Phase III Data Recovery

for the

Rogers Prehistoric Site

performed as part of the

Water System Improvements Project Village of Sherburne, Chenango County, New York

PR # 03PR03325

prepared for

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Executive Summary

A Phase III data recovery has been performed for the Rogers Prehistoric Site, located on the edge of a gravel terrace at the Rogers Environmental Center near the Village of Sherburne, Chenango County, New York. The data recovery consisted of three components: The first component consisted of geoarchaeological investigations conducted with soil probes and later backhoe trenching to establish a geomorphic context and to look for macrofloral or paleobotanical remains that may be of use in paleoenvironmental reconstruction. The second component involved the excavation of 15 1 x 1 m square excavation units in the vicinity of the proposed new well house and parking area. Finally, after these other studies are completed, a third phase involving mechanized scraping along the proposed water main corridor and access road was completed.

The first component of the data recovery, the geoarchaeological investigations, initially met with limited success, since the soil cores proposed were not able to extend into the loose gravelly fill of the terraces. Undiscouraged, two backhoe trenches were excavated later that season to examine the stratigraphy and look for pollen and macrofloral remains. This did ultimately yield a large sample of desiccated leaves and other organic matter, which was radiocarbon dated to 1,145 ± 20 BP (ISGS-A0666). While pollen was present in the sample, the taxonomic identification of the plant remains or the results of the pollen analysis were not yet completed at the time of the report completion.

The geoarchaeological investigations were able to provide valuable information about the geomorphic context of the landforms on and directly adjacent to the site, and also provided a radiocarbon date that provided a rough idea of when the scarp along the southern and eastern edges of the site was produced. The geoarchaeological investigations were especially successful in aiding in the interpretation some of the biotic and other natural processes that helped to shape the site. Most notably, the presence of tree throws along the upper terrace, which were identified in many of the units excavated, helping to explain some of the uneven stratigraphy that we encountered. Conclusions of the geoarchaeological study tentatively indicated that the site was situated in a biomantle, whereby little erosion or deposition was taking place, thus leaving time for the upper soils to be affected by natural processes, such as the tree throws described above.

The second component involved the excavation of 15 1 x 1 m excavation units directly where the new well house and parking area are proposed. These investigations provided a host of new information about the site, both by the large number and diversity of artifacts recovered as well as the identification of five prehistoric cultural features. The placement of many of the units contiguous to one another allowed us to examine larger areas, without which, it would have been very difficult to identify features or examine larger stratigraphic profiles. While the results indicated that much of the site area appeared to have been heavily modified by tree throws and other forms of floralturbation and biotic activity, other areas appeared relatively undisturbed.

The third and final component of the data recovery involved the mechanized stripping of the topsoil to look for cultural features and artifacts. Results of this component were very successful, and allowed for the identification of three cultural features all dating to the Late Woodland Period. The component also identified a number of artifact finds which were individually piece plotted, including a cluster of artifacts near the northern site boundary, where few had been found previously (Figure 20). In addition, a volumetric bucket sampling strategy was developed and implemented from the scraping, with two leveled 5 gallon buckets taken and screened through hardware cloth in 2 m intervals along the entire length of the mechanized scraping area. This latter methodology proved much more time consuming than was planned, although the results provided systematic information about artifact density and recovered a large number of artifacts (n=1,005), including 5 bifaces, a chert core, and 15 fragments of FCR.

Taken as a whole, the information obtained as part of the data recovery was able to address a number of research questions posed as part of the DRP. The results indicate that the site was used seasonally as a base camp or resource extraction center from the Late Archaic through the Late Woodland period. Chipped stone debitage recovered from the site suggested small scale tool manufacturing and maintenance was taking place more regularly than earlier stage lithic reduction, which is less represented in the record. This also suggests that the majority of the lithic raw material was being brought to the site rather than being obtained or quarried in the close vicinity. While the majority of the bifacially worked tools were not temporally diagnostic, heavy wear and edge damage suggests that these tools were actively used at the site rather than being freshly manufactured for use at a later date.

On the basis of radiocarbon dates and diagnostic artifacts recovered from the site, it would appear that the Roger Prehistoric Site represents a seasonal base camp occupied intermittently between the Middle Archaic through Late Woodland period. The Archaic occupation is only represented by two diagnostic point finds: a Brewerton Side Notched point dating the Middle Archaic and a Snook Kill point dating to the Late Archaic. No radiocarbon dates or features could be assigned to this earlier Archaic occupation.

A strong Early and Middle Woodland component is implied by a series of radiocarbon dates from Feature 3 (1950 ± 40 BP), Feature 4 (2380 ± 50 BP), and Feature 5 (2470 ± 40 BP), as well as the recovery of a fragment of a Meadowood projectile point.

While Meadowood points occur infrequently in the region, they do occur in collections from the Chenango Valley as noted by the members of the Chenango chapter of the NYSAA and at the Longyear Museum in nearby Hamilton. While Early Woodland point styles occur infrequently in the Chenango Valley, radiocarbon dates from this period are even less common. The nearest comparable radiocarbon dates included in Funk's study are the Maple Terrace Site, which recovered a date of 2630 ± 70 BP in association with a Meadowood point and some Vinette I pottery, the Kuhr No. 1 Site, which yielded a date of 2330 ± 85 BP in association in Vinette I pottery, and the Cottage Site, which recovered a date of 1810 ± 100 years BP in association with a broad stemmed projectile point thought to be associated with the Bushkill complex or possibly a Canoe Point occupation.

These radiocarbon dates from the Rogers Prehistoric Site fill several gaps in Funk's published radiocarbon sequences for the Upper Susquehanna and its tributaries and make a strong contribution to our understanding of the prehistoric of the valley during this period.

In addition to the Early and Middle Woodland components, a Late Woodland component, represented a by a grit-tempered, cord-impressed pottery sherd and three small cultural features (Features 6-8) was identified as part of the mechanized scraping along the proposed water line. Radiocarbon samples from each of these features yielded dates of 850+/-40 BP, 760+/40 BP, and 350+/-60 BP, respectively. While these features appear fire related on the basis of the large amounts of charcoal and fire cracked rock recovered from their contents, they are all relatively small in comparison with the earlier features. As a result, it is unclear if these features represent hearths or fire pits or if they are associated with roasting and food preservation.

One of the most interesting aspects of the findings as part of the data recovery has to do with the seasonality of the occupations implied by the macrofloral remains recovered from the feature fill. While we suspect that the site was also occupied in the spring and early summer, the results of the macrofloral analysis only suggest occupation in the late summer/fall months, when raspberries/blackberries, elderberries, many types of grass seeds, and hickory nuts and walnuts are available (Appendix E). This could be due to biases in preservation within the features. The results of lithic use wear analysis suggest that while butchering and hide processing were likely taking place at the site (both common activities in the late fall and winter), other tools show evidence of working on different surfaces, and artifacts such as the drill fragments, pebble/cobble tools, and the netsinker all suggest that other activities were also taking place. Additionally, while expended cores and debitage of all sizes were found at the site, none of the biface fragments recovered suggest that classic Early Woodland cache blades were being produced at the site, which, according the Granger (1978), was a classic late fall activity during Meadowood times, when people would make preparations for the upcoming hunting season.

If the Rogers Prehistoric Site was only occupied in the late fall, it suggests that Early and Middle Woodland people in the Chenango Valley were less sedentary, and that seasonal mobility was more complex, with people occupying areas for shorter periods, and with fewer seasonal reoccupations. Under traditional models of Woodland development, patches of small grass seeds were often visited and maintained in the spring to produce better harvests when they returned in the fall. The adoption of agriculture in the Eastern Woodlands has been postulated to derive from increased sedentism created by people tending these new semi-domesticates longer as it begins to play a more significant role in their diets. While it appears that Woodland people were likely procuring and processing wild grass seeds at the site, the amount of labor involved in the exercise and the significance of small grass seeds in their overall diets is not fully understood.

While the data recovery at the Rogers Prehistoric Site answered many questions that we had about the site, some of our findings pose further questions and suggest possibilities for future research in the region. It is unfortunate that so little professional research has been conducted in the upper drainage. While the Public Archaeology Facility has been conducting research in the valley for many years, the majority of the prehistoric sites that have been encountered have been avoided as a result of their investigations. While avoidance is clearly the preferred alternative, the initial results of the Phase I surveys do not provide the kind of radiocarbon or macrofloral information necessary to compare the information obtained from the Rogers site with other known sites along other landforms near the Village of Sherburne. Consequently, it is exceedingly difficult to accurately place the role of the Rogers Prehistoric Site as it relates to other associated sites which occur nearby. Once more information is obtained as part of other investigations the area, a more complete picture of the prehistoric in the northern Chenango drainage will likely emerge.

Another aspect that has not been fully addressed as part of the data recovery is the overall size of the Rogers Site, since testing outside of the area of potential effects (APE) was not within the scope of the current study. The fact that high densities of relatively small size flakes were recovered throughout the proposed well site suggests that additional archaeological finds would likely occur in all directions, and that the staff of the Rogers Environmental Center should take great care to avoid impacting adjacent areas through ground disturbance.

The data recovery at the Rogers Prehistoric Site has produced important new information about the prehistory of the regions, most notably with its contributions to the known radiocarbon chronology and evidence of seasonal patterning. As a result, the data obtained from this study can be used to provide a valuable baseline for future investigations by providing systematically recovered information that can be compared with newly discovered and investigated sites in the upper Chenango Valley.

