock	friable rounded piece			granitic			2 (<1"-1/2")	27.8	XU 2; Heavy Fraction	11/12/2014
53	1	FEAT 1	cmbd	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	66.5	XU 2;Heavy Fraction	11/12/2014
53	2	FEAT 1	cmbd	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	10.1	XU 2; Heavy Fraction	11/12/2014
53	2	FEAT 1	cmbd	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	4.9	XU 2; Heavy Fraction	11/12/2014
53	1	FEAT 1	cmbd	Lithic	fire-cracked rock	split cobble			granitic			1 (<2"-1")	151.6	XU 2	11/12/2014
54.1	1	FEAT 1	cmbd	Botanical	wood charcoal	charcoal						4 (<1/4")	1	XU 2; Beta	11/12/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
55.1	1	FEAT 1	cmbd	Botanical	seed	seed						4 (<1/4")	0	Feature 1 extension; seed embryo, possibly charred, unidentifiable	11/12/2014
55.2	1	FEAT 1	cmbd	Botanical	wood charcoal	charcoal						4 (<1/4")	0	Feature 1 extension; very small amount	11/12/2014
906	1	ST 102ES15	cmbs	Lithic	fire-cracked rock	angular			unidentified material			0 (<4"-2")	314		9/21/2014
906	1	ST 102ES15	cmbs	Lithic	fire-cracked rock	angular/spall			unidentified material			2 (<1"-1/2")	11		9/21/2014
907	5	ST 103EN5	cmbs	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	361		9/21/2014
907	2	ST 103EN5	cmbs	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	11		9/21/2014
907	1	ST 103EN5	cmbs	Lithic	fire-cracked rock	angular			basaltic			3 (<1/2"-1/4")	2		9/21/2014
908	2	ST 103ES10	cmbs	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	31		9/21/2014
908	1	ST 103ES10	cmbs	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	18		9/21/2014
909	1	ST 113ES5	cmbs	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	14		9/19/2014
910	1	ST 59WN7	cmbs	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	13		9/22/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
911	1	ST 59WS5	cmbs	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	23		9/22/2014
912	2	ST 60WN7	cmbs	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	206		9/22/2014
913	7	XU 1	cmbd	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	367		9/24/2014
913	12	XU 1	cmbd	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	149		9/24/2014
913	2	XU 1	cmbd	Lithic	fire-cracked rock	angular			basaltic			3 (<1/2"-1/4")	3		9/24/2014
913	9	XU 1	cmbd	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	545		9/24/2014
913	5	XU 1	cmbd	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	64		9/24/2014
913	3	XU 1	cmbd	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	161		9/24/2014
913	2	XU 1	cmbd	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	34		9/24/2014
913	2	XU 1	cmbd	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	55		9/24/2014
913	4	XU 1	cmbd	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	47		9/24/2014
913	1	XU 1	cmbd	Lithic	fire-cracked rock	angular			unidentified material			3 (<1/2"-1/4")	3		9/24/2014
913	1	XU 1	cmbd	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	6		9/24/2014
913	1	XU 1	cmbd	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	3		9/24/2014
913	2	XU 1	cmbd	Lithic	fire-cracked rock	cobble (friable)			quartzite			1 (<2"-1")	167		9/24/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
913	1	XU 1	cmbd	Lithic	fire-cracked rock	friable rounded piece			quartzite			1 (<2"-1")	23		9/24/2014
913	4	XU 1	cmbd	Lithic	fire-cracked rock	friable rounded piece			quartzite			2 (<1"-1/2")	57		9/24/2014
913	1	XU 1	cmbd	Lithic	fire-cracked rock	friable rounded piece			quartzite			3 (<1/2"-1/4")	1		9/24/2014
913	1	XU 1	cmbd	Lithic	fire-cracked rock	crumb			granitic			3 (<1/2"-1/4")	1		9/24/2014
914	4	XU 2	cmbd	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	187		9/24/2014
914	1	XU 2	cmbd	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	3		9/24/2014
914	1	XU 2	cmbd	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	35		9/24/2014
914	2	XU 2	cmbd	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	10		9/24/2014
914	3	XU 2	cmbd	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	99		9/24/2014
914	2	XU 2	cmbd	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	16		9/24/2014
914	1	XU 2	cmbd	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	3		9/24/2014
914	1	XU 2	cmbd	Lithic	fire-cracked rock	angular			granitic			4 (<1/4")	1		9/24/2014
914	1	XU 2	cmbd	Lithic	fire-cracked rock	spall			unidentified material			3 (<1/2"-1/4")	2		9/24/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
914	3	XU 2	cmbd	Lithic	fire-cracked rock	spall			basaltic			1 (<2"-1")	94		9/24/2014
914	3	XU 2	cmbd	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	11		9/24/2014
914	1	XU 2	cmbd	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	9		9/24/2014
914	1	XU 2	cmbd	Lithic	fire-cracked rock	spall			quartzite			1 (<2"-1")	34		9/24/2014
914	1	XU 2	cmbd	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	1		9/24/2014
914	1	XU 2	cmbd	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	75		9/24/2014
914	1	XU 2	cmbd	Lithic	fire-cracked rock	angular/spall			basaltic			2 (<1"-1/2")	8		9/24/2014
914	1	XU 2	cmbd	Lithic	fire-cracked rock	cobble with spall			granitic			0 (<4"-2")	251		9/24/2014
914	1	XU 2	cmbd	Lithic	fire-cracked rock	cobble (non-friable)			granitic			0 (<4"-2")	202		9/24/2014
914	1	XU 2	cmbd	Lithic	fire-cracked rock	cobble (friable)			quartzite			0 (<4"-2")	227		9/24/2014
914	1	XU 2	cmbd	Lithic	fire-cracked rock	friable rounded piece			quartzite			2 (<1"-1/2")	15		9/24/2014
915	1	XU 2	cmbd	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	96		9/25/2014
915	2	XU 2	cmbd	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	24		9/25/2014
916	2	FEAT 1	cmbd	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	225	XU 2	9/25/2014

Prov #	Count	Location	Depth Type	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
916	2	FEAT 1	cmbd	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	45	XU 2	9/25/2014
916	1	FEAT 1	cmbd	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	11	XU 2	9/25/2014
916	1	FEAT 1	cmbd	Lithic	fire-cracked rock	angular			basaltic			3 (<1/2"-1/4")	2	XU 2	9/25/2014
916	1	FEAT 1	cmbd	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	8	XU 2	9/25/2014
916	1	FEAT 1	cmbd	Lithic	fire-cracked rock	angular/spall			quartzite			1 (<2"-1")	50	XU 2	9/25/2014
917	1	XU 8	cmbs	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	4		11/10/2014
918	1	XU 11	cmbs	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	22		11/12/2014
919	1	XU 12	cmbs	Lithic	fire-cracked rock	angular			granitic			0 (<4"-2")	326		11/12/2014
919	1	XU 12	cmbs	Lithic	fire-cracked rock	angular/spall			quartzite			1 (<2"-1")	44		11/12/2014
920	1	XU 12	cmbs	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	16		11/12/2014
921	1	XU 12	cmbs	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	12		11/12/2014

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Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
1.1	1	ST 173E	0-30	Faunal	cf. Bos tarus (cow)	vertebra	fragment					1 (<2"-1")	21.9		9/12/2014
2.1	1	ST 139E	0-30	Lithic	debris	broken flake			rhyolite	>0-<50%		3 (<1/2"-1/4")	0.5		9/10/2014
3.1	1	ST 143E	20-40	Lithic	debris	bipolar flake			quartz	50-<100%		3 (<1/2"-1/4")	1.5		9/10/2014
4.1	1	ST 146E	0-30	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.3		9/10/2014
5.1	1	ST 142E	0-30	Lithic	debris	nonbifacial			quartzite	0%		2 (<1"-1/2")	1.8		9/11/2014
5.2	1	ST 142E	0-30	Lithic	debris	nonbifacial			quartzite	0%		3 (<1/2"-1/4")	2.1		9/11/2014
5.3	1	ST 142E	0-30	Lithic	debris	nonbifacial			quartzite	>0-<50%		2 (<1"-1/2")	5.6		9/11/2014
6.1	1	ST 151E	0-30	Lithic	debris	bipolar flake			quartz	0%		4 (<1/4")	0.4		9/11/2014
6.2	1	ST 151E	0-30	Lithic	debris	nonbifacial			quartzite	>0-<50%		2 (<1"-1/2")	2.8		9/11/2014
6.3	1	ST 151E	0-30	Lithic	debris	broken flake			rhyolite	0%		3 (<1/2"-1/4")	0.7		9/11/2014
7.1	1	ST 152E	0-30	Lithic	debris	bipolar flake			quartz	0%		3 (<1/2"-1/4")	0.8		9/11/2014
8.1	1	ST 153E	30-60	Lithic	debris	bipolar flake			quartz	0%		3 (<1/2"-1/4")	2.9		9/11/2014
8.2	1	ST 153E	30-60	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	1		9/11/2014
8.3-4	2	ST 153E	30-60	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.2		9/11/2014
9.1	1	ST 155E	0-30	Lithic	debris	other G4 flake			basaltic	0%		4 (<1/4")	0.1		9/11/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
10.1	1	ST 156E	0-30	Lithic	debris	shatter			quartz	0%		2 (<1"-1/2")	5.1		9/11/2014
11.1	1	ST 157E	0-30	Lithic	core	freehand nonbifacial	unpatterned (multi-directional)	unprepared	basaltic	>0-<50%		1 (<2"-1")	188		9/11/2014
11.2	1	ST 157E	0-30	Lithic	debris	nonbifacial			basaltic	0%		2 (<1"-1/2")	3.1		9/11/2014
12.1	1	ST 158E	0-30	Lithic	debris	bipolar flake			quartzite	>0-<50%		3 (<1/2"-1/4")	1.9		9/11/2014
12.2	1	ST 158E	0-30	Lithic	debris	nonbifacial			unidentified material	>0-<50%		2 (<1"-1/2")	4.5		9/11/2014
12.3	1	ST 158E	0-30	Lithic	debris	nonbifacial			quartzite	>0-<50%		3 (<1/2"-1/4")	1.1		9/11/2014
12.4	1	ST 158E	0-30	Lithic	debris	nonbifacial			quartz	>0-<50%		3 (<1/2"-1/4")	2.3		9/11/2014
12.5-6	2	ST 158E	0-30	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	0.8		9/11/2014
12.7	1	ST 158E	0-30	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.2		9/11/2014
12.8	1	ST 158E	0-30	Lithic	debris	broken flake			rhyolite	0%		3 (<1/2"-1/4")	0.2		9/11/2014
12.9-10	2	ST 158E	0-30	Lithic	debris	broken flake			basaltic	0%		3 (<1/2"-1/4")	0.4		9/11/2014
12.11	1	ST 158E	0-30	Lithic	debris	other G4 flake			basaltic	0%		4 (<1/4")	0.3		9/11/2014
12.12	1	ST 158E	0-30	Lithic	debris	shatter			chalcedony	0%		3 (<1/2"-1/4")	1.5		9/11/2014
12	1	ST 158E	0-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	6		9/11/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
13.1	1	ST 163E	0-30	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.5		9/11/2014
13.2	1	ST 163E	0-30	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.1		9/11/2014
14.1	1	ST 197E	0-30	Lithic	debris	decortication			Red River Chert	100%		3 (<1/2"-1/4")	1.4		9/12/2014
15.1	1	ST 177E	0-30	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	1		9/11/2014
16.1	1	ST 184E	20-40	Lithic	debris	nonbifacial			unidentified chert	>0-<50%	burned	2 (<1"-1/2")	5.3		9/11/2014
16.2	1	ST 184E	20-40	Lithic	debris	broken flake			Knife Lake Siltstone	0%		3 (<1/2"-1/4")	0.6		9/11/2014
17.1	1	ST 185E	20-40	Ceramic	body	grit temper	net impressed			residue present		1 (<2"-1")	16.1	5.9 mm	9/11/2014
18.1	1	ST 186E	0-20	Lithic	debris	decortication			basaltic	100%		2 (<1"-1/2")	8.2		9/11/2014
19.1	1	ST 187E	0-30	Lithic	debris	bipolar flake			quartz	50-<100%		3 (<1/2"-1/4")	0.8		9/11/2014
19.2	1	ST 187E	0-30	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.2		9/11/2014
20.1	1	ST 188E	0-20	Lithic	debris	broken flake			basaltic	0%		3 (<1/2"-1/4")	0.6		9/11/2014
21.1	1	ST 190E	0-30	Lithic	debris	decortication			basaltic	100%		2 (<1"-1/2")	4.2		9/12/2014
21.2	1	ST 190E	0-30	Lithic	debris	nonbifacial			quartzite	0%		3 (<1/2"-1/4")	1.8		9/12/2014
21.3	1	ST 190E	0-30	Lithic	debris	broken flake			unidentified material	0%		3 (<1/2"-1/4")	1.7		9/12/2014
22.1	1	ST 84W	0-30	Lithic	debris	decortication			basaltic	100%		3 (<1/2"-1/4")	3.3		9/11/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
22.2	1	ST 84W	0-30	Lithic	debris	nonbifacial			basaltic	>0-<50%		3 (<1/2"-1/4")	0.6		9/11/2014
22.3	1	ST 84W	0-30	Lithic	debris	broken flake			basaltic	0%		3 (<1/2"-1/4")	0.5		9/11/2014
23.1	1	ST 85W	0-20	Lithic	debris	bipolar flake			Knife Lake Siltstone	50-<100%		2 (<1"-1/2")	10.1		9/10/2014
23.2	1	ST 85W	0-20	Lithic	debris	decortication			basaltic	100%		3 (<1/2"-1/4")	1.9		9/10/2014
24.1	1	ST 87W	0-30	Lithic	debris	other G4 flake			unidentified chert	100%	heat treated	4 (<1/4")	0.1		9/10/2014
24	1	ST 87W	0-30	Lithic	fire-cracked rock	angular/spall			granitic			3 (<1/2"-1/4")	4		9/10/2014
25.1	1	ST 94W	0-30	Lithic	debris	bipolar flake			chalcedony	0%		2 (<1"-1/2")	4.7		9/10/2014
25.2	1	ST 94W	0-30	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	1.2		9/10/2014
26.1	1	ST 94W	30-80	Lithic	debris	decortication			unidentified chert	100%		3 (<1/2"-1/4")	1.4		9/10/2014
27.1	1	ST 131W	30-40	Lithic	debris	decortication			quartz	100%		3 (<1/2"-1/4")	1.7		9/11/2014
27	1	ST 131W	30-40	Lithic	fire-cracked rock	spall			granitic			0 (<4"-2")	167		9/11/2014
27	1	ST 131W	30-40	Lithic	fire-cracked rock	cobble with spall			granitic			0 (<4"-2")	284		9/11/2014
28.1	1	ST 132W	0-30	Lithic	debris	bipolar flake			quartz	100%		3 (<1/2"-1/4")	1.4		9/11/2014
28.2	1	ST 132W	0-30	Lithic	debris	nonbifacial			basaltic	0%		3 (<1/2"-1/4")	0.7		9/11/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
29.1	1	ST 139W	20-40	Lithic	debris	broken flake			chalcedony	>0-<50%		3 (<1/2"-1/4")	0.6		9/11/2014
30.1	1	ST 193E	0-30	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.8		9/12/2014
30.2	1	ST 193E	0-30	Lithic	debris	shatter			quartz	0%		3 (<1/2"-1/4")	2		9/12/2014
31.1	1	ST 196E	0-20	Lithic	debris	broken flake			basaltic	0%		2 (<1"-1/2")	8.2		9/12/2014
922	2	ST 141E	0-30	Lithic	fire-cracked rock	angular			granitic			0 (<4"-2")	465		9/10/2014
922	2	ST 141E	0-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	139		9/10/2014
923	2	ST 148E	0-30	Lithic	fire-cracked rock	angular/spall			unidentified material			1 (<2"-1")	55		9/11/2014
924	1	ST 159E	0-30	Lithic	fire-cracked rock	angular/spall			basaltic			2 (<1"-1/2")	2		9/11/2014
925	1	ST 178E	0-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	51		9/11/2014
925	1	ST 178E	0-30	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	10		9/11/2014
925	1	ST 178E	0-30	Lithic	fire-cracked rock	spall			basaltic			1 (<2"-1")	19		9/11/2014
925	1	ST 178E	0-30	Lithic	fire-cracked rock	spall			granitic			0 (<4"-2")	214		9/11/2014
925	1	ST 178E	0-30	Lithic	fire-cracked rock	spall			quartzite			1 (<2"-1")	77		9/11/2014
926	1	ST 178E	30-60	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	33		9/11/2014
927	1	ST 183E	0-20	Lithic	fire-cracked rock	spall			igneous			2 (<1"-1/2")	6		9/11/2014