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Introduction

The Rogers Prehistoric Site is located on the southern edge of a glacial terrace overlooking the Chenango River near the Village of Sherburne in Chenango County, New York (Figures 1-3; Photos 1-3; Appendix G). The site is located on the grounds of the Rogers Environmental Education Center, which has been operated by the New York State Department of Environmental Conservation since 1966. The Rogers Prehistoric Site was initially identified as part of a Phase I cultural resources survey conducted as part of water system improvements for the Village of Sherburne (Moyer and Moyer 2005).

One of the proposed water system improvements involves modifications to the existing well site at the Rogers Environmental Center. Proposed construction at the well site involves construction of a small structure over the existing well to house a pump as well as the installation of 4,250 linear ft of water main through DEC lands to connect with the village water system along State Route 80. Other construction plans at the well site include creating a paved access road leading to the site and the construction of a chain link fence around the structure and well site. No trees greater than two inches in diameter will be impacted by the proposed construction and efforts will be made to minimize the visual impact of the proposed project.

Upon consultation with OPRHP, DEC, and the State Museum, it was determined that the site was potentially eligible for inclusion in the National Register of Historic Places under Criterion D for its ability to provide valuable information about prehistoric life along the Chenango River Valley and that additional Phase II site examinations were warranted. Work for the Phase II began in February 2004 after Section 233 permitting was approved by the New York State Museum, DEC, and NYSOPRHP. A curation agreement with the New York State Museum for all artifacts recovered was also accepted prior to initiation of fieldwork. Due to the density and type of artifacts recovered after 3.5 days of Phase II fieldwork, the Phase II was halted. After meeting on March 28, 2004 with Tom Turner, Rick Gell, Chuck Vandrei, Alan Maples, Dr. Christina Reith, and Doug Mackey it was determined that Phase III data recovery is necessary, as the site could not be avoided. Because it was not possible to avoid the site due to its location within the existing well field, a Data Recovery Plan (DRP) was developed and accepted in consultation with OPRHP, the New York State Museum, and the New York State Department of Environmental Conservation. As the site is located on State owned land, a NYSM Sec. 233 permit was obtained prior to the data recovery.

This report provides the results of the data recovery, including the environmental and other contextual information used to help interpret any findings. In addition to providing the results of the field investigations, the report also details the features, artifacts and other findings resulting from the investigations, and uses this information to address specific research questions about past activities and lifeways.

Environmental Setting

Since the site is located on an environmental education center, special efforts were made to try to obtain as much paleoenvironmental information as possible to help environmental educators explain the past environmental changes that led to the current landscape and environment visible today. As part of the data recovery, a series of soil cores were proposed within the site area to address issues of stratigraphy and soil formation and to look for potential pollen and/or phytolith samples.

On January 4th of 2005, prior to the excavation of any units, a series of soil core samples were attempted by Juliann Van Nest of the New York State Museum but were stopped by large rocks and loose cobbles and were ultimately determined too sandy for pollen or phytolith samples to be present. In order to supplement the limited data obtained from the core samples, two backhoe trenches were excavated along the Holocene terrace to the east of the site in hopes of obtaining macrofloral remains and to determine if the site continued on to the terrace below. The first backhoe trench was excavated east from the southern edge of the scarp. Excavations along the Holocene terrace were limited by the low water table (Figure 5). Soils appeared to follow the contour of the surface topography, with dark colored sandy silt overlaying lighter colored loamy clay and gravelly sands (Photos 4, 6 and 7). While no charcoal or evidence of organic remains were evident in this trench, a small chert flake was identified on the north wall in the western end of the trench, confirming that prehistoric artifacts occur on this lower terrace as well (Photo 5). A second backhoe trench was excavated to the east of Test Trench 1 (Photos 8 and 9). Soils in this trench roughly conformed with those in the previous trench, with darker colored sandy silt overlaying lighter colored loamy clay (Figure 6). A small amount of charcoal was visible in the west wall of the trench (Photo 10). This charcoal, as well as some partially decomposed leaves, was also recovered from the bottom of Test Trench 2 (Photo 11). A radiocarbon date of 1,145 ± 20 BP (ISGS-A0666) was obtained from the charcoal sample, suggesting that the floodplain below was younger than some of the archaeological deposits on the terrace upon which the site is situated. More information about this date and its relationship to the other findings is provided in further detail in the following sections.

At the time of the completion of this report, the results of the pollen counts and the taxonomic identification of the macrofossils have not been completed and are still undergoing analysis at the New York State Museum. No report of findings other than the radiocarbon date have been made to date. As a result, an earlier geoarcheological report that does not integrate the results of the backhoe trenching or the pollen and macrofossil analysis is provided in Appendix F.

Geomorphic Context

Glaciers covered the Chenango Valley during the Late Wisconsinan period. The Pleistocene geology of the valley has been studied in some detail by Cadwell, who has suggested a "valley ice tongue" retreat for the Chenango drainage. Under this model, thicker ice within the valleys extended farther south than the thinner upland ice (Cadwell 1972:20). As the glaciers melted, they released very large volumes of water with large amounts of sediment, which produced a complex geomorphic situation involving the mixing and cutting of sands, gravel and finer silts. In addition, ice jams along the valley walls acted as dams allowing lacustrine clay and silt to accumulate, although there is no evidence of this in the upper soils encountered at the Rogers Site. Most if not all of the Pleistocene deposits in the Chenango Valley are thought to be Late Wisconsinan in age.

Few early radiocarbon dates exist from the Chenango drainage. Van Nest (See Appendix F) notes a radiocarbon date of 16,650 ± 180 BP (BGS-86) on "organic material from a depth of 31 feet in kettle hole bog, 5 feet above gravel" in an upland setting near Chenango Forks, suggesting that the ice must have retreated by that time. It would appear based upon the timing of the final retreat of the ice margin that the area would have been unglaciated by the time the earliest paleoindian foragers would have entered central New York State.

The Rogers Prehistoric Site is situated at the edge of a gravel kame terrace approximately 700 ft north of the Chenango River. The Chenango Valley is located within the Glaciated Allegany Plateau physiographic region and drains into the Chesapeake Bay watershed via the Susquehanna River. The gravel terrace is broad, with gently sloping topographic remnants of bars and swales typical along kame terraces. The edge of the terrace at the site is between approximately 1,055 and 1,057 ft above sea level, some 5-15 ft above the younger, Holocene terrace below. The scarp is fairly steep and well defined at the site, but slopes more gently to the north of the site, and probably dips down below the comparatively level floodplain.

The geoarchaeology report for the project indicated that the particular meander bend that cuts the terrace at the Rogers site is probably older than much of the rest of the floodplain adjacent to the southeast (See Appendix F). While the actual date of the kame deposits are not known with certainty, they are clearly older than the floodplain date obtained from the plant macrofossils of 1,145 ± 20 BP, since dates as early as 2470+/-40BP have been obtained from the cultural features at the site. This suggests a period of at least a thousand years of relative landform stability along the terrace, which would have given time for biotic processes to begin soil alteration.

Soils and Stratigraphy

The Chenango County NRCS Office maps three soil types as occurring within boundaries of the Rogers Prehistoric Site (Figure 4). Phelps series soils (map unit PhA) are mapped as occurring throughout the northern and central part of the site. Phelps soils consist of very deep, moderately well drained soils formed in glacial outwash (Crandall 1985:93). They are nearly level and gently sloping soils formed in loamy material overlying calcareous, stratified gravel and sand. A typical profile of Phelps gravelly loam is as follows:

Table 1. Typical soil profile of Phelps gravelly loam.

Horizon	Depth	Description
Ap	0-9 in. (0-23 cm)	very dark grayish brown (10YR 3/2) gravelly loam; moderate medium granular structure; friable; 25 percent rock fragments.
Bt/E	9-14 in. (23-36 cm)	dark yellowish brown (10YR 4/4) gravelly loam; moderate medium subangular blocky structure; friable.
Bt	14-25 in. (36-64 cm)	dark reddish brown (5YR 3/3) gravelly clay loam; moderate medium subangular blocky structure; friable and sticky.
B/C	25-34 in. (64-86 cm)	dark reddish brown (5YR 3/3) gravelly clay loam; weak coarse subangular blocky structure; friable and sticky.
2C	34-60 in. (86-152 cm)	brown (7.5YR 4/2) stratified gravel and sand; single grain; loose; 40 percent rock fragments.
Bx2	36-72 in. (152-183 cm)	brown (7.5YR 4/3) channery silt loam; moderate very coarse prismatic structure; 45 percent rock fragments.

Hamlin series soils (map unit Ha) consist of very deep, well-drained soils formed in alluvium on flood plains and high bottoms (Crandall 1985:87). These soils are mapped only along the southern edge of the site boundary along the lower floodplain. A typical profile of Hamlin silt loam is as follows:

Table 2. Typical soil profile of Hamlin silt loam.

Horizon	Depth	Description
Ap	0-9 in. (0-23 cm)	dark gray (10YR 4/1) silt loam; moderate coarse and medium granular structure; friable.
Bw1	9-20 in. (23-51 cm)	dark grayish brown (10YR 4/2) silt loam; weak medium and coarse prismatic parting to weak fine subangular blocky structure.
Bw2	20-36 in. (51-91 cm)	brown (10YR 5/3) silt loam; weak coarse prismatic structure; friable.
C	36-85 in. (91-216 cm)	dark grayish brown (10YR 4/2) silt loam; few fine distinct dark yellowish brown (10YR 4/4) iron accumulations in the matrix.

The southeastern corner of the Rogers Prehistoric Site is mapped as Wayland silt loam (map unit Wa). Wayland series soils consist of very deep, poorly drained and nearly level soils formed in recent alluvium (Crandall 1985:101). These soils are in low areas or slackwater areas on flood plains. A typical profile of Wayland silt loam is as follows in Table 3:

Table 3. Typical soil profile of Wayland silt loam.

Horizon	Depth	Description
A	0-6 in. (0-15 cm)	very dark grayish brown (10YR 3/2) silt loam; strong medium and coarse granular structure; friable.
Bg1	6-12 in. (15-30 cm)	dark grayish brown (10YR 4/2) silt loam; weak fine and medium subangular blocky structure; friable.
Bg2	12-18 in. (30-46 cm)	grayish brown (10YR 5/2) silt loam; weak fine and medium subangular blocky structure; friable.
C1	18-46 in. (46-117 cm)	grayish brown (10YR 5/2) silt loam; weak fine and medium subangular blocky structure; friable.
C2	46-72 in. (117-183 cm)	gray (5Y 6/1) silty clay loam; massive; firm in place, slightly plastic; strong brown (7.5YR 5/8) masses of iron accumulation.

Because the vast majority of the site that will be impacted is located at the top of the scarp in what are mapped as Phelps series soils, prehistoric cultural deposits would likely be limited to the uppermost 64 cm overlaying the Pleistocene age gravels. However, it was quickly noted as the unit excavations progressed, that the boundary separating the B and C horizons was unusually irregular, as shown by the deeply incised channels and pits occurring in the soil profiles of these excavation units (Figures 8-11). Upon consultation with Juliann Van Nest of the NYSM, it was decided that these pronounced pits were likely the work of tree tips. Tree tipping is usually the result of storm damage whereby trees are blown over by strong winds, causing the roots to invert the soil above and below the root system (Figure 12). Tree tipping most commonly occurs in tree species with shallow root systems or in areas where shallow bedrock is apparent.

The effects of tree tips are not commonly discussed in the archaeological literature, although the results can have serious impacts on the contexts in which archaeological deposits are encountered. Tree falls can move large amounts of soil and can push relatively shallow artifacts much deeper below the ground surface than plowing and other agricultural activities might otherwise do. Additionally, tree tips can alter the shape or composition of prehistoric cultural features, and the cavity created by the fallen tree can become filled with organic matter, creating dark soils that resemble deep pits. Over the course of millennia, successive tree growth and tips have the potential to alter broad areas of the landscape.

Prehistoric Context

The following section provides a history of archaeology in the Chenango Valley as well as a brief overview of culture and environmental change over the last 12,000 years. Because the results of the pollen analysis were not yet completed at the time of this writing, much of the environmental information was derived from Lewis and Funk's (1993) study of pollen from the Upper Susquehanna Valley. While none of the four areas examined as part of their study was especially close to the Rogers Prehistoric Site, with the nearest location examined, Lake Misery, located approximately 35 miles east near the town of Morris in Otsego County, these are also applicable to the current study area as well.

The Chenango Valley has long been known as an area with a large number of prehistoric sites. Squier noted in 1849 that:

> *There is also a place at Norwich on a high bank of the river called the Castle, where the Indians lived at the period of our settlement of the country, and where some of the vestiges of a fortification appear, but in all probability of a much more modern date than those at Oxford.* (Squier 1851:47).

A check of information on file at the New York State Office of Parks, Recreation, and Historic Preservation offices including copies of notes from the New York State Museum indicated that 27 prehistoric sites are known in the vicinity of Sherburne, attesting to the high prehistoric sensitivity of the area. Some of these sites were originally reported by local collectors almost a hundred years ago, while others were identified more recently. While few sites were known in the valley at the beginning of the 20th century, the number of sites recorded increased greatly with the formation of the Chenango Chapter of the New York State Archaeological Association in 1950, which collected information about different sites and collections in the area. Beginning in the late 1970s, archaeologists from the Public Archaeology Facility (PAF) at Binghamton University conducted a series of investigations in Sherburne, resulting the recordation of five prehistoric sites (Public Archaeology Facility 1977, 1995, 1988, 1999a, 1999b, 1999c).All of these sites were identified as part of highway improvements.

Cultural Chronology

Glaciers covered the Chenango Valley during the Late Wisconsinan period, which ended about 12,000 years ago. It is unclear when these glaciers last retreated. Cadwell (1972:223) cites a radiocarbon date of 16,650 ± 180 BP (BGS-86) on "organic material from a depth of 31 feet in kettle hole bog, 5 feet above gravel" in an upland setting near Chenango Forks, suggesting that the ice must have retreated by that time. People may have begun occupying the area soon after the glaciers retreated. These earliest people, known by archaeologists as Paleoindians, were organized in highly mobile bands adapted to tundra and boreal forest environments. While archaeologists have traditionally emphasized the hunting of large megafauna such as mammoth and bison, there is increasing evidence that Paleoindians exploited a diverse array of small game and wild plants. Ritchie (1994: 4–5) notes several fluted point finds indicative of Paleoindian occupation throughout Chenango County, although the majority of these sites are located further south along the Unadilla and Susquehanna Rivers. Whitney (1977) conducted a survey of fluted point finds in the vicinity, but noted no finds were noted in the vicinity of Sherburne.

Around 7000 B.C., stands of Spruce and Fir rapidly gave way to a denser forest of Pine and deciduous trees, with Oak becoming a dominant species. This drier climate supported less game and provided fewer plant resources for human populations. As a result, few sites dating from this Early and Middle Archaic period have been discovered in the region. Those few sites that have been found dating to this period are often found near water sources and suggest that people lived in small mobile bands, subsisting on gathered and hunted wild resources. One of these sites, the Stewart-Fuller Site, is located further upstream near the community of Earlville and was investigated by members of the Chenango chapter of the New York State Archaeological Association. This site produced a number of bifurcated points thought to date to the Early Archaic, as well as a number of charcoal features which may also date to the same period (Whitney 1972).

Beginning around 6500 B.C., the climate became increasingly wetter, resulting in an environment similar to ours today. Information obtained from Lake Misery indicated that mixed hardwoods, specifically hemlock with smaller amounts of beech were the dominant tree species in the valley (Lewis and Funk 1993:124). The large number of sites from this period suggests that Late Archaic populations increased significantly at this time. While people continued to live in small, mobile bands, there was an increasing trend toward sedentism. Subsistence practices were highly diverse and included a wide variety of aquatic and terrestrial resources. Late Archaic sites range from small upland camps to large villages near the confluences of major streams.

Late Archaic point types are among the most common forms found in the Chenango Drainage. Files at Colgate University indicate that a number of Archaic sites have been investigated in the vicinity of Sherburne, including NYSM 2618, which yielded Brewerton and Lamoka projectile points dating to the Middle and Late Archaic. The widespread occurrence and frequency of these point styles suggests that population size was relatively high in the Upper Susquehanna Drainage during the Late Archaic period.

The Transitional Period (ca. 1300-1000 B.C.) is characterized by the use of steatite vessels and smoking pipes, which gradually give way to large, thick pottery vessels. This period is very much a continuation of Late Archaic life ways, with increasing sedentism and reliance on plant resources. A small Vestal Notched point associated with Transitional period occupations was also noted in the Sherburne area by members of the Chenango Chapter (NYSM 6781). A radiocarbon date recovered from Lake Misery of 2800+/-100) was obtained from a pollen sample, which indicated that Beech was slowly becoming the dominant tree species in the area (Lewis and Funk 1993:121). The Woodland Period begins about 1000 B.C. and is marked by the introduction of pottery and the development of an elaborate trade and ceremonial complex. It is during this time that people gradually began to cultivate plants.

The Late Woodland Period began around A.D. 1000 and is differentiated from its predecessor primarily on the basis of projectile point types, pottery styles and diet (Funk 1976). Hoe cultivation also appears during Late Woodland times. Diet was largely made up of cultigens (corn, beans and squash) and game supplemented by fishing and the gathering of aquatic and terrestrial resources. Large, permanent village sites occur along major rivers as well as defensive locations (Ritchie 1994). Small, ephemeral sites also occur, probably used as camps for resource extraction. These smaller sites are located in a wide variety of geographic contexts, ranging from wetlands and backwater drainages to forested uplands. After about A.D. 1400, the Iroquois culture was fully developed, with intensive horticulture and large, palisaded villages (Ritchie and Funk 1973).

A radiocarbon date obtained from Vly Bog near Oneonta yielded a date of 1290± 90, which is only slightly older than the radiocarbon sample obtained as part of the geoarchaeological investigations conducted as part of this project, which yielded a date of 1,145 ± 20 BP (ISGS-A0666). Therefore, results of the Vly Pond data may be similar to what might have been encountered in our sample. Their results indicated that oak was now the dominant species at this time, although smaller trees and shrubs, most notably hornbeam and hazel, were increasing in number across the landscape (Lewis and Funk 1993:121). Chestnut, one of the dominant tree species at the time of Euroamerican colonization, also begins to make a small but notably presence within the pollen record from this period.