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Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
1.1-2	2	ST 173EN3	0-30	Faunal	mammalian, medium/large	scapula	fragment		modern cut/saw marks			2 (<1"-1/2")	2		11/18/2014
1.3	1	ST 173EN3	0-30	Faunal	mammalian, large	unidentifiable	fragment					2 (<1"-1/2")	0.9		11/18/2014
1.4-8	5	ST 173EN3	0-30	Faunal	mammalian	unidentifiable	fragment					3 (<1/2"-1/4")	2.1		11/18/2014
2.1	1	ST 173EN5	0-30	Faunal	mammalian, large	unidentifiable	fragment					3 (<1/2"-1/4")	0.9		9/24/2014
3.1-2	2	XU 5B	10-20	Faunal	fish	unidentifiable	fragment					3 (<1/2"-1/4")	0.2		11/13/2014
3.3	1	XU 5B	10-20	Faunal	mammalian	unidentifiable	fragment					4 (<1/4")	0.1		11/13/2014
4.1	1	XU 15	20-30	Faunal	mammalian	unidentifiable	fragment	calcined				3 (<1/2"-1/4")	0.5		11/18/2014
4	1	XU 15	20-30	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	11		11/18/2014
5.1	1	ST 141EN10	0-30	Lithic	debris	broken flake			unidentified material	0%		3 (<1/2"-1/4")	1.5		9/23/2014
6.1	1	ST 144EN30	40-60	Lithic	debris	bipolar flake			quartz	100%		2 (<1"-1/2")	4.6		9/23/2014
6.2	1	ST 144EN30	40-60	Lithic	debris	nonbifacial			unidentified material	0%		3 (<1/2"-1/4")	2.4		9/23/2014
6.3	1	ST 144EN30	40-60	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.3		9/23/2014
7.1	1	ST 145ES30	0-30	Lithic	debris	bipolar flake			rhyolite	50-<100%		2 (<1"-1/2")	6.7		9/23/2014
7.2	1	ST 145ES30	0-30	Lithic	debris	bipolar flake			rhyolite	>0-<50%		2 (<1"-1/2")	7.3		9/23/2014
7.3	1	ST 145ES30	0-30	Lithic	debris	broken flake			quartz	50-<100%		3 (<1/2"-1/4")	0.4		9/23/2014

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Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
8.1-2	2	ST 145ES25 W4	20-40	Lithic	debris	bipolar flake			quartz	0%		3 (<1/2"-1/4")	3.5		9/23/2014
9.1	1	ST 146ES5	0-30	Lithic	debris	bipolar flake			Tongue River Silica	>0-<50%	heat treated	2 (<1"-1/2")	5.3		9/10/2014
9.2	1	ST 146ES5	0-30	Lithic	debris	bipolar flake			quartz	50-<100%		3 (<1/2"-1/4")	1.8		9/10/2014
9.3	1	ST 146ES5	0-30	Lithic	debris	decortication			chalcedony	100%		3 (<1/2"-1/4")	1.5		9/10/2014
9.4	1	ST 146ES5	0-30	Lithic	debris	broken flake			chalcedony	0%		3 (<1/2"-1/4")	0.4		9/10/2014
10.1	1	ST 146EN5	0-30	Lithic	debris	bipolar flake			quartz	0%		3 (<1/2"-1/4")	1.5		9/23/2014
11.1	1	ST 148ES5	0-30	Lithic	debris	bipolar flake			quartz	100%		2 (<1"-1/2")	4.5		9/23/2014
12.1	1	ST 151EN5	0-30	Lithic	debris	broken flake			granitic	>0-<50%		3 (<1/2"-1/4")	1		9/23/2014
12.2	1	ST 151EN5	0-30	Lithic	debris	shatter			quartz	0%		3 (<1/2"-1/4")	2		9/23/2014
13.1	1	ST 157ES5	0-30	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.7		9/23/2014
14.1	1	ST 177EN5	0-30	Lithic	debris	bipolar flake			basaltic	0%		2 (<1"-1/2")	12		9/23/2014
14.2	1	ST 177EN5	0-30	Lithic	debris	bipolar flake			quartzite	0%		2 (<1"-1/2")	2.9		9/23/2014
14.3	1	ST 177EN5	0-30	Lithic	debris	nonbifacial			basaltic	100%		3 (<1/2"-1/4")	1.6		9/23/2014
14.4	1	ST 177EN5	0-30	Lithic	debris	broken flake			quartzite	0%		2 (<1"-1/2")	2.4		9/23/2014