Late Woodland point styles also occur in some frequency in the Chenango drainage. The vast majority of points from the period found in the area tend to be earlier Levanna varieties associated with Proto-Iroquoian Owasco people rather than later Madison points. A prehistoric village dating to the Late Woodland period has long been known in the northern part of the village of Sherburne. This site was noted by Parker (1922:541) in Part 2 of his *Archaeological History of New York State*. Beauchamp (1907:44) gives the name of *Ga-na'-so-wa-di* for the prehistoric village where Sherburne now stands, which he roughly translates as "steep hill" in the Onondaga language. The name of the Chenango River comes from the Oneida and Onondaga word, *O-che-nang*, meaning "bull thistles." From the period of initial contact until the late 18th century the Oneida Nation occupied much of the region including present day Oneida, Madison and Chenango counties (Smith 1880:62). Later, the Oneida ceded some land in Chenango and Madison Counties to the Tuscarora in 1715 when they were adopted into the Iroquois Confederacy as the "Sixth Nation."

Research Questions

A theoretical framework is necessary to help guide the research processes and orient the recovery of data. In discussions with NYSOPRHP, a rough theoretical perspective was developed prior to the initiation of the Phase III excavations. A series of research questions were developed in conjunction with OPRHP and the New York State Museum as part of the Data Recovery Plan. Research questions posed for the data recovery are as follows:

> *Is lithic debitage randomly distributed throughout the site area? How is this distribution reflected with regard to lithic reduction sequences?*
>
> *Are formal and expedient tools randomly distributed throughout the site, and what is their spatial relationship to one another and/or cultural features?*
>
> *Can specific activity areas be identified within the area tested?*
>
> *What does the information infer about seasonality at the site?*
>
> *Does the site represent a single or multiple occupations?*
>
> *What are some of the natural and cultural processes ongoing at the site? How do they relate to past processes?*
>
> *What prehistoric cultural groups are represented at the site?*

This research methodology was used to help focus the data collection effort during the Phase II investigations. After providing the results of the field investigation and a discussion of the artifacts and features encountered, each of these research questions will be addressed individually in further detail.

Field Methodology

The first step in the data recovery was to revisit the site in order to examine any changes that might have taken place following the previous investigations. The site datum is a three foot section of rebar located in a patch of tall weeds near the southwest corner of the site boundary. After the datum was relocated in the grass, the original STP grid was reestablished in order to tie in the excavation units to a central, fixed point that will not be impacted by the proposed construction. The datum was then recorded using a Garmin GPS unit. Once the grid was established, a number of field excavation techniques were employed. Methods involved with each of these techniques are discussed below.

Unit Excavations

One meter square (1 x 1 m) excavation units were placed in areas of high artifact concentrations as well as areas of the site that were poorly understood. In some areas, these units were excavated beside one another, although each was still excavated and screened separately allowing for tighter data control. Units were excavated by hand using trowels and shovels as appropriate. A line level was used to measure elevational depths within the units. Units were excavated in 10 cm levels within natural soil layers to allow for tight vertical control in stratigraphic contexts. All soil was screened through ¼ inch hardware cloth to look for artifacts. All artifacts collected from the screens were bagged according to provenience and sent to our laboratory for further study. Upon completion of a unit, a wall profile was drawn showing soil stratigraphy and cultural features. Walls were chosen by the excavators on the basis of clarity and ability to show complexities within the soil profile. Unit wall profiles were also cleaned and photographed prior to backfilling. Plan views of the unit floors were undertaken whenever a point of interest was noted. Summaries of the unit excavations are provided in Appendix D, and artifacts recovered from the units are included in the Artifact Catalog (Appendix E).

Mechanized Stripping

The second phase of the proposed data recovery will involve the mechanized stripping of the proposed paved access road and water main corridor through the known site boundary as shown in Figure 2 and Appendix G. Mechanized stripping will consist of monitoring a backhoe with a flat blade, which will slowly scrape the proposed roadway at 2 inch (5 cm) increments. After each pass with the backhoe, archaeologists will scrape the surface with flat shovels to look for artifacts and cultural features. Any artifacts identified were mapped individually. Any cultural features identified during the scraping were mapped, photographed and treated as discussed in the *Excavation Units* section of this report. In addition, systematic sampling of the soils will be taken in 2 m intervals along the proposed access road. Only after artifacts and features were fully documented was the backhoe be allowed to continue.

Together, these field methods should be able to provide valuable information about past activities and lifeways. When used in conjunction with the research methodology, the findings should provide a more comprehensive picture of past activities at the Rogers Prehistoric Site.

Results

<u>Excavation Units</u>- A total of 15 1 x 1 m square excavation units were placed in areas of high artifact concentrations or in areas where charcoal was identified during the shovel testing (Figure 2; Appendix G). A total of seven cultural features were identified from the excavations at the Rogers Prehistoric Site: four from the excavation units and three from the mechanized trenching conducted prior to the installation of the water pipe. More information about of each of the unit blocks and their findings is discussed in the following sections below.

Units 1-6

Units 1 through 6 were located near the center of the proposed well house just east of the existing well field (Figure 2). This area was chosen for excavation because it will be completely destroyed by the construction of the well house and because of the relatively high artifact density from this part of the site. Artifacts were most common in the upper 30 cm of soil, with density dropping off sharply after depths of 50 cm. This uppermost topsoil consisted of 10YR 3/2 very dark grayish brown sandy silt with gravel and was relatively uneven, extending to a depth of 25-41 cm in Units 1, 3, 4 and 6, and continuing to a depth of 76 cm in Unit 4. Next, a series of weakly developed B horizons consisting of either 7.5YR 4/6 strong brown sandy silt with gravel was encountered below the topsoil, which extended to a depths as deep as 85 cm in Unit 5. Soils were consistent with that encountered during previous investigations at the site, with a Cg horizon consisting of loose 10YR 3/3 dark brown sand and unconsolidated gravel occurring at an average of 40-87 cm below the ground surface (Figure 8; Photos 12 and 13). Three distinct soil anomalies were noted in this block of units, each of which were designated as features and documented and sampled as described in the data recovery plan. One of these anomalies appeared to represent root disturbances from a toppled tree, causing a partial inversion of the soil (Feature 3). As a result, the B horizon was pushed further down below the ground surface, most notably in Units 2 and 5, where excavation extended to a depth of 115 cm below the ground surface to extend 20 cm into the gravelly till. A small deposit of charcoal and FCR was noted in the bottom of the inversion, which was sampled and documented as described above (Feature 3). More detailed information about cultural and natural features is provided in a later section of this report. In order to show the steep inversions caused by the tree throws, the west wall of units 1-3 and the east wall of Units 4-6 were photographed and drawn after the excavation of this block of Units had been completed.

Units 7-10

Units 7 through 10 were located near the northeast corner of the proposed impact area, where STPs excavated as part of previous studies identified small concentrations of charcoal (Photo 2). Soils in this block of units were similar to the previous units, although the soils appeared less disturbed by root activity. The boundary separating the B and C horizons was wavy but distinct and occurred at a depth ranging from 55–73 cm below the ground surface (Figure 9; Photos 14 and 15). Artifact density was much higher than in Units 1-6, with approximately 800 fragments of debitage and four biface fragments recovered from the four units. No cultural features were noted, although root staining was common throughout much of the B horizon. Two soil anomalies were noted during the excavation of this block of units. Feature 4 was encountered in Unit 9 at a depth of 34 cm below the ground surface, and Feature 5 was encountered in Level 4 of Unit 7 at a depth of 41 cm. More information about these cultural features is provided in the following section of the report. Excavation of Units 7–10 was conducted to a depth of 90 cm below the ground surface. After these units were excavated, the west walls of Units 7 and 8 and the east walls of Units 9 and 10 were photographed and drawn in profile prior to backfilling.

Units 11-14

Units 11 through 14 were located in the western part of the proposed construction area, where previous studies had determined a high density of lithic debitage and formal tools (Photo 3). Artifact density was consistent with that found in Units 1-6, with a total of 18 biface fragments, 11 fragments of FCR, and 301 fragments of chert debitage, including a core fragment. Soils were also similar to those previously found, although the soil profiles suggested a high amount of root disturbance and tree falls (Figure 10; Photos 16 and 17). Two soil anomalies were noted in this block of units, both of which appeared to relate to tree activities. Because these root disturbances appeared natural, they were not designated cultural features. The upper soil consisted of the same 3/2 very dark grayish brown sandy silt with gravel found in previous units, which extended to a depth of 32-34 cm. Subsoil (Bw horizon) consisted of 7.5YR 4/3 brown sandy silt with gravel. The interface between the B and C horizons occurred at depths of 65–74 cm below ground surface with excavation of Units 11 –14 extending to a depth of 85 cm below the ground surface. In is interesting to note that the soil inversion caused by the tree tips indicated had pushed the Cg horizon to very near the ground surface, as shown in Figure 10. In order to better show these inversions, the south wall of Units 11 and 13 and the north wall of Units 12 and 14 were photographed and drawn in profile after the excavation in this block of units was complete.

Unit 15

Unit 15 was placed in the eastern end of the proposed impact area in order to examine deposits closer to the edge of the Pleistocene terrace (Photo 18). Artifact density was higher than expected, with approximately 265 pieces of lithic debitage and a side notched projectile point fragment recovered from the unit. As in the previous units, the upper soil consisted of 10YR 3/2 very dark grayish brown sandy silt with gravel, which extended to a depth of 30 cm below the ground surface. The stratigraphy appeared to slope downward to the east, as did the B horizon soil, which extended to a depth of 57 cm (Figure 11; Photo 19). The loose and rocky Cg horizon was noted at a depth of 57 cm and continued until the excavation was halted. No cultural features or soil anomalies were noted, and no fire cracked rock (FCR) was recovered from the vicinity. Excavation of Unit 15 was halted at a depth of 87 cm below the ground surface. After we finished excavating Unit 15, the north wall was photographed and drawn in profile prior to being backfilled.

Mechanized stripping- After the excavation of the units and prior to the completion of the data recovery, mechanized stripping was conducted along the proposed paved access road and water main corridor through the known site boundary (Figure 2; Appendix G). This portion of the data recovery involved monitoring a backhoe with a flat blade, which slowly scraped the proposed roadway in 2 inch (5 cm) increments. After each pass with the backhoe, archaeologists scraped the surface with flat shovels to look for artifacts and cultural features.

A total of three cultural features were identified as part of the mechanized stripping. Each of these three features were drawn and photographed in profile and plan view, with samples submitted for macrofloral and radiocarbon analysis and following procedures as discussed in the *Field Methods* section. More information about each of these features is provided in the following section.

In addition to the cultural features, a total of 86 artifacts were identified and mapped *in situ* during the mechanized stripping, including large amounts of chert debitage, a biface fragment, and a fragment of fire cracked rock (FCR). These artifacts were designated PT numbers in the artifact catalog (Appendix D), with their locations plotted on the project map (Appendix G). A cluster of prehistoric artifacts, including a fragment of FCR, was encountered between 44 and 58 m along the baseline at a depth of approximately 25-30 cm below the ground surface (Figure 20).

A systematic sampling strategy was also implemented as part of the mechanized stripping. A baseline was established along both sides of the mechanized stripping area in 2 m intervals, with labeled pin flags used to note the specific intervals. During the scraping, the soil excavated by the backhoe was placed directly adjacent to the trench within the two meter zone from which it was excavated. This allowed us to sample directly from the scrapings at two meter intervals. Samples were taken volumetrically, with two leveled 5 gallon buckets taken and screened through hardware cloth from every two meter pile. This methodology proved much more time consuming than was planned, although the results provided systematic information about artifact density and recovered a large number of artifacts (n=1,005), including 5 bifaces, a chert core, and 15 fragments of FCR.

Table 4 Summary of Features from the Rogers Prehistoric Site			
	Provenience	**Radiocarbon Date**	**Active Interpretation**
Feature 1	Unit 3 Level 3 50-66 cmbd	Insufficient charcoal/ND	Possible truncated storage or fire pit
Feature 2	Units 2 and 5 111 cmbgs	Beta-221610 1950+/-40BP Cal 1990-1820 BP	Hearth/Fire Pit
Feature 3	Determined Non-Cultural		Pit caused by fallen tree roots
Feature 4	Unit 9 Level 4 34-46 cmbd	Beta-221612 2380+/-50BP Cal 2500-2330 BP	Small truncated fire pit
Feature 5	Unit 7 Level 4 41-48 cm	Beta-221613 2470+/-40BP Cal 2730-2360 BP	Storage/Fire Pit?
Feature 6	Test Trench N4.75/E1.85 37 cmbgs	Beta-221614 850+/-40 BP Cal 900-810 BP	Storage/Fire Pit?
Feature 7	Test Trench N12.20/E0.90 43 cmbgs	Beta-221615 760+/40 BP Cal 740-660 BP	Deflated hearth or fire feature
Feature 8	Test Trench N69.0/E0.90 41 cmbgs	Beta-221616 350+/-60 BP Cal 520-290 BP	Possible fire pit/ Non-cultural tree burn?

Features

A total of eight soil anomalies were designated cultural features as part of the data recovery. One of these features, Feature 3, was ultimately determined to be a non-cultural rodent disturbance, bringing the total number of cultural features encountered to seven.

Before continuing into the discussion of the features, it is important to recall from the Environmental Context that turbation caused by tree falls has likely affected the landscape, and may have truncated or altered the shape of some of these deposits. For these reasons, identifying the function of each of the features was determined primarily by examining the content of the features rather than classifying features based upon their shape. A summary of the features encountered and their interpretation is provided in Table 4.

Feature 1

Feature 1 was located at the base of Level 3 in Unit 3 at a depth of 50 cm below the ground surface. A dark stain consisting of 10YR 3/3 silty loam was encountered in the southwest corner. This feature was bisected and profiled as shown in Figure 13 (Photo 25), with the eastern half being saved for radiocarbon and macrofloral analysis. Unfortunately, the soil sample submitted for radiocarbon analysis contained insufficient carbon for analysis. Macrofloral analysis indicated that Feature 1 contained several charred *Rubus* seeds and seed fragments, suggesting that raspberries/blackberries were utilized. Maple, sycamore, elm, and an unidentified hardwood appear to have been burned as fuel. In addition, five chert flakes were recovered, suggesting tool manufacturing and maintenance activities. Because Feature 1 was identified directly below the upper disturbed layer adjacent to the well field, this feature is interpreted as a storage pit that has been truncated by the disturbance above.

Feature 2

Feature 2 is a hearth/fire pit located in the northern half of Units 2 and 5 at a depth of 111 cm below the ground surface. In accordance with procedures outlined in the data recovery plan and Sec. 233 permit, all cultural features were bisected and drawn and photographed in plan view and profile (Figure 14; Photo 26). Bisection of Feature 2 revealed that the feature was approximately 19 cm in thickness and had a relatively flat bottom, which was reassuring given the ungulating topography suggested by the soil profiles. Feature 2 yielded a conventional radiocarbon date of 1950 ± 40 BP, with a calibrated age range of 990-1820 BP (Beta-221610). A paleobotanical sample was taken from the fill in the southeast portion of the feature in Unit 5. The results suggest that Early Woodland people were enjoying a diverse diet, including hickory nuts, elderberries, and small seeds, in this case, maygrass (*Phalaris*). The charcoal record consisted mainly of unidentifiable charcoal fragments, although a few small fragments of *Quercus* and *Ulmus* charcoal suggest that oak and elm were being used as fuel.

Feature 3

This feature was initially thought to a deep pit located near the center of Units 1-6 (Photo 27). This feature consisted of darker soil extending deep below the surrounding BC horizon (Photo 28). Upon consultation with Juliann Van Nest and a comparison of this pit with others encountered during the excavations, it was ultimately determined that this sharply incised pit was actually a natural tree tip and not a cultural feature.

Feature 4
Feature 4 was identified in Unit 4 at a depth of 34 cm below the ground surface. In plan view the circular dark stain appeared to be a small pit or possibly a large post mold, although when bisected, the feature appeared to taper sharply, with a large fragment of fire cracked rock occurring directly adjacent (Figure 15; Photo 29). The small size of the feature as well as the tapered shape and shallow depth all initially suggested to us that the feature was likely a burned tap root, although the presence of fire cracked rock in close proximity suggested that it might be the truncated remains of a fire-related cultural feature. To be certain, we treated the find as a cultural feature and collected samples for radiocarbon and macrofloral analysis. We were both pleased and surprised when a conventional radiocarbon date of 2380 ± 50 BP and a calibrated age range of 2500-2330 BP (Beta-221612) were obtained from Feature 4, suggesting that it also dated to Early Woodland times. Macrofloral remains indicated that elm was the dominant charcoal present, with lesser amounts of sycamore, maple, as well as a fourth unidentified charcoal type. This diversity of charcoal species likely reflects a highly diverse, forested environment some two thousand years ago. While no seed remains were present in the macrofloral record, a hickory nutshell fragment was recovered, and 5 chert microflakes less than 2 mm in diameter were also included in the fill remains. When examined together, the above information suggests that Feature 4 represents a prehistoric cultural feature and not a burned taproot as was initially suspected.

Feature 5
A little over a meter to the southwest from Feature 4, we encountered another small stain leading into the south wall of Unit 7 at a depth of 40 cm below the ground surface (Figure 16; Photo 30). Soil from eastern half of this feature yielded a conventional radiocarbon date of 2470 ± 40 BP, with a calibrated age range of 2730-2360 BP (Beta-221613). This is the oldest radiocarbon date obtained from our investigations at the Rogers Prehistoric Site. Unfortunately, the paleobotanical remains from the feature were less interesting, with walnut or hickory nut fragments likely representing processing or storage activities. That Feature 5 represents a storage pit remains somewhat speculative, especially since charcoal of white oak was also present in the sample. It would seem equally plausible that this feature might represent a fire pit or hearth rather than a storage pit, since nutshells were often disposed of in fires to prevent injuries while barefoot. Also, because of their density, nut shells make an excellent fuel source in their own right.

Feature 6
Feature 6 was identified in the southern end of the mechanized trenching area at N4.75/E1.85 at a depth of 37 cm below the ground surface. The feature was very small, measuring only 9 cm in diameter, and was bisected by the flat bladed backhoe while scraping at 2 cm intervals. The feature was drawn in plan view and profile and photographed (Figure 17; Photo 31). Because of the small size of the feature, the entire feature matrix was collected for radiometric and macrofloral remains. A conventional radiocarbon date of 850 ± 40 BP and a calibrated age range of 900-810 BP (Beta-221614) indicate use during the Late Woodland period. Sycamore (*Platanus*) charcoal recovered from the feature indicates that sycamore wood was burned as fuel, while a single chert flake recovered from the feature matrix suggests tool use or maintenance in

the vicinity. In additional to the carbonized macrofloral remains, several types of uncharred seeds and insect remains suggest minor subsurface disturbance from insect activity in this area. Feature 6 is determined to be a small fire pit or hearth that has been modified by turbation and truncated by the backhoe.