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Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
14.5	1	ST 177EN5	0-30	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	0.5		9/23/2014
14.6	1	ST 177EN5	0-30	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.2		9/23/2014
15.1	1	ST 177EN5	30-60	Lithic	debris	bipolar flake			quartz	>0-<50%		2 (<1"-1/2")	10.3		9/23/2014
16.1	1	ST 182EN10	0-30	Lithic	debris	nonbifacial			basaltic	>0-<50%		2 (<1"-1/2")	7.5		9/24/2014
16	1	ST 182EN10	0-30	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	37		9/24/2014
16	1	ST 182EN10	0-30	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	20		9/24/2014
16	1	ST 182EN10	0-30	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	6		9/24/2014
16	1	ST 182EN10	0-30	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	46		9/24/2014
17.1-3	3	ST 184EN5	0-30	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.9		9/24/2014
17.4	1	ST 184EN5	0-30	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.3		9/24/2014
18.1	1	ST 184EN10	20-40	Lithic	debris	bipolar flake			quartz	>0-<50%		2 (<1"-1/2")	5.7		11/18/2014
19.1	1	ST 186ES5	0-10	Lithic	debris	nonbifacial			quartzite	>0-<50%		2 (<1"-1/2")	4.6		9/24/2014
19.2	1	ST 186ES5	0-10	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.5		9/24/2014
20.1	1	ST 190EN5	0-30	Lithic	debris	bipolar flake			basaltic	>0-<50%		2 (<1"-1/2")	8.6		9/24/2014
21.1	1	ST 84WN5	0-30	Lithic	debris	broken flake			chalcedony	0%		3 (<1/2"-1/4")	0.6		9/23/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
21.2	1	ST 84WN5	0-30	Lithic	debris	broken flake			unidentified material	0%		3 (<1/2"-1/4")	0.3		9/23/2014
22.1	1	ST 85WS5	0-30	Lithic	debris	bipolar flake			quartz	0%		2 (<1"-1/2")	8.9		9/23/2014
22.2	1	ST 85WS5	0-30	Lithic	debris	broken flake			quartz	0%		2 (<1"-1/2")	3		9/23/2014
23.1	1	ST 94WN10	0-20	Lithic	debris	nonbifacial			quartz	0%		2 (<1"-1/2")	3.1		9/10/2014
24.1	1	ST 94WS5	0-30	Lithic	debris	nonbifacial			quartzite	0%		2 (<1"-1/2")	5		9/12/2014
24.2	1	ST 94WS5	0-30	Lithic	debris	shatter			basaltic	0%		2 (<1"-1/2")	3.3		9/12/2014
25.1	1	ST 132WN5	40-60	Lithic	debris	nonbifacial			basaltic	>0-<50%		2 (<1"-1/2")	1.6		9/24/2014
25.2	1	ST 132WN5	40-60	Lithic	debris	bipolar flake			rhyolite	100%		3 (<1/2"-1/4")	4		9/24/2014
25.3	1	ST 132WN5	40-60	Lithic	debris	bipolar flake			basaltic	0%		3 (<1/2"-1/4")	0.9		9/24/2014
25	1	ST 132WN5	40-60	Lithic	fire-cracked rock	angular/spall			basaltic			2 (<1"-1/2")	11		9/24/2014
26.1	1	ST 132WS5	0-30	Lithic	debris	other G4 flake			quartz	>0-<50%		4 (<1/4")	0.3		9/24/2014
27.1	1	ST 139WN5	0-30	Lithic	debris	broken flake			quartz	50-<100%		3 (<1/2"-1/4")	1.3		9/24/2014
28.1	1	XU 3A	0-10	Lithic	core	bipolar (not rotated)			quartz	>0-<50%		2 (<1"-1/2")	14.3		11/11/2014
29.1	1	XU 3A	10-20	Lithic	core	freehand nonbifacial	unpatterned (multi-directional)	unprepared	chalcedony	>0-<50%		1 (<2"-1")	55.9		11/11/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
29.2	1	XU 3A	10-20	Lithic	debris	bipolar flake			Tongue River Silica	100%	heat treated	3 (<1/2"-1/4")	3.3		11/11/2014
29	1	XU 3A	10-20	Lithic	fire-cracked rock	angular			quartzite			0 (<4"-2")	183		11/11/2014
29	1	XU 3A	10-20	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	32		11/11/2014
29	1	XU 3A	10-20	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	2		11/11/2014
29	2	XU 3A	10-20	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	77		11/11/2014
29	1	XU 3A	10-20	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	117		11/11/2014
29	1	XU 3A	10-20	Lithic	fire-cracked rock	angular			basaltic			3 (<1/2"-1/4")	2		11/11/2014
29	1	XU 3A	10-20	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	64		11/11/2014
29	1	XU 3A	10-20	Lithic	fire-cracked rock	angular/spall			quartzite			1 (<2"-1")	200		11/11/2014
30.1	1	XU 3B	0-10	Lithic	core	bipolar (not rotated)			quartz	>0-<50%		2 (<1"-1/2")	4.7		11/13/2014
30.2	1	XU 3B	0-10	Lithic	debris	bipolar flake			quartz	100%		3 (<1/2"-1/4")	1.1		11/13/2014
30.3	1	XU 3B	0-10	Lithic	debris	broken flake			basaltic	0%		3 (<1/2"-1/4")	0.6		11/13/2014
30.4	1	XU 3B	0-10	Lithic	debris	shatter			unidentified material	>0-<50%		2 (<1"-1/2")	15.6		11/13/2014
31.1	1	XU 3B	10-20	Lithic	debris	bipolar flake			quartzite	100%		2 (<1"-1/2")	6.7		11/13/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
31.2	1	XU 3B	10-20	Lithic	debris	bipolar flake			basaltic	>0-<50%		2 (<1"-1/2")	7.9		11/13/2014
31.3	1	XU 3B	10-20	Lithic	debris	nonbifacial			quartzite	>0-<50%		3 (<1/2"-1/4")	0.8		11/13/2014
31	1	XU 3B	10-20	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	11		11/13/2014
32.1	1	XU 4A	10-20	Lithic	debris	bipolar flake			quartz	0%		3 (<1/2"-1/4")	0.6		11/11/2014
32.2	1	XU 4A	10-20	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	0.7		11/11/2014
32	5	XU 4A	10-20	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	336		11/11/2014
32	1	XU 4A	10-20	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	10		11/11/2014
32	2	XU 4A	10-20	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	8		11/11/2014
32	1	XU 4A	10-20	Lithic	fire-cracked rock	spall			unidentified material			1 (<2"-1")	136		11/11/2014
32	1	XU 4A	10-20	Lithic	fire-cracked rock	spall			unidentified material			3 (<1/2"-1/4")	1		11/11/2014
33.3	1	XU 4B	0-10	Ceramic	rim	grit temper	smooth					2 (<1"-1/2")	7.5	5.0 mm at lip; 7.3 mm at neck	11/13/2014
33.1	1	XU 4B	0-10	Lithic	core	bipolar (not rotated)			quartz	0%		2 (<1"-1/2")	13.6		11/13/2014
33.2	1	XU 4B	0-10	Lithic	debris	shatter			quartz	0%		3 (<1/2"-1/4")	2.6		11/13/2014
34.1	1	XU 5A	0-10	Lithic	debris	broken flake			unidentified material	0%		3 (<1/2"-1/4")	1.1		11/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
34.2	1	XU 5A	0-10	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	0.8		11/19/2014
34	1	XU 5A	0-10	Lithic	fire-cracked rock	cobble with angular			granitic			0 (<4"-2")	1318		11/19/2014
35.1	1	XU 5A	10-20	Lithic	debris	bipolar flake			quartz	0%		3 (<1/2"-1/4")	2.1		11/19/2014
35	1	XU 5A	10-20	Lithic	fire-cracked rock	spall			quartzite			0 (<4"-2")	293		11/19/2014
35	1	XU 5A	10-20	Lithic	fire-cracked rock	spall			quartzite			1 (<2"-1")	20		11/19/2014
35	2	XU 5A	10-20	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	13		11/19/2014
35	1	XU 5A	10-20	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	2		11/19/2014
35	2	XU 5A	10-20	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	1		11/19/2014
35	2	XU 5A	10-20	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	114		11/19/2014
35	3	XU 5A	10-20	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	15		11/19/2014
35	1	XU 5A	10-20	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	2		11/19/2014
35	1	XU 5A	10-20	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	7		11/19/2014
35	2	XU 5A	10-20	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	5		11/19/2014
36.1	1	XU 6A	0-10	Lithic	debris	shatter			quartz	>0-<50%		3 (<1/2"-1/4")	2.2		11/18/2014
37	3	XU 6A	10-20	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	16		11/18/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
37	1	XU 6A	10-20	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	19		11/18/2014
37	2	XU 6A	10-20	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	8		11/18/2014
37.1	1	XU 6A	10-20	Lithic	debris	broken flake			quartz	>0-<50%		3 (<1/2"-1/4")	0.3		11/18/2014
38.1	1	XU 6B	10-20	Lithic	debris	other G4 flake			quartz	0%		4 (<1/4")	0.2		11/18/2014
38	1	XU 6B	10-20	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	6		11/18/2014
39.3	1	XU 7A	10-20	Botanical	bark	bark						2 (<1"-1/2")	0.8	burned	11/18/2014
39.1	1	XU 7A	10-20	Lithic	debris	bipolar flake			quartz	0%		3 (<1/2"-1/4")	0.4		11/18/2014
39.2	1	XU 7A	10-20	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	0.4		11/18/2014
39	1	XU 7A	10-20	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	37		11/18/2014
39	1	XU 7A	10-20	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	14		11/18/2014
39	1	XU 7A	10-20	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	2		11/18/2014
39	1	XU 7A	10-20	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	2		11/18/2014
39	5	XU 7A	10-20	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	25		11/18/2014
39	1	XU 7A	10-20	Lithic	fire-cracked rock	cobble (friable)			granitic			2 (<1"-1/2")	14		11/18/2014
40.1	1	XU 7B	10-20	Lithic	debris	bipolar flake			quartzite	50-<100%		3 (<1/2"-1/4")	2.7		11/14/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
40.2-3	2	XU 7B	10-20	Lithic	debris	nonbifacial			quartzite	>0-<50%		3 (<1/2"-1/4")	2.5		11/14/2014
40.4	1	XU 7B	10-20	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	0.7		11/14/2014
41.5	1	XU 7B	20-30	Ceramic	body	grit temper	cord marked					2 (<1"-1/2")	2.6	4.5 mm	11/14/2014
41.1	1	XU 7B	20-30	Lithic	debris	bipolar flake			quartzite	0%		3 (<1/2"-1/4")	2		11/14/2014
41.2	1	XU 7B	20-30	Lithic	debris	nonbifacial			quartz	50-<100%		3 (<1/2"-1/4")	1.1		11/14/2014
41.3	1	XU 7B	20-30	Lithic	debris	broken flake			quartz	100%		3 (<1/2"-1/4")	0.5		11/14/2014
41.4	1	XU 7B	20-30	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.7		11/14/2014
41	1	XU 7B	20-30	Lithic	fire-cracked rock	friable rounded piece			granitic			2 (<1"-1/2")	7		11/14/2014
42.1	1	XU 8	10-20	Lithic	debris	decortication			quartzite	100%		3 (<1/2"-1/4")	1.3		11/13/2014
42.2	1	XU 8	10-20	Lithic	debris	broken flake			Knife Lake Siltstone	0%		3 (<1/2"-1/4")	1		11/13/2014
42	1	XU 8	10-20	Lithic	fire-cracked rock	cobble with spall			granitic			1 (<2"-1")	118		11/13/2014
42.3	1	XU 8	10-20	Ceramic	body	grit temper	undetermined		exterior absent			3 (<1/2"-1/4")	0.2		11/13/2014
42.4	1	XU 8	10-20	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	0.2		11/13/2014
42.5	1	XU 8	10-20	Botanical	nut	nut						3 (<1/2"-1/4")	0.3	charred	11/13/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
43.1	1	XU 9	0-10	Lithic	debris	bipolar flake			rhyolite	50-<100%		2 (<1"-1/2")	11.8		11/13/2014
43.2	1	XU 9	0-10	Lithic	debris	bipolar flake			quartz	0%		3 (<1/2"-1/4")	0.6		11/13/2014
43.3	1	XU 9	0-10	Lithic	debris	bipolar flake			quartz	>0-<50%		3 (<1/2"-1/4")	2.1		11/13/2014
43.4	1	XU 9	0-10	Lithic	debris	decortication			basaltic	50-<100%		2 (<1"-1/2")	6.2		11/13/2014
43.5	1	XU 9	0-10	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.3		11/13/2014
44.1	1	XU 9	10-20	Lithic	core	tested cobble			quartzite	50-<100%		1 (<2"-1")	147		11/14/2014
44	1	XU 9	10-20	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	38		11/14/2014
44	1	XU 9	10-20	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	42		11/14/2014
44	2	XU 9	10-20	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	132		11/14/2014
45.1	1	XU 9	20-30	Lithic	debris	nonbifacial			quartzite	>0-<50%		2 (<1"-1/2")	20.6		11/14/2014
45.2	1	XU 9	20-30	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	0.2		11/14/2014
45	1	XU 9	20-30	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	15		11/14/2014
45	3	XU 9	20-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	18		11/14/2014
45	1	XU 9	20-30	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	7		11/14/2014
46.1	1	XU 10	10-20	Lithic	debris	bipolar flake			quartzite	0%		2 (<1"-1/2")	2.7		11/14/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
46.2	1	XU 10	10-20	Lithic	debris	shatter			Knife Lake Siltstone	>0-<50%		2 (<1"-1/2")	4.6		11/14/2014
46	1	XU 10	10-20	Lithic	fire-cracked rock	cobble (non-friable)			granitic			0 (<4"-2")	622		11/14/2014
46.3	1	XU 10	10-20	Ceramic	body	grit temper	cord marked		interior absent			3 (<1/2"-1/4")	0.3		11/14/2014
46.4-14	11	XU 10	10-20	Ceramic	body	grit temper	cord marked					2 (<1"-1/2")	28	3.7, 3.5, 4.3, 4.0, 4.5, 4.3, 4.2, 4.4, 3.1, 4.3, 4.3 mm	11/14/2014
46.15-20	6	XU 10	10-20	Ceramic	body	grit temper	cord marked					3 (<1/2"-1/4")	5.7	4.3, 2.7, 4.6, 3.7, 4.0, 3.8 mm	11/14/2014
47.1	1	XU 11	10-20	Lithic	debris	shatter			quartz	0%		3 (<1/2"-1/4")	0.5		11/17/2014
47	1	XU 11	10-20	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	24		11/17/2014
47	1	XU 11	10-20	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	2		11/17/2014
47	1	XU 11	10-20	Lithic	fire-cracked rock	spall			unidentified material			1 (<2"-1")	28		11/17/2014
47	1	XU 11	10-20	Lithic	fire-cracked rock	cobble with spall			granitic			1 (<2"-1")	69		11/17/2014
47.2	1	XU 11	10-20	Ceramic	body	grit temper	cord marked					2 (<1"-1/2")	2.2	4.0 mm	11/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
47.3-6	4	XU 11	10-20	Ceramic	body	grit temper	cord marked					3 (<1/2"-1/4")	4	3.2, 3.8, 4.0, 3.5 mm	11/17/2014
48.1-2	2	XU 11	30-40	Lithic	debris	broken flake			quartz	0%		3 (<1/2"-1/4")	1.3		11/18/2014
49.1-2	2	XU 8	20-30	Ceramic	body	grit temper	cord marked		interior absent			3 (<1/2"-1/4")	1.2		11/14/2014
49.3-14	12	XU 8	20-30	Ceramic	body	grit temper	cord marked					2 (<1"-1/2")	34.2	3.5, 6.5, 3.9, 5.2, 3.9, 6.0, 4.6, 3.9, 4.2, 4.0, 4.6, 5.2 mm	11/14/2014
49.15-20	6	XU 8	20-30	Ceramic	body	grit temper	cord marked					3 (<1/2"-1/4")	5	5.2, 2.9, 2.6, 5.2, 4.1, 3.8 mm	11/14/2014
49	1	XU 8	20-30	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	18		11/14/2014
50.1	1	XU 9	30-40	Ceramic	body	grit temper	cord marked					2 (<1"-1/2")	2.1	4.0 mm	11/14/2014
50	1	XU 9	30-40	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	18		11/14/2014
50	1	XU 9	30-40	Lithic	fire-cracked rock	angular			basaltic			2 (<1"-1/2")	28		11/14/2014
50	1	XU 9	30-40	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	32		11/14/2014
50	1	XU 9	30-40	Lithic	fire-cracked rock	cobble with spall			granitic			1 (<2"-1")	81		11/14/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
50	1	XU 9	30-40	Lithic	fire-cracked rock	friable rounded piece			granitic			1 (<2"-1")	22		11/14/2014
50	2	XU 9	30-40	Lithic	fire-cracked rock	friable rounded piece			granitic			2 (<1"-1/2")	38		11/14/2014
50	3	XU 9	30-40	Lithic	fire-cracked rock	friable rounded piece			granitic			3 (<1/2"-1/4")	3		11/14/2014
51.1-2	2	XU 10	20-30	Ceramic	body	grit temper	cord marked					2 (<1"-1/2")	3.9	4.0 & 5.0 mm	11/14/2014
51.3-4	2	XU 10	20-30	Ceramic	body	grit temper	cord marked					3 (<1/2"-1/4")	2.3	4.4 & 4.6 mm	11/14/2014
51	1	XU 10	20-30	Lithic	fire-cracked rock	cobble (non-friable)			granitic			0 (<4"-2")	469		11/14/2014
52.1	1	XU 11	0-10	Lithic	debris	broken flake			quartzite	0%		3 (<1/2"-1/4")	0.1		11/18/2014
52.2-6	5	XU 11	0-10	Ceramic	body	grit temper	cord marked					2 (<1"-1/2")	10.7	3.7, 4.5, 3.4, 4.0, 4.0 mm	11/18/2014
52.7-12	6	XU 11	0-10	Ceramic	body	grit temper	cord marked					3 (<1/2"-1/4")	4.8	4.3, 4.8, 3.7, 4.0, 4.5, 3.4 mm	11/18/2014
52.13	1	XU 11	0-10	Ceramic	body	grit temper	cord marked		interior absent			3 (<1/2"-1/4")	0.5		11/18/2014
52	1	XU 11	0-10	Lithic	fire-cracked rock	spall			basaltic			3 (<1/2"-1/4")	1		11/18/2014
53.1	1	XU 12	10-20	Ceramic	body	grit temper	cord marked					2 (<1"-1/2")	2	4.7 mm	11/17/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
53	1	XU 12	10-20	Lithic	fire-cracked rock	spall			granitic			0 (<4"-2")	267		11/17/2014
54.1	1	XU 10	0-10	Ceramic	body	grit temper	cord marked					2 (<1"-1/2")	1.6	4.3 mm	11/14/2014
55	1	ST 182EN15	0-30	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	3		9/24/2014
55.1	1	ST 182EN15	0-30	Ceramic	body	grit temper	cord marked		interior absent			3 (<1/2"-1/4")	0.5	smoothed over cord marked	9/24/2014
56.1	1	ST 145ES25	0-30	Lithic	tool	patterned flake (bifacial retouch)	projectile point		Swan River Chert	0%		3 (<1/2"-1/4")	1	finished, whole	9/23/2014
57.2	1	FEAT 1	20-30	Botanical	nutlet	nut						4 (<1/4")	0	Light Fraction Flotation; charred	11/21/2014
57.3	1	FEAT 1	20-30	Botanical	starchy material	organic material						4 (<1/4")	0	Light Fraction Flotation; charred	11/21/2014
57.4	1	FEAT 1	20-30	Botanical	twig bud	twig bud						4 (<1/4")	0	Light Fraction Flotation; charred	11/21/2014
57.5	1	FEAT 1	20-30	Botanical	wood charcoal	charcoal						4 (<1/4")	0	Light Fraction Flotation; @ 1 tsp.	11/21/2014
57	1	FEAT 1	20-30	Lithic	fire-cracked rock	angular			quartzite			00 (>4")	2947		11/21/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
57	5	FEAT 1	20-30	Lithic	fire-cracked rock	angular			quartzite			0 (<4"-2")	4045		11/21/2014
57	2	FEAT 1	20-30	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	347		11/21/2014
57	4	FEAT 1	20-30	Lithic	fire-cracked rock	angular			granitic			0 (<4"-2")	2536		11/21/2014
57	13	FEAT 1	20-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	1218		11/21/2014
57	7	FEAT 1	20-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	70		11/21/2014
57	30	FEAT 1	20-30	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	17		11/21/2014
57	1	FEAT 1	20-30	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	43		11/21/2014
57	1	FEAT 1	20-30	Lithic	fire-cracked rock	spall			granitic			0 (<4"-2")	180		11/21/2014
57	2	FEAT 1	20-30	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	106		11/21/2014
57	6	FEAT 1	20-30	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	51		11/21/2014
57	3	FEAT 1	20-30	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	3		11/21/2014
57	1	FEAT 1	20-30	Lithic	fire-cracked rock	spall			quartzite			0 (<4"-2")	387		11/21/2014
57	1	FEAT 1	20-30	Lithic	fire-cracked rock	spall			quartzite			1 (<2"-1")	92		11/21/2014
57	2	FEAT 1	20-30	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	26		11/21/2014
57	2	FEAT 1	20-30	Lithic	fire-cracked rock	angular/spall			granitic			0 (<4"-2")	674		11/21/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
57	2	FEAT 1	20-30	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	189		11/21/2014
57	2	FEAT 1	20-30	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	8		11/21/2014
57	1	FEAT 1	20-30	Lithic	fire-cracked rock	angular/spall			granitic			3 (<1/2"-1/4")	1		11/21/2014
57	1	FEAT 1	20-30	Lithic	fire-cracked rock	angular/spall			quartzite			1 (<2"-1")	64		11/21/2014
57	1	FEAT 1	20-30	Lithic	fire-cracked rock	split cobble			granitic			0 (<4"-2")	947		11/21/2014
57	1	FEAT 1	20-30	Lithic	fire-cracked rock	split cobble			basaltic			0 (<4"-2")	1096		11/21/2014
57	1	FEAT 1	20-30	Lithic	fire-cracked rock	split cobble			quartzite			00 (>4")	1334		11/21/2014
57	1	FEAT 1	20-30	Lithic	fire-cracked rock	split cobble			quartzite			0 (<4"-2")	1323		11/21/2014
57	1	FEAT 1	20-30	Lithic	fire-cracked rock	cobble (friable)			granitic			00 (>4")	2380		11/21/2014
57	3	FEAT 1	20-30	Lithic	fire-cracked rock	cobble (friable)			granitic			0 (<4"-2")	1085		11/21/2014
57	1	FEAT 1	20-30	Lithic	fire-cracked rock	cobble (friable)			granitic			1 (<2"-1")	169		11/21/2014
57	1	FEAT 1	20-30	Lithic	fire-cracked rock	cobble (friable)			quartzite			0 (<4"-2")	895		11/21/2014
57	1	FEAT 1	20-30	Lithic	fire-cracked rock	cobble (non-friable)			quartzite			0 (<4"-2")	401		11/21/2014
57	12	FEAT 1	20-30	Lithic	fire-cracked rock	friable rounded piece			granitic			3 (<1/2"-1/4")	7		11/21/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
57	51	FEAT 1	20-30	Lithic	fire-cracked rock	crumb			granitic			3 (<1/2"-1/4")	12		11/21/2014
57.1	1	FEAT 1	20-30	Lithic	debris	other G4 flake			chalcedony	>0-<50%		4 (<1/4")	0.2	heavy fraction	11/21/2014
57	12	FEAT 1	20-30	Lithic	fire-cracked rock	crumb			granitic			2 (<1"-1/2")	4.5	heavy fraction	11/21/2014
57	1	FEAT 1	20-30	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	8.9	heavy fraction	11/21/2014
57	1	FEAT 1	20-30	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	2.2	heavy fraction	11/21/2014
57	1	FEAT 1	20-30	Lithic	fire-cracked rock	angular/spall			granitic			3 (<1/2"-1/4")	2.2	heavy fraction	11/21/2014
58.2	1	FEAT 4	26-38	Botanical	Quercus sp. (acorn)	acorn						4 (<1/4")	0	Light Fraction Flotation; charred; 3 shell & 1 cap fragmentss	11/21/2014
58.3	1	FEAT 4	26-38	Botanical	Juglans nigra (black walnut nutshell)	nut						4 (<1/4")	0	Light Fraction Flotation; charred; @ 70 fragments	11/21/2014
58.4	1	FEAT 4	26-38	Botanical	nutlet	nut						4 (<1/4")	0	Light Fraction Flotation; charred; 4 fragments	11/21/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
58.6	1	FEAT 4	26-38	Botanical	wood charcoal	charcoal							0		11/21/2014
58.5	1	FEAT 4	26-38	Botanical	seed embryo	seed						4 (<1/4")	0	Light Fraction Flotation; charred	11/21/2014
58.1	1	FEAT 4	26-38	Ceramic	body	grit temper	undetermined		exterior absent			2 (<1"-1/2")	2.2	heavy fraction	11/21/2014
59.2	1	FEAT 3	30-40	Botanical	undetermined	organic material						4 (<1/4")	0.1	XU 7B; heavy fraction; charred	11/21/2014
59.1	1	FEAT 3	30-40	Lithic	tool	unpatterned pebble	abrader (incised)		quartzite	100%		1 (<2"-1")	16.2	XU 7B; heavy fraction; finished, whole	11/21/2014
60.1	1	FEAT 1	20-35	Botanical	Juglans nigra (black walnut nutshell)	nut						4 (<1/4")	0	Light Fraction Flotation; charred	11/21/2014
60.2	1	FEAT 1	20-35	Botanical	starchy material	organic material						4 (<1/4")	0	Light Fraction Flotation; charred; may be nut meat or root tuber?	11/21/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
60.3	1	FEAT 1	20-35	Botanical	nutlet	nut						4 (<1/4")	0	Light Fraction Flotation; charred; from woody plant, not identifiable	11/21/2014
60.4	1	FEAT 1	20-35	Botanical	wood charcoal	charcoal						4 (<1/4")	0	Light Fraction Flotation; not picked, @ 1 T.	11/21/2014
61.1	1	FEAT 1	40-50	Botanical	wood charcoal	charcoal						4 (<1/4")	0	Light Fraction Flotation; charred; asy black from profile wall; 1/4 tsp.	11/21/2014
62.1	1	FEAT 1	20-50	Botanical	Juglans sp.	nut						4 (<1/4")	0	Light Fraction Flotation; charred	11/21/2014
62.2	1	FEAT 1	20-50	Botanical	wood charcoal	charcoal						4 (<1/4")	0	Light Fraction Flotation; picked	11/21/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
62.3	1	FEAT 1	20-50	Botanical	wood charcoal	charcoal						4 (<1/4")	0	Light Fraction Flotation; not picked; @ 1 T.	11/21/2014
62.4	1	FEAT 1	20-50	Botanical	Juglans sp.	nut						4 (<1/4")	0	Light Fraction Flotation; Sample #2; charred	11/21/2014
62.5	1	FEAT 1	20-50	Botanical	starchy material	organic material						4 (<1/4")	0	Light Fraction Flotation; Sample #2; charred	11/21/2014
62.6	1	FEAT 1	20-50	Botanical	twig bud	twig bud						4 (<1/4")	0	Light Fraction Flotation; Sample #2; charred	11/21/2014
62.7	1	FEAT 1	20-50	Botanical	wood charcoal	charcoal						4 (<1/4")	0	Light Fraction Flotation; Sample #2; picked	11/21/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
62.8	1	FEAT 1	20-50	Botanical	wood charcoal	charcoal						4 (<1/4")	0	Light Fraction Flotation; Sample #2; not picked, @ 2 T.	11/21/2014
63.1	1	FEAT 3	30-40	Botanical	wood charcoal	charcoal						4 (<1/4")	0	XU 3; Light Fraction Flotation; charred; @ less than 1/4 tsp.	11/21/2014
64.1	1	FEAT 2	30-40	Botanical	wood charcoal	charcoal						4 (<1/4")	0	XU 9; Light Fraction Flotation; charred; @.5 tsp.	11/21/2014
928	1	ST 141EN5	0-30	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	27		9/23/2014
928	1	ST 141EN5	0-30	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	11		9/23/2014
930	1	ST 187ES5	0-20	Lithic	fire-cracked rock	spall			granitic			0 (<4"-2")	420		9/24/2014
931	1	XU 3A	20-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	79		11/11/2014
931	1	XU 3A	20-30	Lithic	fire-cracked rock	spall			quartzite			1 (<2"-1")	33		11/11/2014
931	1	XU 3A	20-30	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	49		11/11/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
932	3	XU 4A	20-30	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	114		11/11/2014
932	1	XU 4A	20-30	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	1		11/11/2014
932	1	XU 4A	20-30	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	33		11/11/2014
932	3	XU 4A	20-30	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	9		11/11/2014
932	1	XU 4A	20-30	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	8		11/11/2014
933	1	XU 5A	20-30	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	62		11/21/2014
933	2	XU 5A	20-30	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	21		11/21/2014
933	1	XU 5A	20-30	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	39		11/21/2014
933	3	XU 5A	20-30	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	15		11/21/2014
933	1	XU 5A	20-30	Lithic	fire-cracked rock	friable rounded piece			quartzite			2 (<1"-1/2")	20		11/21/2014
934	1	XU 6B	0-10	Lithic	fire-cracked rock	angular/spall			unidentified material			2 (<1"-1/2")	17		11/13/2014
935	1	XU 7A	0-10	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	17		11/19/2014
935	1	XU 7A	0-10	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	2		11/19/2014
935	1	XU 7A	0-10	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	2		11/19/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
939	1	XU 10	30-40	Lithic	fire-cracked rock	angular			basaltic			1 (<2"-1")	132		11/14/2014
942	1	XU 12	20-30	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	4		11/17/2014
942	1	XU 12	20-30	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	10		11/17/2014
943	2	FEAT 1	10-40	Lithic	fire-cracked rock	angular			granitic			00 (>4")	4433		11/21/2014
943	13	FEAT 1	10-40	Lithic	fire-cracked rock	angular			granitic			0 (<4"-2")	10884		11/21/2014
943	18	FEAT 1	10-40	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	1750		11/21/2014
943	15	FEAT 1	10-40	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	188		11/21/2014
943	9	FEAT 1	10-40	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	11		11/21/2014
943	2	FEAT 1	10-40	Lithic	fire-cracked rock	angular			quartzite			0 (<4"-2")	1566		11/21/2014
943	2	FEAT 1	10-40	Lithic	fire-cracked rock	angular			quartzite			1 (<2"-1")	181		11/21/2014
943	1	FEAT 1	10-40	Lithic	fire-cracked rock	angular			unidentified material			0 (<4"-2")	310		11/21/2014
943	1	FEAT 1	10-40	Lithic	fire-cracked rock	spall			granitic			0 (<4"-2")	154		11/21/2014
943	9	FEAT 1	10-40	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	500		11/21/2014
943	1	FEAT 1	10-40	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	27		11/21/2014
943	1	FEAT 1	10-40	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	2		11/21/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
943	2	FEAT 1	10-40	Lithic	fire-cracked rock	spall			quartzite			1 (<2"-1")	127		11/21/2014
943	2	FEAT 1	10-40	Lithic	fire-cracked rock	spall			quartzite			2 (<1"-1/2")	34		11/21/2014
943	1	FEAT 1	10-40	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	1		11/21/2014
943	1	FEAT 1	10-40	Lithic	fire-cracked rock	spall			unidentified material			0 (<4"-2")	283		11/21/2014
943	2	FEAT 1	10-40	Lithic	fire-cracked rock	spall			unidentified material			1 (<2"-1")	114		11/21/2014
943	3	FEAT 1	10-40	Lithic	fire-cracked rock	spall			unidentified material			2 (<1"-1/2")	13		11/21/2014
943	1	FEAT 1	10-40	Lithic	fire-cracked rock	spall			metamorphic			2 (<1"-1/2")	5		11/21/2014
943	1	FEAT 1	10-40	Lithic	fire-cracked rock	angular/spall			unidentified material			1 (<2"-1")	44		11/21/2014
943	1	FEAT 1	10-40	Lithic	fire-cracked rock	angular/spall			granitic			0 (<4"-2")	348		11/21/2014
943	1	FEAT 1	10-40	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	25		11/21/2014
943	4	FEAT 1	10-40	Lithic	fire-cracked rock	split cobble			quartzite			0 (<4"-2")	4175		11/21/2014
943	1	FEAT 1	10-40	Lithic	fire-cracked rock	cobble with spall			granitic			0 (<4"-2")	1675		11/21/2014
943	2	FEAT 1	10-40	Lithic	fire-cracked rock	cobble with spall			granitic			00 (>4")	11497		11/21/2014
943	2	FEAT 1	10-40	Lithic	fire-cracked rock	cobble with spall			quartzite			00 (>4")	6130		11/21/2014
943	1	FEAT 1	10-40	Lithic	fire-cracked rock	cobble with spall			quartzite			0 (<4"-2")	990		11/21/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
943	4	FEAT 1	10-40	Lithic	fire-cracked rock	cobble (non-friable)			quartzite			00 (>4")	5943		11/21/2014
943	2	FEAT 1	10-40	Lithic	fire-cracked rock	cobble (non-friable)			quartzite			0 (<4"-2")	626		11/21/2014
943	4	FEAT 1	10-40	Lithic	fire-cracked rock	cobble (non-friable)			granitic			00 (>4")	24911		11/21/2014
943	1	FEAT 1	10-40	Lithic	fire-cracked rock	cobble (non-friable)			metamorphic			00 (>4")	2630		11/21/2014
943	2	FEAT 1	10-40	Lithic	fire-cracked rock	cobble (friable)			granitic			0 (<4"-2")	778		11/21/2014
943	1	FEAT 1	10-40	Lithic	fire-cracked rock	cobble (friable)			metamorphic			0 (<4"-2")	405		11/21/2014
943	1	FEAT 1	10-40	Lithic	fire-cracked rock	cobble (friable)			metamorphic			1 (<2"-1")	241		11/21/2014
943	2	FEAT 1	10-40	Lithic	fire-cracked rock	friable rounded piece			granitic			2 (<1"-1/2")	11		11/21/2014
943	36	FEAT 1	10-40	Lithic	fire-cracked rock	friable rounded piece			granitic			3 (<1/2"-1/4")	13		11/21/2014
943	73	FEAT 1	10-40	Lithic	fire-cracked rock	crumb			granitic			4 (<1/4")	21		11/21/2014
945	2	FEAT 1	40-50	Lithic	fire-cracked rock	angular			unidentified material			1 (<2"-1")	60		11/21/2014
945	1	FEAT 1	40-50	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	10		11/21/2014
945	1	FEAT 1	40-50	Lithic	fire-cracked rock	crumb			unidentified material			3 (<1/2"-1/4")	1		11/21/2014
949	2	FEAT 1	10-40	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	2.3	heavy fraction	11/21/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
949	1	FEAT 1	10-40	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	13.4	heavy fraction	11/21/2014
949	5	FEAT 1	10-40	Lithic	fire-cracked rock	spall			igneous			3 (<1/2"-1/4")	1.9	heavy fraction	11/21/2014
949	5	FEAT 1	10-40	Lithic	fire-cracked rock	spall			igneous			2 (<1"-1/2")	21.4	heavy fraction	11/21/2014
949	18	FEAT 1	10-40	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	28.2	heavy fraction	11/21/2014
949	9	FEAT 1	10-40	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	58.9	heavy fraction	11/21/2014
949	123	FEAT 1	10-40	Lithic	fire-cracked rock	crumb			granitic			2 (<1"-1/2")	39.1	heavy fraction	11/21/2014
949	2	FEAT 1	10-40	Lithic	fire-cracked rock	angular/spall			quartzite			2 (<1"-1/2")	17.2	heavy fraction	11/21/2014
949	3	FEAT 1	10-40	Lithic	fire-cracked rock	crumb			quartzite			3 (<1/2"-1/4")	2.5	heavy fraction	11/21/2014
949	2	FEAT 1	10-40	Lithic	fire-cracked rock	angular			metamorphic			3 (<1/2"-1/4")	7.1	heavy fraction	11/21/2014
949	2	FEAT 1	10-40	Lithic	fire-cracked rock	crumb			unidentified material			2 (<1"-1/2")	0.3	heavy fraction	11/21/2014
949	3	FEAT 1	10-40	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	18.4	heavy fraction	11/21/2014
950	312	FEAT 1	10-20	Lithic	fire-cracked rock	crumb			granitic			2 (<1"-1/2")	143.1	heavy fraction	11/21/2014
950	13	FEAT 1	10-20	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	28.1	heavy fraction	11/21/2014
950	8	FEAT 1	10-20	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	66.9	heavy fraction	11/21/2014
950	2	FEAT 1	10-20	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	47.2	heavy fraction	11/21/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
950	13	FEAT 1	10-20	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	124.4	heavy fraction	11/21/2014
950	4	FEAT 1	10-20	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	182.3	heavy fraction	11/21/2014
950	10	FEAT 1	10-20	Lithic	fire-cracked rock	angular/spall			granitic			3 (<1/2"-1/4")	23.6	heavy fraction	11/21/2014
950	4	FEAT 1	10-20	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	44	heavy fraction	11/21/2014
950	3	FEAT 1	10-20	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	118.2	heavy fraction	11/21/2014
950	2	FEAT 1	10-20	Lithic	fire-cracked rock	friable rounded piece			granitic			1 (<2"-1")	45.3	heavy fraction	11/21/2014
951	332	FEAT 1	20-50	Lithic	fire-cracked rock	crumb			granitic			2 (<1"-1/2")	139.4	heavy fraction	11/21/2014
951	8	FEAT 1	20-50	Lithic	fire-cracked rock	friable rounded piece			granitic			2 (<1"-1/2")	38.1	heavy fraction	11/21/2014
951	3	FEAT 1	20-50	Lithic	fire-cracked rock	friable rounded piece			granitic			1 (<2"-1")	130.1	heavy fraction	11/21/2014
951	9	FEAT 1	20-50	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	59.3	heavy fraction	11/21/2014
951	6	FEAT 1	20-50	Lithic	fire-cracked rock	angular/spall			granitic			3 (<1/2"-1/4")	11	heavy fraction	11/21/2014
951	1	FEAT 1	20-50	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	57.6	heavy fraction	11/21/2014
951	5	FEAT 1	20-50	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	31.8	heavy fraction	11/21/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
951	3	FEAT 1	20-50	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	3.4	heavy fraction	11/21/2014
951	1	FEAT 1	20-50	Lithic	fire-cracked rock	angular/spall			basaltic			1 (<2"-1")	29.4	heavy fraction	11/21/2014
951	1	FEAT 1	20-50	Lithic	fire-cracked rock	angular/spall			basaltic			2 (<1"-1/2")	21	heavy fraction	11/21/2014
951	1	FEAT 1	20-50	Lithic	fire-cracked rock	angular/spall			basaltic			3 (<1/2"-1/4")	2.3	heavy fraction	11/21/2014
951	7	FEAT 1	20-50	Lithic	fire-cracked rock	spall			igneous			3 (<1/2"-1/4")	10.1	heavy fraction	11/21/2014
951	7	FEAT 1	20-50	Lithic	fire-cracked rock	spall			unidentified material			3 (<1/2"-1/4")	8.8	heavy fraction	11/21/2014
951	1	FEAT 1	20-50	Lithic	fire-cracked rock	angular/spall			unidentified material			1 (<2"-1")	60.5	heavy fraction	11/21/2014
951	1	FEAT 1	20-50	Lithic	fire-cracked rock	angular/spall			unidentified material			2 (<1"-1/2")	5.6	heavy fraction	11/21/2014
952	168	FEAT 1	20-35	Lithic	fire-cracked rock	crumb			granitic			2 (<1"-1/2")	42	6.5 L heavy fraction	11/21/2014
952	36	FEAT 1	20-35	Lithic	fire-cracked rock	crumb			metamorphic			2 (<1"-1/2")	17.1	6.5 L heavy fraction	11/21/2014
952	3	FEAT 1	20-35	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	28.4	6.5 L heavy fraction	11/21/2014
952	5	FEAT 1	20-35	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	38.2	6.5 L heavy fraction	11/21/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
952	3	FEAT 1	20-35	Lithic	fire-cracked rock	spall			igneous			3 (<1/2"-1/4")	2.5	6.5 L heavy fraction	11/21/2014
952	1	FEAT 1	20-35	Lithic	fire-cracked rock	spall			igneous			2 (<1"-1/2")	7	6.5 L heavy fraction	11/21/2014
952	1	FEAT 1	20-35	Lithic	fire-cracked rock	spall			unidentified material			3 (<1/2"-1/4")	0.6	6.5 L heavy fraction	11/21/2014
952	1	FEAT 1	20-35	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	1.1	6.5 L heavy fraction	11/21/2014
952	8	FEAT 1	20-35	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	13.4	6.5 L heavy fraction	11/21/2014
952	3	FEAT 1	20-35	Lithic	fire-cracked rock	spall			metamorphic			3 (<1/2"-1/4")	4.6	6.5 L heavy fraction	11/21/2014
952	1	FEAT 1	20-35	Lithic	fire-cracked rock	angular/spall			granitic			1 (<2"-1")	24.3	6.5 L heavy fraction	11/21/2014
952	4	FEAT 1	20-35	Lithic	fire-cracked rock	spall			metamorphic			2 (<1"-1/2")	28.6	6.5 L heavy fraction	11/21/2014
952	4	FEAT 1	20-35	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	5.8	6.5 L heavy fraction	11/21/2014
952	6	FEAT 1	20-35	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	53.8	6.5 L heavy fraction	11/21/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
952	215	FEAT 1	20-35	Lithic	fire-cracked rock	crumb			granitic			2 (<1"-1/2")	91	34.35L heavy fraction	11/21/2014
952	13	FEAT 1	20-35	Lithic	fire-cracked rock	spall			granitic			2 (<1"-1/2")	103.8	34.35L heavy fraction	11/21/2014
952	8	FEAT 1	20-35	Lithic	fire-cracked rock	spall			granitic			3 (<1/2"-1/4")	12.2	34.35L heavy fraction	11/21/2014
952	4	FEAT 1	20-35	Lithic	fire-cracked rock	spall			granitic			1 (<2"-1")	152	34.35L heavy fraction	11/21/2014
952	5	FEAT 1	20-35	Lithic	fire-cracked rock	angular			granitic			1 (<2"-1")	423	34.35L heavy fraction	11/21/2014
952	3	FEAT 1	20-35	Lithic	fire-cracked rock	angular			granitic			0 (<4"-2")	1085	34.35L heavy fraction	11/21/2014
952	1	FEAT 1	20-35	Lithic	fire-cracked rock	split cobble			granitic			0 (<4"-2")	558	34.35L heavy fraction	11/21/2014
952	1	FEAT 1	20-35	Lithic	fire-cracked rock	friable rounded piece			granitic			2 (<1"-1/2")	8.8	34.35L heavy fraction	11/21/2014
952	4	FEAT 1	20-35	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	44	34.35L heavy fraction	11/21/2014
952	4	FEAT 1	20-35	Lithic	fire-cracked rock	angular/spall			granitic			3 (<1/2"-1/4")	7.6	34.35L heavy fraction	11/21/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
952	1	FEAT 1	20-35	Lithic	fire-cracked rock	angular/spall			granitic			0 (<4"-2")	207.7	34.35L heavy fraction	11/21/2014
952	7	FEAT 1	20-35	Lithic	fire-cracked rock	angular			granitic			2 (<1"-1/2")	85.4	34.35L heavy fraction	11/21/2014
952	3	FEAT 1	20-35	Lithic	fire-cracked rock	angular			granitic			3 (<1/2"-1/4")	5.3	34.35L heavy fraction	11/21/2014
952	1	FEAT 1	20-35	Lithic	fire-cracked rock	spall			quartzite			3 (<1/2"-1/4")	5.3	34.35L heavy fraction	11/21/2014
952	5	FEAT 1	20-35	Lithic	fire-cracked rock	crumb			metamorphic			2 (<1"-1/2")	5.1	34.35L heavy fraction	11/21/2014
952	2	FEAT 1	20-35	Lithic	fire-cracked rock	angular/spall			igneous			3 (<1/2"-1/4")	4	34.35L heavy fraction	11/21/2014
952	1	FEAT 1	20-35	Lithic	fire-cracked rock	angular/spall			igneous			2 (<1"-1/2")	4.3	34.35L heavy fraction	11/21/2014
953	1	FEAT 3	30-40	Lithic	fire-cracked rock	angular/spall			quartzite			3 (<1/2"-1/4")	0.7	XU 7B; heavy fraction	11/21/2014
953	1	FEAT 3	30-40	Lithic	fire-cracked rock	angular/spall			unidentified material			2 (<1"-1/2")	7.4	XU 7B; heavy fraction	11/21/2014
953	7	FEAT 3	30-40	Lithic	fire-cracked rock	crumb			granitic			2 (<1"-1/2")	1.8	XU 7B; heavy fraction	11/21/2014