Feature 7

Feature 7 is interpreted as the remains of a deflated hearth or fire feature that was identified to the north of Feature 6 at N12.20/E0.90. The feature consists of an angular stain of 10YR 3/2 very dark grayish brown sandy loam encountered during the mechanized stripping at a depth of 43 cm below the ground surface (Figure 18; Photo 32). The southern half of this feature was bisected and submitted for radiocarbon analysis. A conventional radiocarbon date of 760 ± 40 BP and a calibrated age range of 740-660 BP (Beta-221615) was obtained from the sample, also suggesting a Late Woodland occupation occurring slightly later than Feature 6.The northern part of the feature was screened and excavated separately, and contained a fragment of fire cracked rock (FCR). Macrofloral remains recovered from the southern half of Feature 7 include maple and sycamore charcoal, suggesting their use as a fuel source. In addition, a *Rubus* seed and a seed fragment were also found, suggesting that blackberries or raspberries were being consumed at the site. There were also two charred seeds that were unidentifiable, although the macrofloral report suggests that they may be members of the nightshade (Solanaceae) family (Appendix E). In addition to the FCR, three chert flakes were also recovered from the southern half of Feature 7.

Feature 8

Feature 8 was the northernmost feature encountered during the excavations, occurring along the mechanized trench area at N69.0 E0.90 approximately 42 cm below the ground surface. The feature consisted of an amorphous form of 10YR 3/2 very dark grayish brown sandy loam with abundant charcoal, and was initially thought to represent a recent tree burn. It was designated a feature and drawn and photographed (Figure 19; Photo 33). The southern half of the feature was submitted for analysis while the northern half was screened and excavated separately, and recovered three chert flakes. A radiocarbon sample recovered from the southern half of the feature produced a date of 350 ± 60 BP and a calibrated age range of 520-290 BP (Beta-221616), the latest date recovered from the site, which suggests a Late Woodland or Contact period date. Macrofloral remains from the southern half include a large amount of pine charcoal, including charcoal that was vitrified and only partially charred. This suggests that this was a relatively recent tree burn. However, the presence of other types of charcoal popular during earlier periods (sycamore and elm) were also found, which along with charred elderberry and raspberry/blackberry seeds and a small lithic flake all suggest that prehistoric cultural activities were also taking place in the vicinity.

Artifacts

A total of 3,450 prehistoric artifacts were recovered as part of the data recovery at the Rogers Prehistoric Site. Artifacts were classified on the basis of their manufacturing technique or interpreted function. Chipped stone debitage made up 96.0 percent (n=3,312) of the artifacts recovered, followed by fire cracked rock (n=93; 2.69%), bifaces (n=43; 1.24%), and pebble/cobble tools (n=2; <0.01%). More information about each of these artifact types is provided in further detail below.

Chipped Stone Debitage

A total of 3,312 fragments of chipped stone debitage were recovered as part of the data recovery. Artifacts included in this category are all thought be the result of lithic reduction techniques that were created as a byproduct of tool manufacturing and maintenance activities, although these fragments themselves may also be used as expedient tools and show evidence of utilization. Debitage recovered from the site consists of 265 whole flakes, 2,416 flake fragments, 623 fragments of angular chert shatter, and 8 cores and core fragments. Definitions of each of these categories are based upon Andrefsky (1998) and are provided below.

> *Complete flakes*-For the purposes of this study, flakes are defined as a fragment of lithic debitage removed from a larger chert object. Flakes have standard characteristics, including a bulb, platform, and often ripple marks from the concoidial fracture. This category is reserved for intact flakes, of for those flakes where the maximum original dimensions are known.
>
> *Flake fragments*-These are fragments of debitage that are broken flakes like that above that share one or more of the diagnostic attributes (bulb, platform, etc.) but from which the full dimensions of the original flake are unknown.
>
> *Shatter*-This category includes fragments of chert debitage which were likely produced as part of lithic reduction, but are lacking any diagnostic flake attributes. Shatter is part of a natural process in lithic reduction, since not all debitage demonstrate the same clear evidence of cultural manufacture. Additionally, cultural and natural site formation processes also break intact chert flakes and create non-diagnostic shatter.
>
> *Cores*-Cores are defined as a mass of chert that show evidence of flakes detached from their surface. Cores may be uni or multi-directional and can themselves be the detached fragments of larger objects.

As shown in Table 5, flake fragments make up almost three quarters (72.9%; n=2,416) of all chipped stone debitage by frequency, but only 36.2% by mass, which reflects the small size of the fragments recovered. A total of 265 complete flakes were encountered as part of the investigations, suggesting that only 10.9 percent of the artifacts identified as being from flakes were complete, with the remaining 89.1 percent being fragmentary.

Table 5.

Chipped stone debitage from the Rogers Prehistoric Site

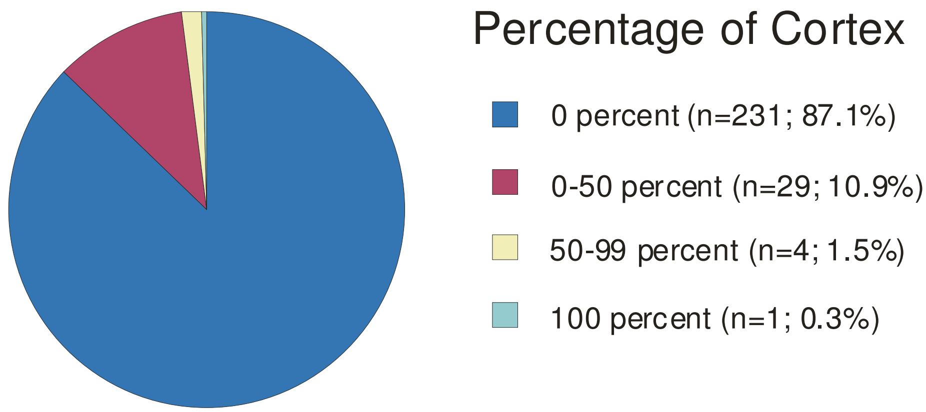
Type	Frequency/ percentage	Mass (g)/ percentage
Whole Flakes	265 (8.0%)	257.47 (11.7%)
Flake Fragments	2416 (72.9%)	795.99 (36.2%)
Shatter	623 (18.8%)	860.4 (39.2%)
Cores and Core Fragments	8 (0.3%)	285.4 (12.9
Total Debitage	**3312 (100.0%)**	**2199.25 (100.0%)**

While Sullivan and Rosen (1985) have suggested that complete flakes and shatter indicate core reduction while broken flakes reflect biface reduction, this hypothesis has been heavily criticized due to its relatively simplicity and lack of consideration of other external factors (Prentiss and Romanski 1989). As a result, while debitage from the Rogers Phase III assemblage would support the idea that biface manufacturing was the primary lithic industry, other, more complex factors may also be in play. It is interesting to note that while the number of flake fragments is almost four times greater than the number of fragments of chert shatter that the total mass of the shatter recovered was notably larger. This reflects the large size of the non-diagnostic fragments of debitage, reflecting a mean mass of 1.38 g per fragment of shatter as opposed to a mean of 0.32g for the flake fragments.

With regard to raw materials, eastern Onondaga chert appears to be most heavily represented, accounting for 95.8 percent of all debitage recovered. A total of 131 fragments of chipped stone debitage (3.9 percent) were made from a brownish green colored argillitic material, while six (0.3 percent) were made from quartz or quartzite. All of these materials were likely available nearby, although no quality lithic sources are known in the immediate vicinity. With regard to heat treatment, one flake and one flake fragment showed clear evidence of thermal alteration. Two chert fragments of fire cracked rock may also represent intentional heat treatment to improve workability, although there was no evidence of recent flake scars on either of the examples.

A total of 8 expended cores and core fragments were recovered during the Phase III study (Photo 34). These core fragments were relatively small, ranging in mass between 6.8 and 72.3 g and averaging 35.675 g. This average size is biased due to an unusually large nodule recovered from Level 4 of Unit 13, which measured approximately 55.0 x 29.8 x 26.7 mm in size. Cores appeared to be in varying stages of use. Only three of the eight cores had not cortex anywhere on their surfaces, while four had cortex covering between 0-50% of the total surface. Only one core had greater than 50% cortex on its surfaces.

Table 6.
Chart showing the frequency and percentage of cortex on the dorsal surfaces of complete flakes from the Rogers Prehistoric Site