Prov #	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc3	Desc4	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Artifact Notes	Date
953	1	FEAT 3	30-40	Lithic	fire-cracked rock	friable rounded piece			granitic			2 (<1"-1/2")	3.3	XU 7B; heavy fraction	11/21/2014
954	2	FEAT 2	30-40	Lithic	fire-cracked rock	spall			basaltic			2 (<1"-1/2")	20.6	XU 9; heavy fraction	11/21/2014
954	2	FEAT 2	30-40	Lithic	fire-cracked rock	angular			quartzite			2 (<1"-1/2")	6.7	XU 9; heavy fraction	11/21/2014
954	1	FEAT 2	30-40	Lithic	fire-cracked rock	angular			quartzite			3 (<1/2"-1/4")	2.1	XU 9; heavy fraction	11/21/2014
954	1	FEAT 2	30-40	Lithic	fire-cracked rock	angular/spall			granitic			2 (<1"-1/2")	2.9	XU 9;heavy fraction	11/21/2014
954	1	FEAT 2	30-40	Lithic	fire-cracked rock	angular			unidentified material			2 (<1"-1/2")	14.8	XU 9; heavy fraction	11/21/2014
954	15	FEAT 2	30-40	Lithic	fire-cracked rock	crumb			granitic			2 (<1"-1/2")	7.2	XU 9; heavy fraction	11/21/2014