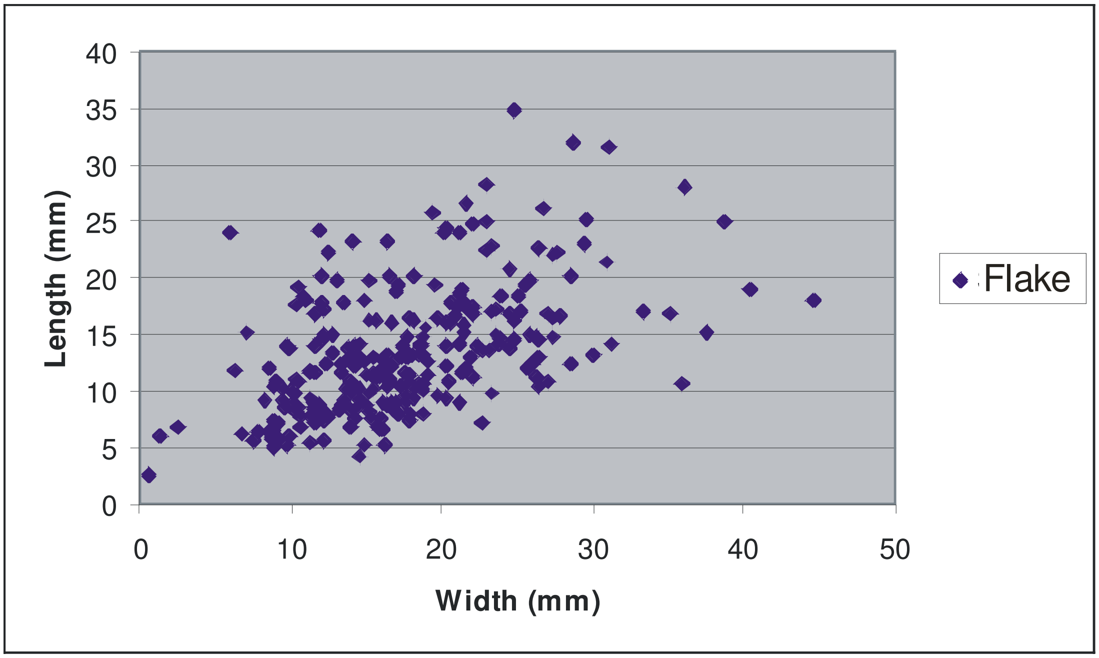


This core also showed evidence of utilization, which implied transverse motions consistent with scraping. Another core encountered in Unit 6 showed a similar wear pattern. This latter core also showed evidence of retouching directly on the wear surface, suggesting that these smaller, expended cores were being reincorporated into the toolkit for other functions. Overall, the cores and core fragments recovered from the Rogers site suggest expedient tool manufacturing rather than the manufacture of cache blades or bifaces, since the small core fragments appeared largely blockish and no thinner cores resembling performs were encountered.

Dorsal Cortex
The measurement of the amount of dorsal cortex has long been used by archaeologists as an indicator of the reduction stage for tools, with the idea that flakes with cortex were removed earlier in the reduction process than those lacking or with only partial cortex remaining (Andrefsky 1998; Bradbury and Carr 1995:108). While this technique is commonly used, Sullivan and Rosen (1985:757) point out several flaws in this regard, most notably that the amount of cortex present is likely more closely tied to the size of the overall nodule from which the flake is derived. (See also Odell 1981). In order to replicate these other studies, which Andrefsky (1998:115) dubs the “triple cortex typology,” four categories were developed based on the amount of cortex present on the dorsal surface: 0% cortex, 1-50% cortex; 50-99% and 100%. While this method makes it difficult to examine flakes with approximately half of the dorsal surfaces covered, it does allow for better comparison with other studies following the same typological system. Because flake fragments would further bias this study, only complete flakes were used in this analysis.

As shown in Table 6, over 87 percent (n=231) of all of the complete flakes had no cortex on their dorsal surfaces, suggesting latter stage reduction and tool maintenance were the primary lithic activities occurring at the site. This is very much in keeping with the

Table 7.
Scatter plot showing the length and width of complete flakes recovered from the Rogers Prehistoric Site



relatively small mean flake size, which also suggests that little tool manufacturing is taking place. Only one complete flake exhibited 100% of cortex covering the entire dorsal surface. This flake was relatively small, measuring only 9.1 x 10.8 mm in size. The general lack of dorsal cortex provides further evidence that little early stage lithic reduction was taking place at the Rogers Site.

In addition to the percentage of cortex, the size of the individual flakes have also been used to infer specific lithic reduction sequences, with larger flakes being assigned to the earlier stages of reduction. One such technique that relies primarily on flake size is mass analysis, which has become an increasingly popular means of examining large lithic assemblages Ahler (1989). As part of mass analysis, flakes are passed through a series mesh screens in graduated sizes, with different size groups corresponding to either reduction stage (primary, secondary or tertiary) or manufacturing technique (hard hammer and soft hammer percussion, pressure flaking).

While this technique is popular, it too has its shortcomings. Many flintknappers and lithic analysts have noted that lithic reduction seldom follows set stages, and that pressure flaking is sometimes necessary in the preparation platforms for early stage flake removal. Conversely, it sometimes becomes necessary to use percussion techniques in the latest stages of biface manufacturing in order to remove inclusions or in the case of fluted point technology, to remove the flute from the otherwise finished point. Another serious problem is that some researchers have erroneously conducted mass analysis on both

Table 8.
Evidence of use wear on chipped stone debitage from the Rogers Prehistoric Site

Description of wear	Frequency/ Percentage	Comments
Feathered termination	15 (34.88%)	
Longitudinal motion/hinge fracture	1 (2.32%)	
Longitudinal motion/ feathered and hinged termination	1 (2.32%)	
Transverse motion/feathered termination	17 (39.53%)	1 retouched
Transverse motion/hinge termination	4 (9.30%)	
Transverse and longitudinal motion	2 (4.65%)	
Transverse motion	1 (2.32%)	
Transverse motion with scalloping	1 (2.32%)	
Edge damage (indeterminate)	1 (2.32%)	
Total	**43 (100.00%)**	

complete flakes and flake fragments, which makes it exceedingly difficult to compare assemblages from different sites.

Most significantly, the three stage approach (primary, secondary, and tertiary) often fails to recognize that lithic reduction technology likely represents more of a continuum than distinct stages. Therefore, rather than place the place the debitage into primary, secondary and tertiary stages on the basis of size or amount of cortex, length each of the complete flakes were measured by their maximum length, width, and then were plotted in a graph as shown in Table 6. This suggests that tool maintenance and expedient flake tool manufacturing activities were taking place rather than the earlier stage lithic reduction expected for the manufacture of preforms or formal tools. As shown on Table 7, most of the flakes are clustered between 5 and 15 mm in length and 10-20 mm in width. Mean flake size was relatively small, averaging approximately 1.7 x 1.3 cm.

Use Wear
All prehistoric artifacts were examined under light microscopic (x30) magnification to aid proper identification and look for evidence of use wear. A total of 43 fragments of chert debitage showed patterns and other evidence of wear consistent with specific forms of utilization. One of these flakes exhibited what was ultimately determined to be historically recent edge damage, and was excluded from the study. As shown in Table 8, Only four of the flakes showed evidence of longitudinal wear suggestive of cutting or sawing motions, while transverse wear indicative of scraping occurs in 25 (58.1%) of the examples. The experimental replication and use of stone tools indicate that activities such as butchering and hide scraping activities are often associated with transverse patterns of use wear, suggesting that these activities were taking place at the site. Five (11.6%) of the examples exhibited hinge fractures that often result from percussion or transverse pressure at a steep angle. These latter examples likely reflect chopping activities as well. Feathered terminations occur on 33 (76.7%) of the examples, suggesting that a soft material was being more actively worked, which is also suggestive of butchering activities.

Bifacial Tools
A total of 43 bifacially worked stone tools were recovered during the data recovery. These bifaces and biface fragments range from uncompleted forms to finished examples. The majority of the examples appear largely fragmentary, with the overall mass of the bifaces ranging between 1.1g and 15.2g and averaging 3.7g. Overall, the small size and heavy wear found on many of the examples suggest the active use of these tools at the site rather than being freshly manufactured for use at a latter date.

While several projectile point tips and medial sections were recovered, few temporarily diagnostic bases were recovered from the site (Photo 36). A small side notched point was recovered from Level 4 of Unit 15. This point appears to be a Brewerton Side Notched point, a style dating to the Middle Archaic period. The base of a small side notched Meadowood point and a complete contracting stem point that is likely a Snook Kill point were also recovered from the site. Snook Kill points are thought to date to the Late Archaic period, while Meadowood Points date to the Early Woodland. In addition to the projectile points, three fragments of what appear to be drills were recovered also from the Rogers Prehistoric Site, suggesting that wood or some other soft material was being worked (Photo 37).

Most of the bifaces recovered tended to exhibit signs of heavy wear and edge trauma, likely reflecting a combination of heavy use and post abandonment natural and cultural processes. As a result, it was sometimes difficult to identify specific forms of functionally diagnostic wear. Only 10 (23.25%) of the bifaces and biface fragments showed evidence of use wear that could conclusively be assigned to a motion of function. Six bifaces showed evidence of transverse wear consistent with scraping. Three showed evidence of feathering suggesting working on a soft material, while six had hinge fractures suggesting that a harder material was being worked. One biface showed evidence of both feathered and hinge terminations, suggesting that this tool was used on both hard and soft surfaces. This likely does not represent all of the wear as edge damage has made it difficult to specify the style of wear with regard to function. Conversely, it also does not imply that those bifaces which show no evidence of wear are unfinished, since some areas, such as along the base or hafting element, seldom show wear from utilization.

Pebble/Cobble Tools
This classification includes a number of artifact groups and functional categories, including artifacts commonly referred to as ground stone tools. This category includes all tools that were not intentionally chipped along their working edges. A total of three artifacts are included in this category, accounting for less that one tenth of one percent of the total assemblage.