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Prov#	Count	Location	Depth (cmbs)	Class	Desc1	Desc2	Desc5	Desc6	Desc7	Size Grade	Weight (g)	Date
1.1	1	ST 158W	0-20	Lithic	debris	broken flake	rhyolite	0%		3 (<1/2"-1/4")	0.2	9/12/2014
2.1	1	ST 212E	0-20	Lithic	debris	decortication	Swan River Chert	100%	probably heat treated	2 (<1"-1/2")	4.2	9/12/2014

APPENDIX C: RADIOCARBON DATING REPORTS FROM BETA ANALYTIC, INC.

BETA

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4985 SW 74 Court
Miami, Florida 33155 USA
Tel: 305 667 5167
Fax: 305 663 0964
Beta@radiocarbon.com
www.radiocarbon.com

Darden Hood
President

Ronald Hatfield
Christopher Patrick
Deputy Directors

January 21, 2015

Mr. Frank Florin
Florin Cultural Resource Services
N12902 273rd Street
Boyceville, WI 54725
USA

RE: Radiocarbon Dating Results For Samples 280-2 XU10 30-40, 280-2 XU7N 20-30

Dear Mr. Florin:

Enclosed are the radiocarbon dating results for two samples recently sent to us. As usual, the method of analysis is listed on the report with the results and calibration data is provided where applicable. The Conventional Radiocarbon Ages have all been corrected for total fractionation effects and where applicable, calibration was performed using 2013 calibration databases (cited on the graph pages).

The web directory containing the table of results and PDF download also contains pictures, a cvs spreadsheet download option and a quality assurance report containing expected vs. measured values for 3-5 working standards analyzed simultaneously with your samples.

Reported results are accredited to ISO/IEC 17025:2005 Testing Accreditation PJLA #59423 standards and all chemistry was performed here in our laboratories and counted in our own accelerators here in Miami. Since Beta is not a teaching laboratory, only graduates trained to strict protocols of the ISO/IEC 17025:2005 Testing Accreditation PJLA #59423 program participated in the analyses.

As always Conventional Radiocarbon Ages and sigmas are rounded to the nearest 10 years per the conventions of the 1977 International Radiocarbon Conference. When counting statistics produce sigmas lower than +/- 30 years, a conservative +/- 30 BP is cited for the result.

When interpreting the results, please consider any communications you may have had with us regarding the samples. As always, your inquiries are most welcome. If you have any questions or would like further details of the analyses, please do not hesitate to contact us.

The cost of the analysis was charged to the VISA card provided. Thank you. As always, if you have any questions or would like to discuss the results, don't hesitate to contact me.

Sincerely,

Darden Hood

Digital signature on file

BETA ANALYTIC INC.
DR. M.A. TAMERS and MR. D.G. HOOD
4985 S.W. 74 COURT
MIAMI, FLORIDA, USA 33155
PH: 305-667-5167 FAX:305-663-0964
beta@radiocarbon.com

REPORT OF RADIOCARBON DATING ANALYSES

Mr. Frank Florin — Report Date: 1/21/2015

Florin Cultural Resource Services — Material Received: 1/2/2015

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 400911	5590 +/- 30 BP	-19.1 o/oo	5690 +/- 30 BP

SAMPLE : 280-2 XU10 30-40
ANALYSIS : AMS-Standard delivery
MATERIAL/PRETREATMENT : (cremated bone carbonate): bone carbonate extraction
2 SIGMA CALIBRATION : Cal BC 4585 to 4455 (Cal BP 6535 to 6405)

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 400912	5600 +/- 30 BP	-16.6 o/oo	5740 +/- 30 BP

SAMPLE : 280-2 XU7N 20-30
ANALYSIS : AMS-Standard delivery
MATERIAL/PRETREATMENT : (cremated bone carbonate): bone carbonate extraction
2 SIGMA CALIBRATION : Cal BC 4685 to 4500 (Cal BP 6635 to 6450)

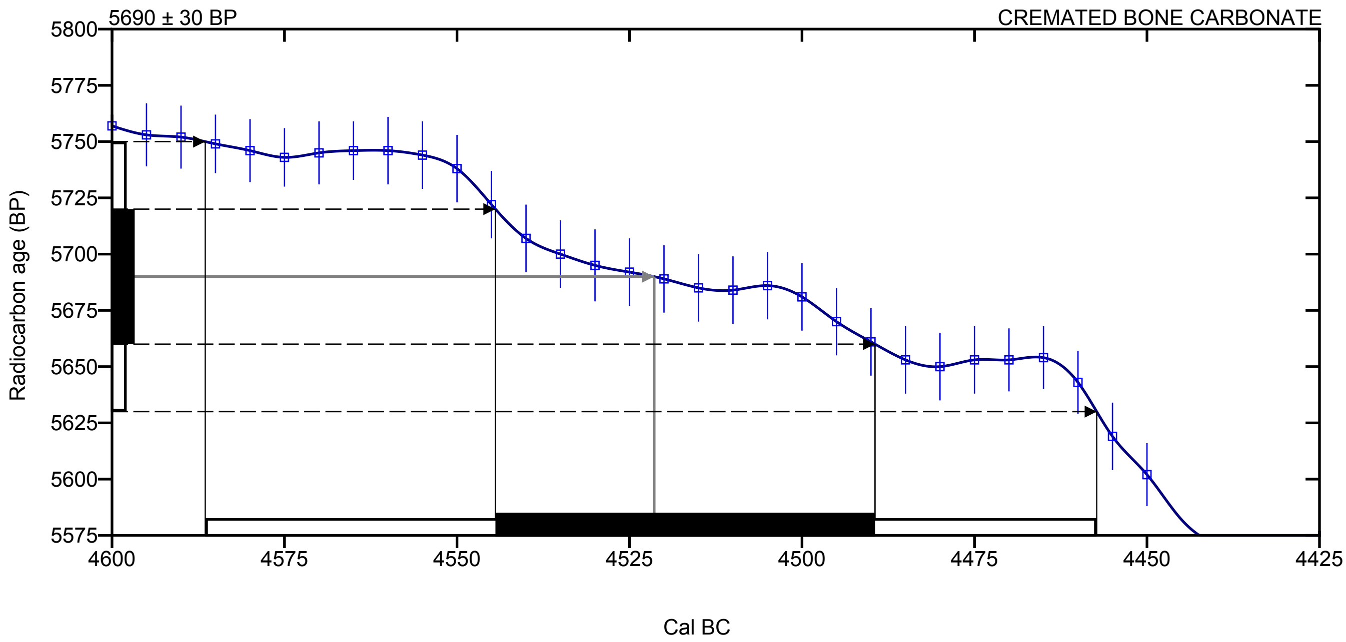
Dates are reported as RCYBP (radiocarbon years before present, "present" = AD 1950). By international convention, the modern reference standard was 95% the 14C activity of the National Institute of Standards and Technology (NIST) Oxalic Acid (SRM 4990C) and calculated using the Libby 14C half-life (5568 years). Quoted errors represent 1 relative standard deviation statistics (68% probability) counting errors based on the combined measurements of the sample, background, and modern reference standards. Measured 13C/12C ratios (delta 13C) were calculated relative to the PDB-1 standard.

The Conventional Radiocarbon Age represents the Measured Radiocarbon Age corrected for isotopic fractionation, calculated using the delta 13C. On rare occasion where the Conventional Radiocarbon Age was calculated using an assumed delta 13C, the ratio and the Conventional Radiocarbon Age will be followed by "*". The Conventional Radiocarbon Age is not calendar calibrated. When available, the Calendar Calibrated result is calculated from the Conventional Radiocarbon Age and is listed as the "Two Sigma Calibrated Result" for each sample.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -19.1 o/oo : lab. mult = 1)

Laboratory number	**Beta-400911**
Conventional radiocarbon age	**5690 ± 30 BP**
2 Sigma calibrated result 95% probability	**Cal BC 4585 to 4455 (Cal BP 6535 to 6405)**
Intercept of radiocarbon age with calibration curve	Cal BC 4520 (Cal BP 6470)
1 Sigma calibrated results 68% probability	Cal BC 4545 to 4490 (Cal BP 6495 to 6440)



Database used

INTCAL13

References

Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

References to INTCAL13 database

Reimer PJ et al. IntCal13 and Marine13 radiocarbon age calibration curves 0– 50,000 years cal BP. Radiocarbon 55(4):1869– 1887., 2013.

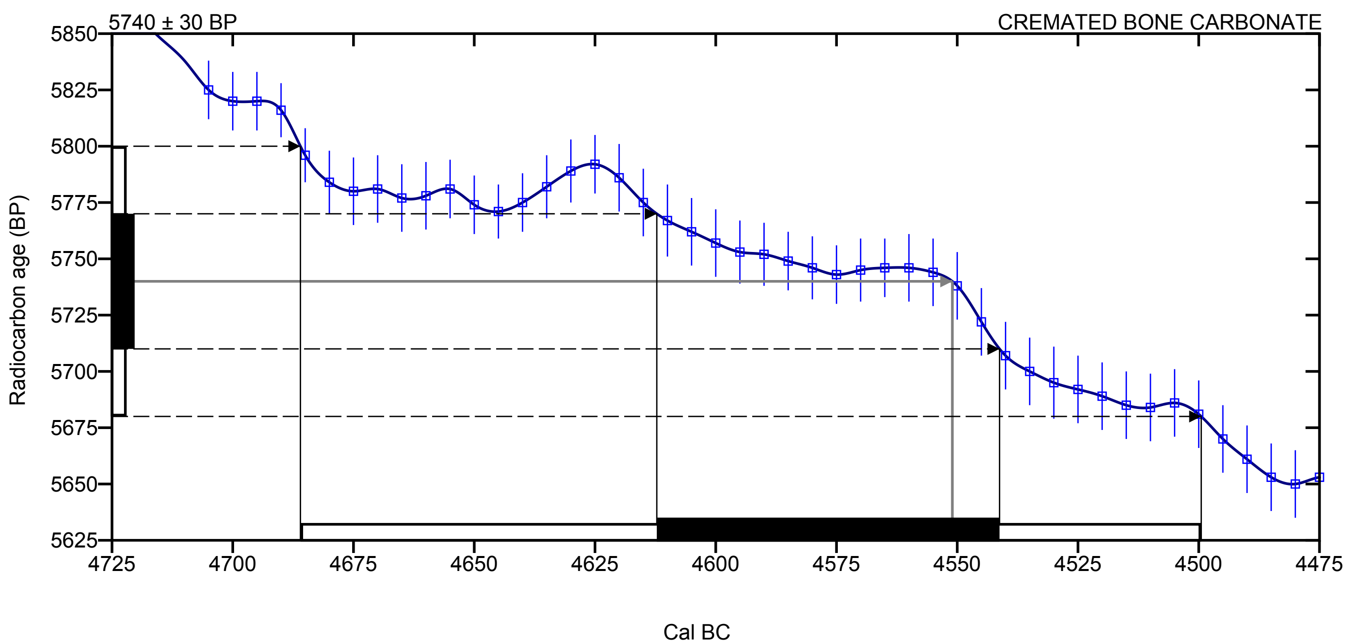
Beta Analytic Radiocarbon Dating Laboratory

4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305)667-5167 • Fax: (305)663-0964 • Email: beta@radiocarbon.com

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -16.6 o/oo : lab. mult = 1)

Laboratory number	**Beta-400912**
Conventional radiocarbon age	**5740 ± 30 BP**
2 Sigma calibrated result **95% probability**	**Cal BC 4685 to 4500 (Cal BP 6635 to 6450)**
Intercept of radiocarbon age with calibration curve	Cal BC 4550 (Cal BP 6500)
1 Sigma calibrated results 68% probability	Cal BC 4610 to 4540 (Cal BP 6560 to 6490)



Database used

INTCAL13

References

Mathematics used for calibration scenario

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Reimer PJ et al. IntCal13 and Marine13 radiocarbon age calibration curves 0– 50,000 years cal BP. Radiocarbon 55(4):1869– 1887., 2013.

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President

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Deputy Directors

January 21, 2015

Mr. Frank Florin
Florin Cultural Resource Services
N12902 273rd Street
Boyceville, WI 54725
USA

RE: Radiocarbon Dating Results For Samples 280-3/4 XU6, 280-2 XU13, 280-3/4 XU2 F1, 280-2 XU15 60-70, 280-2 XU15 20-30

Dear Mr. Florin:

Enclosed are the radiocarbon dating results for five samples recently sent to us. As usual, the method of analysis is listed on the report with the results and calibration data is provided where applicable. The Conventional Radiocarbon Ages have all been corrected for total fractionation effects and where applicable, calibration was performed using 2013 calibration databases (cited on the graph pages).

The web directory containing the table of results and PDF download also contains pictures, a cvs spreadsheet download option and a quality assurance report containing expected vs. measured values for 3-5 working standards analyzed simultaneously with your samples.

Reported results are accredited to ISO/IEC 17025:2005 Testing Accreditation PJLA #59423 standards and all chemistry was performed here in our laboratories and counted in our own accelerators here in Miami. Since Beta is not a teaching laboratory, only graduates trained to strict protocols of the ISO/IEC 17025:2005 Testing Accreditation PJLA #59423 program participated in the analyses.

As always Conventional Radiocarbon Ages and sigmas are rounded to the nearest 10 years per the conventions of the 1977 International Radiocarbon Conference. When counting statistics produce sigmas lower than +/- 30 years, a conservative +/- 30 BP is cited for the result.

When interpreting the results, please consider any communications you may have had with us regarding the samples. As always, your inquiries are most welcome. If you have any questions or would like further details of the analyses, please do not hesitate to contact us.

The cost of the analysis was charged to the VISA card provided. Thank you. As always, if you have any questions or would like to discuss the results, don’t hesitate to contact me.

Sincerely,

Darden Hood

Digital signature on file

BETA ANALYTIC INC.
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REPORT OF RADIOCARBON DATING ANALYSES

Mr. Frank Florin — Report Date: 1/21/2015

Florin Cultural Resource Services — Material Received: 1/2/2015

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 400913	220 +/- 30 BP	-26.3 o/oo	200 +/- 30 BP

SAMPLE : 280-3/4 XU6
ANALYSIS : AMS-Standard delivery
MATERIAL/PRETREATMENT : (cremated bone carbonate): bone carbonate extraction
2 SIGMA CALIBRATION : Cal AD 1650 to 1685 (Cal BP 300 to 265) and Cal AD 1730 to 1810 (Cal BP 220 to 140) and Cal AD 1925 to Post 1950 (Cal BP 25 to Post 0)

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 400914	5750 +/- 30 BP	-15.3 o/oo	5910 +/- 30 BP

SAMPLE : 280-2 XU13
ANALYSIS : AMS-Standard delivery
MATERIAL/PRETREATMENT : (cremated bone carbonate): bone carbonate extraction
2 SIGMA CALIBRATION : Cal BC 4840 to 4715 (Cal BP 6790 to 6665)

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 400915	4010 +/- 30 BP	-26.2 o/oo	3990 +/- 30 BP

SAMPLE : 280-3/4 XU2 F1
ANALYSIS : AMS-Standard delivery
MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid
2 SIGMA CALIBRATION : Cal BC 2575 to 2465 (Cal BP 4525 to 4415)

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 400916	4840 +/- 30 BP	-18.0 o/oo	4950 +/- 30 BP

SAMPLE : 280-2 XU15 60-70
ANALYSIS : AMS-Standard delivery
MATERIAL/PRETREATMENT : (cremated bone carbonate): bone carbonate extraction
2 SIGMA CALIBRATION : Cal BC 3785 to 3655 (Cal BP 5735 to 5605)

Dates are reported as RCYBP (radiocarbon years before present, "present" = AD 1950). By international convention, the modern reference standard was 95% the 14C activity of the National Institute of Standards and Technology (NIST) Oxalic Acid (SRM 4990C) and calculated using the Libby 14C half-life (5568 years). Quoted errors represent 1 relative standard deviation statistics (68% probability) counting errors based on the combined measurements of the sample, background, and modern reference standards. Measured 13C/12C ratios (delta 13C) were calculated relative to the PDB-1 standard.

The Conventional Radiocarbon Age represents the Measured Radiocarbon Age corrected for isotopic fractionation, calculated using the delta 13C. On rare occasion where the Conventional Radiocarbon Age was calculated using an assumed delta 13C, the ratio and the Conventional Radiocarbon Age will be followed by "*". The Conventional Radiocarbon Age is not calendar calibrated. When available, the Calendar Calibrated result is calculated from the Conventional Radiocarbon Age and is listed as the "Two Sigma Calibrated Result" for each sample.

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beta@radiocarbon.com

REPORT OF RADIOCARBON DATING ANALYSES

Mr. Frank Florin

Report Date: 1/21/2015

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 400917	5880 +/- 30 BP	-25.4 o/oo	5870 +/- 30 BP

SAMPLE : 280-2 XU15 20-30
ANALYSIS : AMS-Standard delivery
MATERIAL/PRETREATMENT : (cremated bone carbonate): bone carbonate extraction
2 SIGMA CALIBRATION : Cal BC 4795 to 4690 (Cal BP 6745 to 6640)

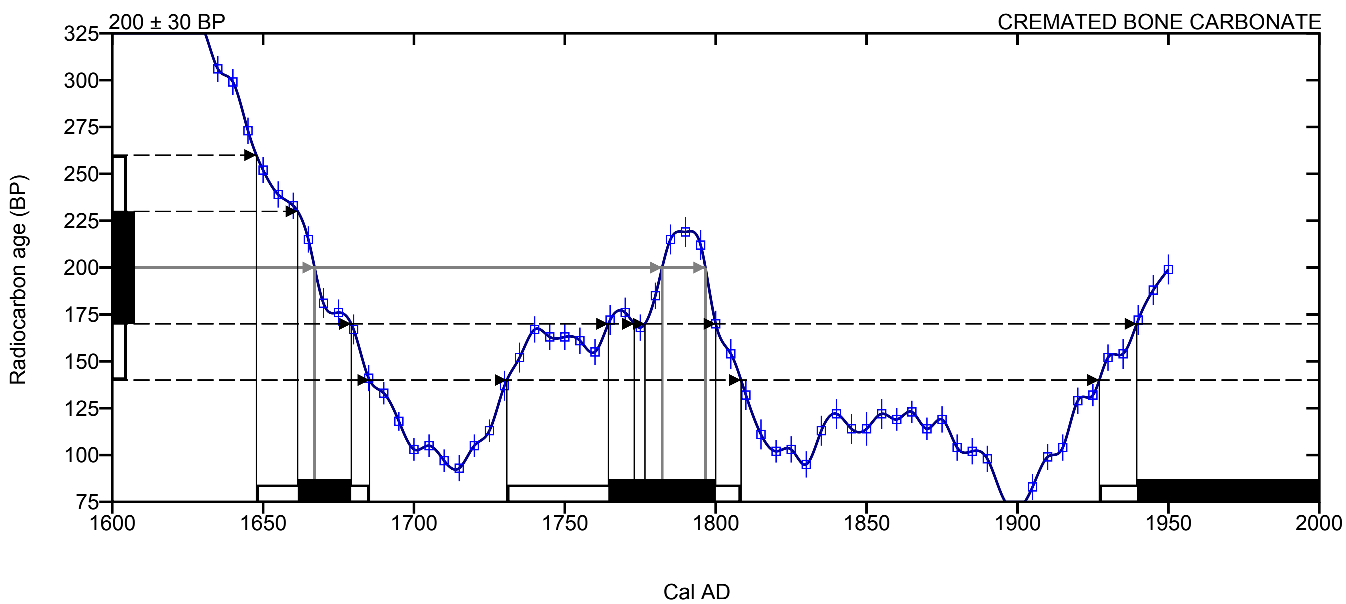
Dates are reported as RCYBP (radiocarbon years before present, "present" = AD 1950). By international convention, the modern reference standard was 95% the 14C activity of the National Institute of Standards and Technology (NIST) Oxalic Acid (SRM 4990C) and calculated using the Libby 14C half-life (5568 years). Quoted errors represent 1 relative standard deviation statistics (68% probability) counting errors based on the combined measurements of the sample, background, and modern reference standards. Measured 13C/12C ratios (delta 13C) were calculated relative to the PDB-1 standard.

The Conventional Radiocarbon Age represents the Measured Radiocarbon Age corrected for isotopic fractionation, calculated using the delta 13C. On rare occasion where the Conventional Radiocarbon Age was calculated using an assumed delta 13C, the ratio and the Conventional Radiocarbon Age will be followed by "*". The Conventional Radiocarbon Age is not calendar calibrated. When available, the Calendar Calibrated result is calculated from the Conventional Radiocarbon Age and is listed as the "Two Sigma Calibrated Result" for each sample.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -26.3 o/oo : lab. mult = 1)

Laboratory number	**Beta-400913**
Conventional radiocarbon age	**200 ± 30 BP**
2 Sigma calibrated result **95% probability**	**Cal AD 1650 to 1685 (Cal BP 300 to 265)** **Cal AD 1730 to 1810 (Cal BP 220 to 140)** **Cal AD 1925 to Post 1950 (Cal BP 25 to Post 0)**
Intercept of radiocarbon age with calibration curve	Cal AD 1665 (Cal BP 285) Cal AD 1780 (Cal BP 170) Cal AD 1795 (Cal BP 155)
1 Sigma calibrated results 68% probability	Cal AD 1660 to 1680 (Cal BP 290 to 270) Cal AD 1765 to 1800 (Cal BP 185 to 150) Cal AD 1940 to Post 1950 (Cal BP 10 to Post 0)



Database used
INTCAL13

References
Mathematics used for calibration scenario

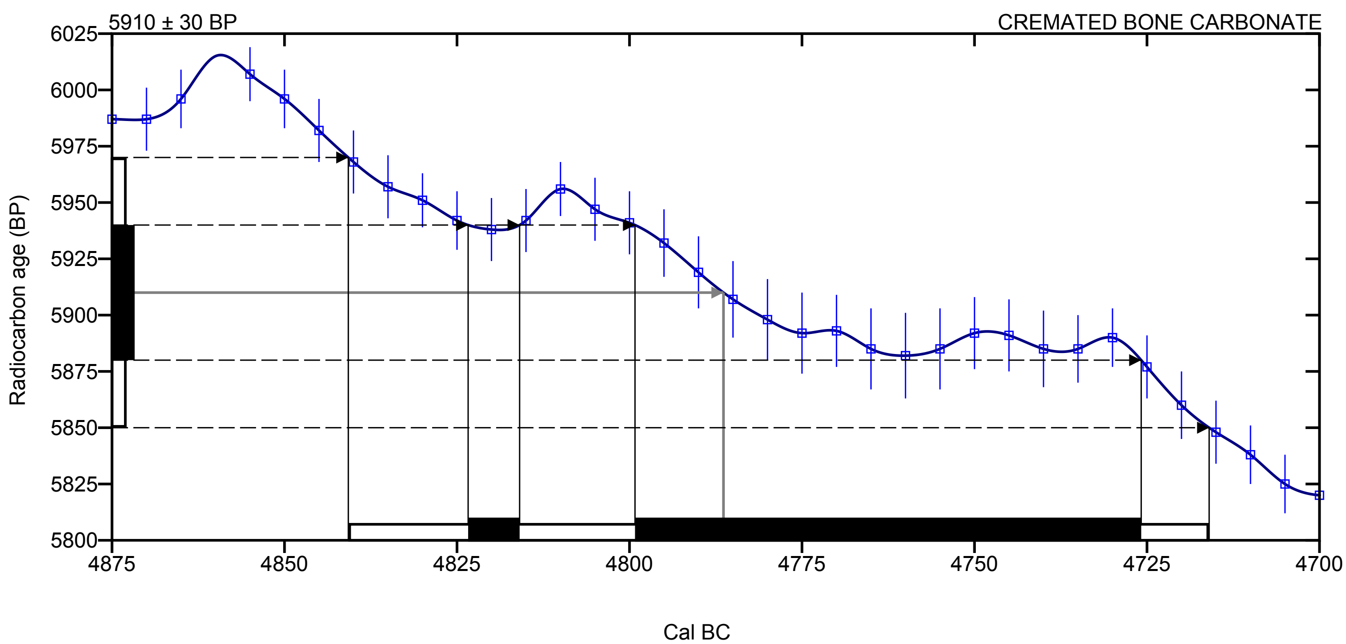
A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

References to INTCAL13 database

Reimer PJ et al. IntCal13 and Marine13 radiocarbon age calibration curves 0– 50,000 years cal BP. Radiocarbon 55(4):1869– 1887., 2013.

(Variables: C13/C12 = -15.3 o/oo : lab. mult = 1)

Laboratory number	**Beta-400914**
Conventional radiocarbon age	**5910 ± 30 BP**
2 Sigma calibrated result 95% probability	**Cal BC 4840 to 4715 (Cal BP 6790 to 6665)**
Intercept of radiocarbon age with calibration curve	Cal BC 4785 (Cal BP 6735)
1 Sigma calibrated results 68% probability	Cal BC 4825 to 4815 (Cal BP 6775 to 6765) Cal BC 4800 to 4725 (Cal BP 6750 to 6675)



Database used
INTCAL13

References
Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

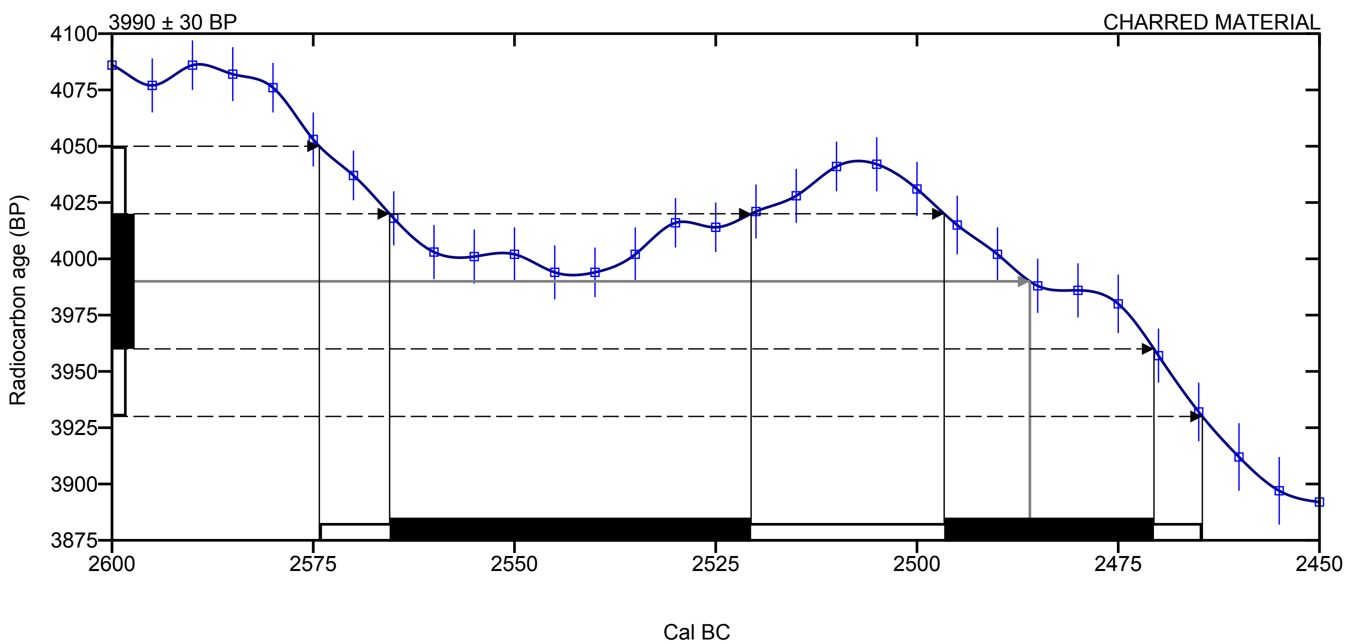
References to INTCAL13 database

Reimer PJ et al. IntCal13 and Marine13 radiocarbon age calibration curves 0– 50,000 years cal BP. Radiocarbon 55(4):1869– 1887., 2013.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -26.2 o/oo : lab. mult = 1)

Laboratory number	**Beta-400915**
Conventional radiocarbon age	**3990 ± 30 BP**
2 Sigma calibrated result **95% probability**	**Cal BC 2575 to 2465 (Cal BP 4525 to 4415)**
Intercept of radiocarbon age with calibration curve	Cal BC 2485 (Cal BP 4435)
1 Sigma calibrated results 68% probability	Cal BC 2565 to 2520 (Cal BP 4515 to 4470) Cal BC 2495 to 2470 (Cal BP 4445 to 4420)



Database used

INTCAL13

References

Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

References to INTCAL13 database

Reimer PJ et al. IntCal13 and Marine13 radiocarbon age calibration curves 0– 50,000 years cal BP. Radiocarbon 55(4):1869– 1887., 2013.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -18 o/oo : lab. mult = 1)

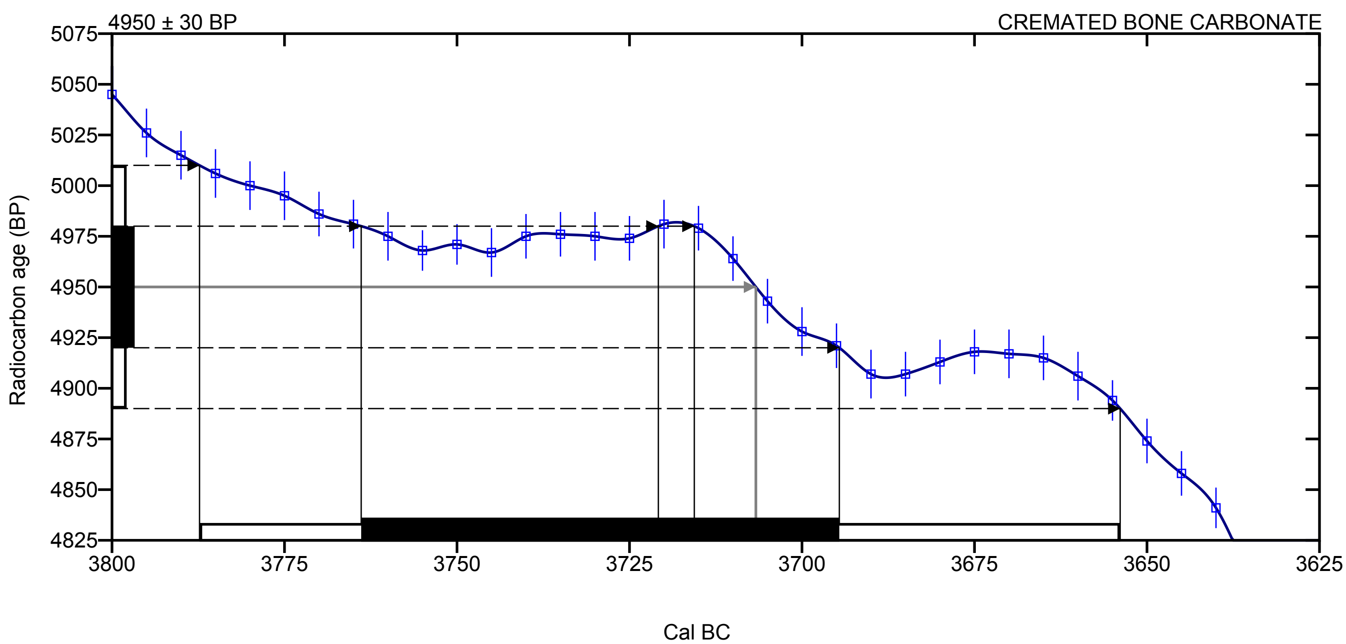
Laboratory number **Beta-400916**

Conventional radiocarbon age **4950 ± 30 BP**

2 Sigma calibrated result
95% probability **Cal BC 3785 to 3655 (Cal BP 5735 to 5605)**

Intercept of radiocarbon age with calibration curve Cal BC 3705 (Cal BP 5655)

1 Sigma calibrated results
68% probability Cal BC 3765 to 3695 (Cal BP 5715 to 5645)



Database used
INTCAL13

References
Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

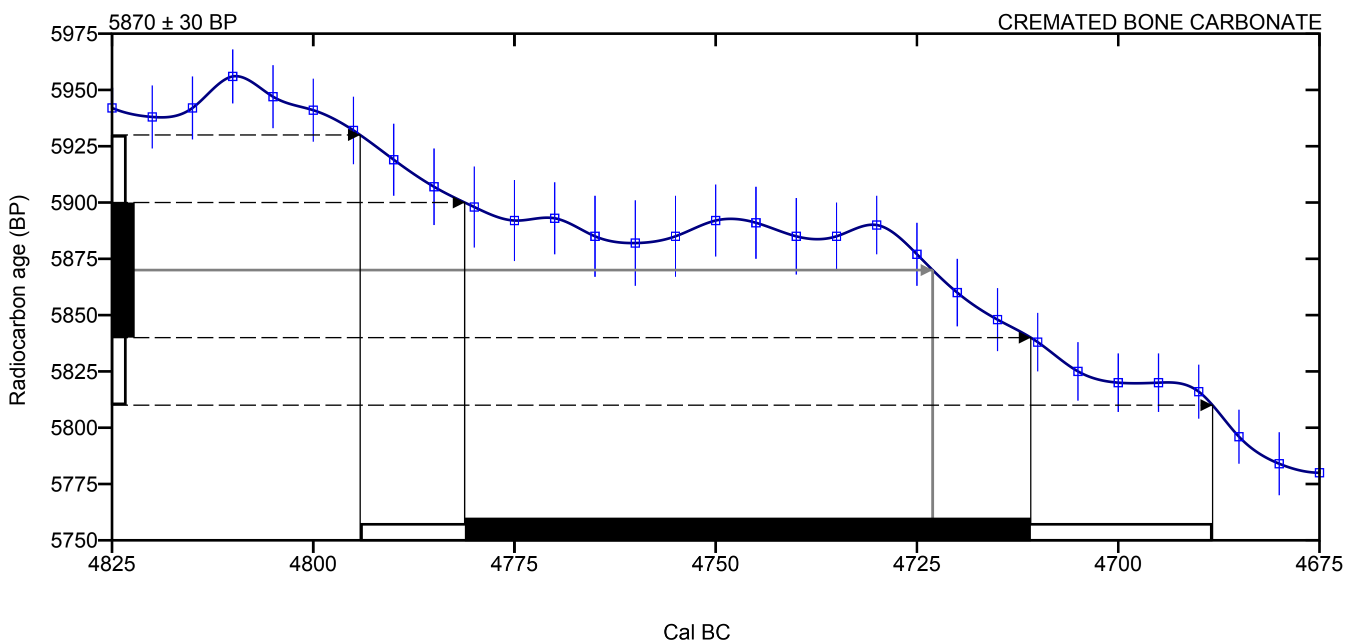
References to INTCAL13 database

Reimer PJ et al. IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP. Radiocarbon 55(4):1869–1887., 2013.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -25.4 o/oo : lab. mult = 1)

Laboratory number	**Beta-400917**
Conventional radiocarbon age	**5870 ± 30 BP**
2 Sigma calibrated result **95% probability**	**Cal BC 4795 to 4690 (Cal BP 6745 to 6640)**
Intercept of radiocarbon age with calibration curve	Cal BC 4725 (Cal BP 6675)
1 Sigma calibrated results 68% probability	Cal BC 4780 to 4710 (Cal BP 6730 to 6660)



Database used

INTCAL13

References

Mathematics used for calibration scenario

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Christopher Patrick
Deputy Directors

February 5, 2015

Mr. Frank Florin
Florin Cultural Resource Services
N12902 273rd Street
Boyceville, WI 54725
USA

RE: Radiocarbon Dating Result For Sample 280-2 XU20 10-20a

Dear Mr. Florin:

Enclosed is the radiocarbon dating result for one sample recently sent to us. As usual, specifics of the analysis are listed on the report with the result and calibration data is provided where applicable. The Conventional Radiocarbon Age has been corrected for total fractionation effects and where applicable, calibration was performed using 2013 calibration databases (cited on the graph pages).

The web directory containing the table of results and PDF download also contains pictures, a cvs spreadsheet download option and a quality assurance report containing expected vs. measured values for 3-5 working standards analyzed simultaneously with your samples.

The reported result is accredited to ISO/IEC 17025:2005 Testing Accreditation PJLA #59423 standards and all pretreatments and chemistry were performed here in our laboratories and counted in our own accelerators here in Miami. Since Beta is not a teaching laboratory, only graduates trained to strict protocols of the ISO/IEC 17025:2005 Testing Accreditation PJLA #59423 program participated in the analysis.

As always Conventional Radiocarbon Ages and sigmas are rounded to the nearest 10 years per the conventions of the 1977 International Radiocarbon Conference. When counting statistics produce sigmas lower than +/- 30 years, a conservative +/- 30 BP is cited for the result.

When interpreting the result, please consider any communications you may have had with us regarding the sample. As always, your inquiries are most welcome. If you have any questions or would like further details of the analysis, please do not hesitate to contact us.

The cost of the analysis was charged to the VISA card provided. Thank you. As always, if you have any questions or would like to discuss the results, don't hesitate to contact me.

Sincerely,

Darden Hood

Digital signature on file

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REPORT OF RADIOCARBON DATING ANALYSES

Mr. Frank Florin — Report Date: 2/5/2015

Florin Cultural Resource Services — Material Received: 1/22/2015

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 402513	60 +/- 30 BP	-22.3 o/oo	100 +/- 30 BP

SAMPLE : 280-2 XU20 10-20a
ANALYSIS : AMS-Standard delivery
MATERIAL/PRETREATMENT : (bone collagen): collagen extraction: with alkali
2 SIGMA CALIBRATION : Cal AD 1680 to 1735 (Cal BP 270 to 215) and Cal AD 1755 to 1760 (Cal BP 195 to 190) and Cal AD 1800 to 1935 (Cal BP 150 to 15) and Post AD 1950 (Post BP 0)

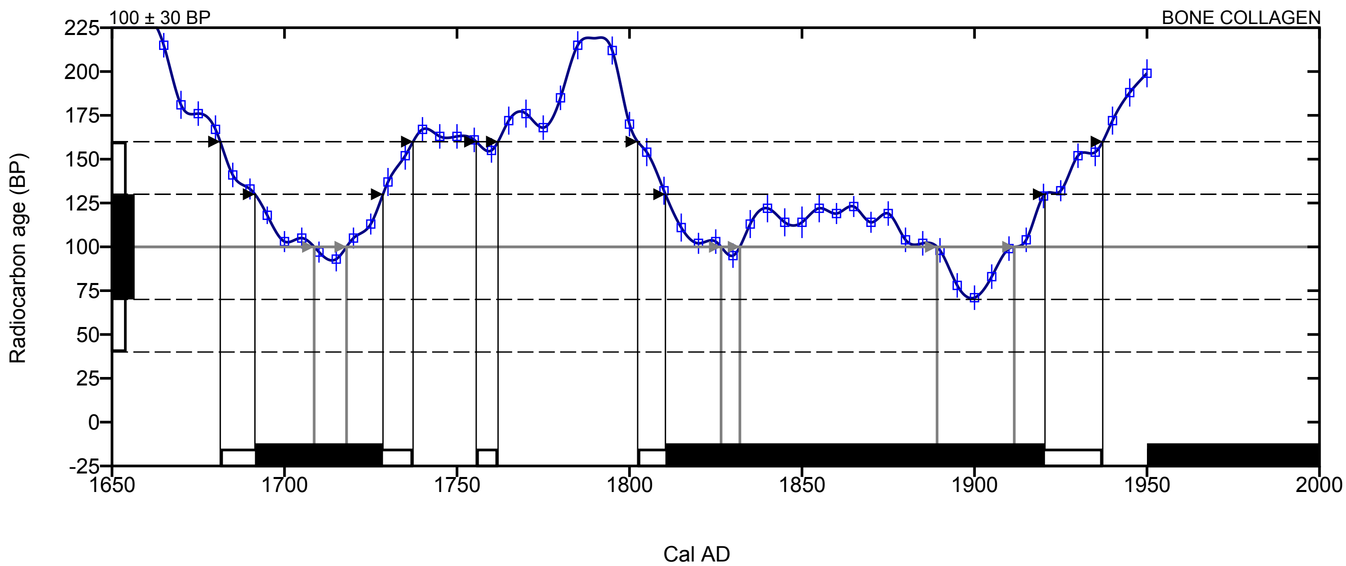
Dates are reported as RCYBP (radiocarbon years before present, "present" = AD 1950). By international convention, the modern reference standard was 95% the 14C activity of the National Institute of Standards and Technology (NIST) Oxalic Acid (SRM 4990C) and calculated using the Libby 14C half-life (5568 years). Quoted errors represent 1 relative standard deviation statistics (68% probability) counting errors based on the combined measurements of the sample, background, and modern reference standards. Measured 13C/12C ratios (delta 13C) were calculated relative to the PDB-1 standard.

The Conventional Radiocarbon Age represents the Measured Radiocarbon Age corrected for isotopic fractionation, calculated using the delta 13C. On rare occasion where the Conventional Radiocarbon Age was calculated using an assumed delta 13C, the ratio and the Conventional Radiocarbon Age will be followed by "*". The Conventional Radiocarbon Age is not calendar calibrated. When available, the Calendar Calibrated result is calculated from the Conventional Radiocarbon Age and is listed as the "Two Sigma Calibrated Result" for each sample.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -22.3 o/oo : lab. mult = 1)

Laboratory number	**Beta-402513**
Conventional radiocarbon age	**100 ± 30 BP**
Calibrated Result (95% Probability)	**Cal AD 1680 to 1735 (Cal BP 270 to 215)** **Cal AD 1755 to 1760 (Cal BP 195 to 190)** **Cal AD 1800 to 1935 (Cal BP 150 to 15)** **Post AD 1950 (Post BP 0)**
Intercept of radiocarbon age with calibration curve	Cal AD 1710 (Cal BP 240) Cal AD 1720 (Cal BP 230) Cal AD 1825 (Cal BP 125) Cal AD 1830 (Cal BP 120) Cal AD 1890 (Cal BP 60) Cal AD 1910 (Cal BP 40) Post AD 1950 (Post BP 0)
Calibrated Result (68% Probability)	Cal AD 1690 to 1730 (Cal BP 260 to 220) Cal AD 1810 to 1920 (Cal BP 140 to 30) Post AD 1950 (Post BP 0)



Database used

INTCAL13

References

Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

References to INTCAL13 database

Reimer PJ et al. IntCal13 and Marine13 radiocarbon age calibration curves 0– 50,000 years cal BP. Radiocarbon 55(4):1869– 1887., 2013.

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Deputy Directors

April 19, 2016

Mr. Frank Florin
Florin Cultural Resource Services
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Boyceville, WI 54725
USA

RE: Radiocarbon Dating Result For Sample 280-2 XU1 10-20

Dear Mr. Florin:

Enclosed is the radiocarbon dating result for one sample recently sent to us. As usual, specifics of the analysis are listed on the report with the result and calibration data is provided where applicable. The Conventional Radiocarbon Age has been corrected for total fractionation effects and where applicable, calibration was performed using 2013 calibration databases (cited on the graph pages).

The web directory containing the table of results and PDF download also contains pictures, a cvs spreadsheet download option and a quality assurance report containing expected vs. measured values for 3-5 working standards analyzed simultaneously with your samples.

The reported result is accredited to ISO/IEC 17025:2005 Testing Accreditation PJLA #59423 standards and all pretreatments and chemistry were performed here in our laboratories and counted in our own accelerators here in Miami. Since Beta is not a teaching laboratory, only graduates trained to strict protocols of the ISO/IEC 17025:2005 Testing Accreditation PJLA #59423 program participated in the analysis.

As always Conventional Radiocarbon Ages and sigmas are rounded to the nearest 10 years per the conventions of the 1977 International Radiocarbon Conference. When counting statistics produce sigmas lower than +/- 30 years, a conservative +/- 30 BP is cited for the result. The reported d13C was measured separately in an IRMS (isotope ratio mass spectrometer). It is NOT the AMS d13C which would include fractionation effects from natural, chemistry and AMS induced sources.

When interpreting the result, please consider any communications you may have had with us regarding the sample. As always, your inquiries are most welcome. If you have any questions or would like further details of the analysis, please do not hesitate to contact us.

The cost of the analysis was charged to the VISA card provided. Thank you. As always, if you have any questions or would like to discuss the results, don't hesitate to contact me.

Sincerely,

Darden Hood

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REPORT OF RADIOCARBON DATING ANALYSES

Mr. Frank Florin — Report Date: 4/19/2016

Florin Cultural Resource Services — Material Received: 4/8/2016

Sample Data	Measured Radiocarbon Age	d13C	Conventional Radiocarbon Age(*)
Beta - 435320	780 +/- 30 BP	-26.1 o/oo	760 +/- 30 BP

SAMPLE : 280-2 XU1 10-20
ANALYSIS : AMS-Standard delivery
MATERIAL/PRETREATMENT : (potsherd residue): acid/alkali/acid
2 SIGMA CALIBRATION : Cal AD 1220 to 1285 (Cal BP 730 to 665)

Dates are reported as RCYBP (radiocarbon years before present, "present" = AD 1950). By international convention, the modern reference standard was 95% the 14C activity of the National Institute of Standards and Technology (NIST) Oxalic Acid (SRM 4990C) and calculated using the Libby 14C half-life (5568 years). Quoted errors represent 1 relative standard deviation statistics (68% probability) counting errors based on the combined measurements of the sample, background, and modern reference standards. Measured 13C/12C ratios (delta 13C) were calculated relative to the PDB-1 standard.

The Conventional Radiocarbon Age represents the Measured Radiocarbon Age corrected for isotopic fractionation, calculated using the delta 13C. On rare occasion where the Conventional Radiocarbon Age was calculated using an assumed delta 13C, the ratio and the Conventional Radiocarbon Age will be followed by "*". The Conventional Radiocarbon Age is not calendar calibrated. When available, the Calendar Calibrated result is calculated from the Conventional Radiocarbon Age and is listed as the "Two Sigma Calibrated Result" for each sample.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -26.1 o/oo : lab. mult = 1)

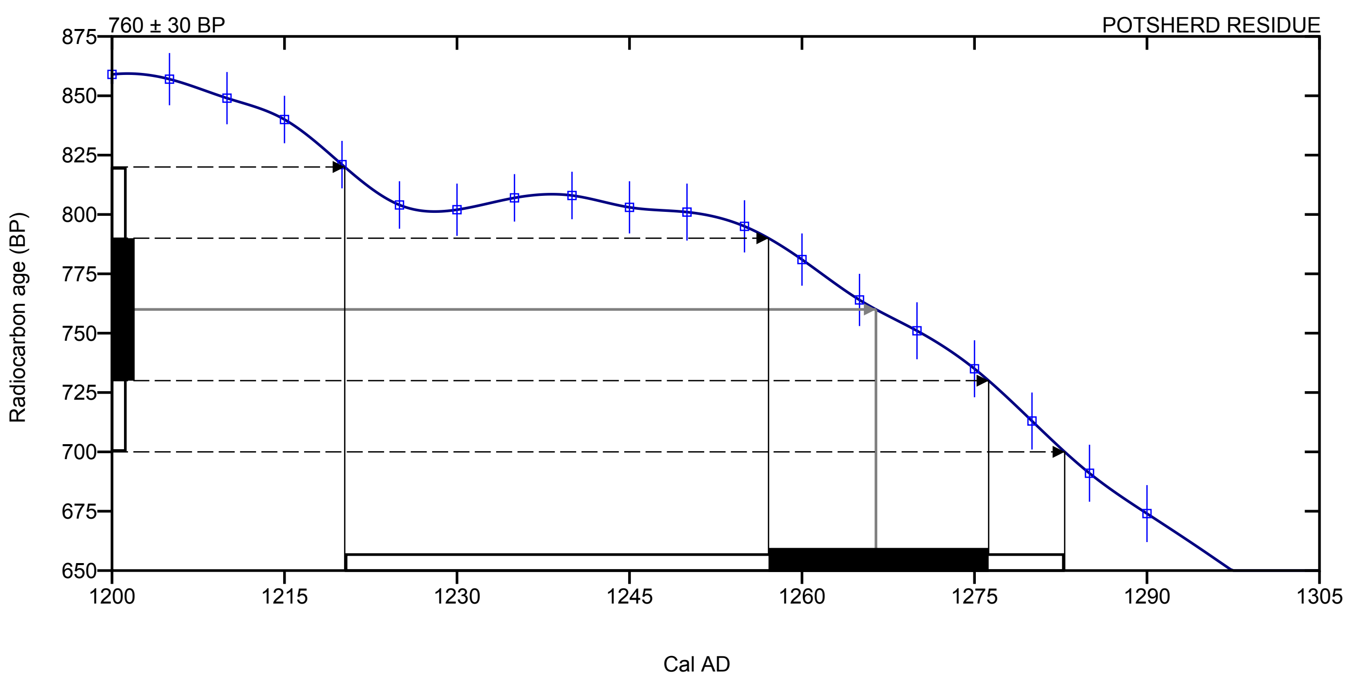
Laboratory number **Beta-435320 : 280-2 XU1 10-20**

Conventional radiocarbon age **760 ± 30 BP**

Calibrated Result (95% Probability) **Cal AD 1220 to 1285 (Cal BP 730 to 665)**

Intercept of radiocarbon age with calibration curve Cal AD 1265 (Cal BP 685)

Calibrated Result (68% Probability) Cal AD 1255 to 1275 (Cal BP 695 to 675)



Database used

INTCAL13

References

Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

References to INTCAL13 database

Reimer PJ et al. IntCal13 and Marine13 radiocarbon age calibration curves 0– 50,000 years cal BP. Radiocarbon 55(4):1869– 1887., 2013.

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Deputy Directors

May 17, 2016

Mr. Frank Florin
Florin Cultural Resource Services
N12902 273rd Street
Boyceville, WI 54725
USA

RE: Radiocarbon Dating Result For Sample 280-5 F1 20-35

Dear Mr. Florin:

Enclosed is the radiocarbon dating result for one sample recently sent to us. As usual, specifics of the analysis are listed on the report with the result and calibration data is provided where applicable. The Conventional Radiocarbon Age has been corrected for total fractionation effects and where applicable, calibration was performed using 2013 calibration databases (cited on the graph pages).

The web directory containing the table of results and PDF download also contains pictures, a cvs spreadsheet download option and a quality assurance report containing expected vs. measured values for 3-5 working standards analyzed simultaneously with your samples.

The reported result is accredited to ISO/IEC 17025:2005 Testing Accreditation PJLA #59423 standards and all pretreatments and chemistry were performed here in our laboratories and counted in our own accelerators here in Miami. Since Beta is not a teaching laboratory, only graduates trained to strict protocols of the ISO/IEC 17025:2005 Testing Accreditation PJLA #59423 program participated in the analysis.

As always Conventional Radiocarbon Ages and sigmas are rounded to the nearest 10 years per the conventions of the 1977 International Radiocarbon Conference. When counting statistics produce sigmas lower than +/- 30 years, a conservative +/- 30 BP is cited for the result. The reported d13C was measured separately in an IRMS (isotope ratio mass spectrometer). It is NOT the AMS d13C which would include fractionation effects from natural, chemistry and AMS induced sources.

When interpreting the result, please consider any communications you may have had with us regarding the sample. As always, your inquiries are most welcome. If you have any questions or would like further details of the analysis, please do not hesitate to contact us.

The cost of the analysis was charged to the credit card provided. Thank you. As always, if you have any questions or would like to discuss the results, don't hesitate to contact me.

Sincerely,

Darden Hood

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REPORT OF RADIOCARBON DATING ANALYSES

Mr. Frank Florin — Report Date: 5/17/2016

Florin Cultural Resource Services — Material Received: 5/9/2016

Sample Data	Measured Radiocarbon Age	d13C	Conventional Radiocarbon Age(*)
Beta - 437072	1180 +/- 30 BP	-24.1 o/oo	1190 +/- 30 BP

SAMPLE : 280-5 F1 20-35
ANALYSIS : AMS-Standard delivery
MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid
2 SIGMA CALIBRATION : Cal AD 725 to 740 (Cal BP 1225 to 1210) and Cal AD 770 to 895 (Cal BP 1180 to 1055) and Cal AD 925 to 940 (Cal BP 1025 to 1010)

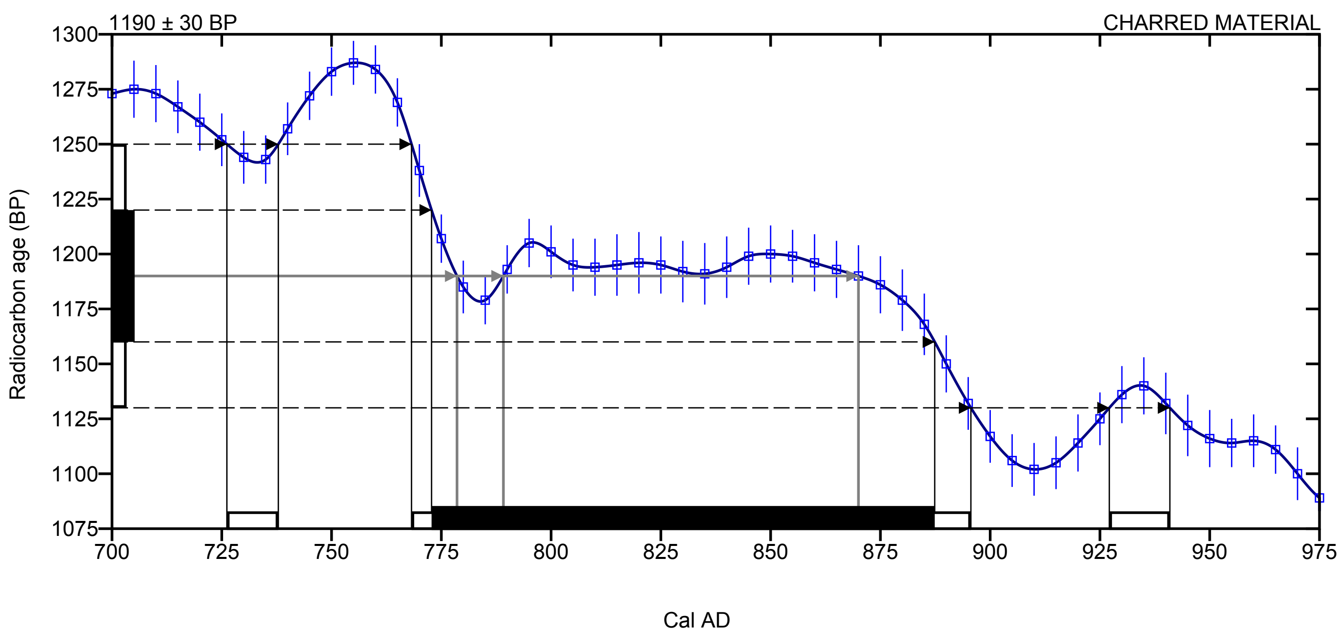
Dates are reported as RCYBP (radiocarbon years before present, "present" = AD 1950). By international convention, the modern reference standard was 95% the 14C activity of the National Institute of Standards and Technology (NIST) Oxalic Acid (SRM 4990C) and calculated using the Libby 14C half-life (5568 years). Quoted errors represent 1 relative standard deviation statistics (68% probability) counting errors based on the combined measurements of the sample, background, and modern reference standards. Measured 13C/12C ratios (delta 13C) were calculated relative to the PDB-1 standard.

The Conventional Radiocarbon Age represents the Measured Radiocarbon Age corrected for isotopic fractionation, calculated using the delta 13C. On rare occasion where the Conventional Radiocarbon Age was calculated using an assumed delta 13C, the ratio and the Conventional Radiocarbon Age will be followed by "*". The Conventional Radiocarbon Age is not calendar calibrated. When available, the Calendar Calibrated result is calculated from the Conventional Radiocarbon Age and is listed as the "Two Sigma Calibrated Result" for each sample.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -24.1 o/oo : lab. mult = 1)

Laboratory number	**Beta-437072 : 280-5 F1 20-35**
Conventional radiocarbon age	**1190 ± 30 BP**
Calibrated Result (95% Probability)	**Cal AD 725 to 740 (Cal BP 1225 to 1210)** **Cal AD 770 to 895 (Cal BP 1180 to 1055)** **Cal AD 925 to 940 (Cal BP 1025 to 1010)**
Intercept of radiocarbon age with calibration curve	Cal AD 780 (Cal BP 1170) Cal AD 790 (Cal BP 1160) Cal AD 870 (Cal BP 1080)
Calibrated Result (68% Probability)	Cal AD 775 to 885 (Cal BP 1175 to 1065)



Database used

INTCAL13

References

Mathematics used for calibration scenario

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References to INTCAL13 database

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Beta Analytic Radiocarbon Dating Laboratory

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