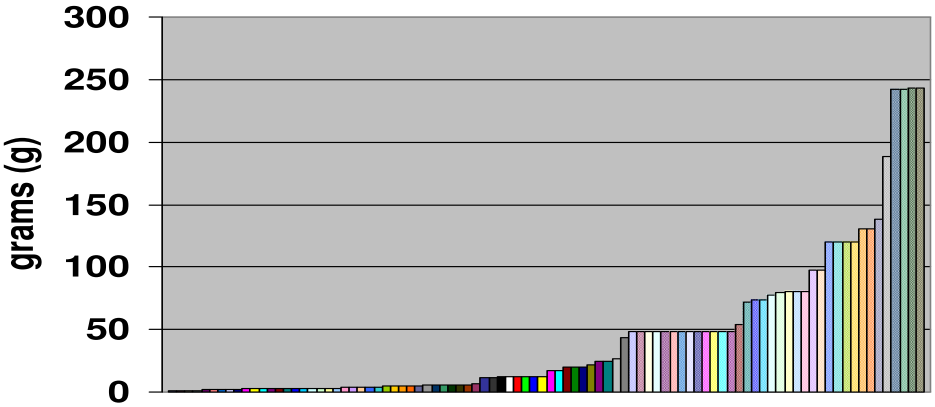
One of the greatest problems regarding the classification and description of ground stone tools is that these objects often show more than one form of wear, likely associated with multiple activities being conducted with that artifact. As a result, traditional classifications of pebble/cobble tools, such as “hammerstone,” or “abrader” are useful, but fail to convey the full spectrum of uses a specific artifact may have held. The following three kinds of wear were examined on the examples from the Rogers assemblage. Other forms of wear not present in the current study include polishing, drilling, and incising.

> *Pitting-* Pitting appears as small holes on the edge of an object when subject to bashing in a perpendicular angle on a hard surface. Pitting implies hammer like bashing, although the degree of pitting is often determined more by the kind of stone that the artifact is made from as well as the duration of use and hardness of the material being worked.
>
> *Grinding/Abrading*-Use of grinding tools is evidenced by linear striations on the surface of the area worked, and is considered evidence of direct contact between two hard surfaces. These linear striations can all face one direction, such as on a mano, or they can be multidirectional. Grinding and abrading are commonly associated with food preparation and are also common methods in the manufacture of other ground and chipped stone tools and objects.
>
> *Smoothing-*This form of wear is produced by rubbing an object in a circular fashion to smooth a softer material, such as leather hides or other soft material. Smoothing is sometimes associated with the development of polish or staining created by the material being processed. Macroscopically, smoothing is easiest to see in coarser grained materials, such as quartzite, which can sometimes bias the identification of smoothing. Water and other natural processes can also create differential weathering that can sometimes be confused with wear from smoothing.

Only three artifacts have been classified as belonging to this category. One of these artifacts, a net sinker, was recovered from Level 3 of Unit 4 (Photo 38). This find marks the only evidence of fishing recovered from the site, although fishing would have clearly played an important role in the prehistoric subsistence patterns. A hammerstone was recovered from Level 4 of Unit 10. This artifact showed evidence of pitting along several sides, suggesting it was used as a hammer. In addition, a series of two long grooves near the center of the object shows linear striations consistent with grinding/abrading, suggesting that it might have been used as a shaft polisher (Photo 39). The final ground stone artifact also shows evidence of pitting on the corners, suggesting its use as a hammer. In addition, one shows evidence of smoothing while a central pecked area suggests use as an anvil for processing nuts or other foods.

It is interesting to note that both of these ground stone tools show multiple patterns of wear on their surfaces, suggesting that they served multiple uses. Multi-function tools are common attributes of non-sedentary people, who often limited in the number of objects they can carry and thus prefer small tools suitable for multiple tasks. Neither of these hammerstones were relatively large, although the one also showing use as a shaft scraper was relatively heavy, weighing 386.2g. A shaft polisher would have likely been a more

Table 9.
Mass of fire cracked rock recovered from the Rogers Prehistoric Site



highly curated item, since the time associated with its manufacture would have likely been much greater.

Fire Cracked Rock

A total of 93 examples of fire-cracked rock (FCR) were recovered as part of the data recovery, weighting a total of 8,302.84 grams (18.3 lbs). For purposes of this study, fire cracked rock is defined as having one or more of the following three attributes: redness, spalling, and evidence of internal fracturing. Other rocks subjected to heating may not demonstrate any of the attributes described above, as many factors, including material composition, moisture, and proximity to the heat source also affect the ability to accurately recognize this artifact type (Bellomo 1993).

Of these 93 fragments of FCR, 72 (78.4%) were made of quartzite, while 20 (21.5%) were made of chert, and one from an argillaceous material (1.07%). It is interesting to note that the mean mass of quartzite fragments of FCR is 89.27g, while the mean mass of the chert FCR is only 4.03g. These chert fragments of FCR may represent attempts at thermal alteration, although they do not share the angular characteristics of angular shatter or mechanical lithic reduction. Each of the 93 individual fragments was plotted on a bar graph showing its individual mass (Table 9). By looking that the graph, it would appear that the individual mass of FCR fragments clusters into specific size groups on the basis of mass, most notably at 20, 50 and approximately 240g. While other natural and cultural factors are clearly also at work, the graph suggests that specific sizes of FCR may have been preferred for specific tasks, with smaller stones used for stone boiling and larger stones possibly used to hold or steady pots or other utensils.

Prehistoric Pottery

One small fragment of prehistoric pottery was recovered from the excavations at the Rogers Prehistoric Site: a grit tempered cord impressed sherd recovered from Level 5 of

Unit 5 at a depth of approximately 45 cm below the ground surface (Photo 41). This sherd was small, weighing only 3.4 g, and was moderately thick, measuring 0.91 mm (0.035 in.) in thickness. It is difficult to determine the part of the vessel represented due to the small size of the fragment, although possibly represents a smaller body sherd dating to the latter part of the Woodland period.

Discussion

As stated in the methods sections of the report, a series of research questions were developed in conjunction with NYSOPRHP and the New York State Museum as part of the Data Recovery Plan. These questions were used to help focus the data collection effort during the Phase III investigations. Each of these research questions is addressed individually in further detail below.

> *Is lithic debitage randomly distributed throughout the site area? How is this distribution reflected with regard to lithic reduction sequences?*

Archaeologists have long worked to develop methods to examine artifact patterning and identify activity areas within archaeological sites. Computers have greatly contributed to this line of research, with new techniques for spatial modeling such as interpolation, contour generation and distributional and cluster analysis. Before computational analysis could take place, several factors had to be considered. Because of the strong potential for tree throws to invert the stratigraphy and displace the artifacts vertically, mass from all levels within a particular unit were grouped and expressed as a measure of grams per square meter. The mass of debitage recovered from each of the 2 x 2 m areas that were sampled along the mechanized stripping area was also expressed in grams per square meter, to allow for the comparison of debitage over the entire known site. This measure of artifact density was then plotted along an X/Y axis with respect to the site datum using AGIS spatial mapping software package Version 1.73. This density was then resized and digitized as shown on a map of the site (Figure 21).

As shown in the figure, density of lithic debitage occurs near center of the proposed well house and parking area between Units 1-6 and Units 7-10. Because chipped stone debitage made up over 97 percent of the total assemblage by mass, it seems likely that this expression would also show the distribution of all artifacts recovered by mass.

Two factors are clearly at work regarding the shape of the contours generated to express the density of the debitage. One is the lack of debitage to the south in Units 11-14 and to the north in Unit 15, which accounts for the lack of density in those directions. The second factor is the relatively low density of chert debitage along the mechanized stripping area. While this is likely due to the lack of volumetric comparison, since this stripped area was not excavated far below the subsoil, the relative drop off in artifact density as one moves to the north was initially noted during the Phase I shovel testing.

Results suggest that the concentration of lithic debitage between the clusters of units likely represents a specific activity area devoted to lithic reduction. The presence of large quantities of debitage in this area may represent a concentration produced by tree tipping, although the high density of lithics across several meters would suggest that a concentration exists in this area. While this concentration is likely related to tool production, this area might rather represent a storage or disposal area, since lithic reduction produces sharp flakes that would have required their disposal lest people be injured while walking barefoot.

Are formal and expedient tools randomly distributed throughout the site, and what is their spatial relationship to one another and/or cultural features?

The distribution of both formal and expedient tools does not appear to be random with regard to their location, although the pattern present seems to differ with that of the overall debitage. This is most notably true with respect to the expedient flake tools, which were increasingly common in the western part of the site in Units 11-14 (See Figure 22). It would seem that while this area on the western part of the site had less debitage per square meter it has a greater density of utilized flakes. This strongly suggests that the western part of the known site is likely an activity area.

A total of 10 utilized flakes were recovered from this block of units in the western part of the site. One of these flake tools showed evidence of utilization, although it was impossible to determine the form. For this reason it is excluded from this discussion. Of the 9 flake tools that were encountered in this block of units, all nine showed evidence of feathered flake terminations suggesting use on a soft material, such as hide, fur, cordage or a soft wood. While the motion associated with this wear is unclear for most of the examples, one of the flakes recovered from Level 2 of Unit 13 showed wear associated with a transverse motion such as scraping. While not conclusive, this unusually high concentration of expedient flake tools all showing similar wear patterns all suggests that this area was used for processing hides or some other soft material.

Formal tools also showed a different pattern. Of the 43 bifaces recovered as part of the data recovery, many were either of an early stage or else so fragmentary that it was difficult to identify the type of wear. Heavy battering and edge damage on some of the examples also hindered the identification of diagnostic wear. As a result, only 14 bifacially worked tools are included in this discussion. All of these tools appear to have been part of a completed form, or else showed signed of wear or utilization. Three of these bifaces are drill fragments recovered from Units 6, 8 and 14. These drill fragments do not appear clustered, suggesting that this activity was not confined to a specific area. As stated in the above discussion of the bifacial tools, wear patterns suggested transverse scraping, with softer materials being worked in greater frequency than harder surfaces.

As shown in Figure 23, it would appear that bifacial tools occur in a light density throughout the southern part of the site and do not appear to cluster in any particular area. The four biface fragments recovered from Unit 2 are all small, weighing only 5.8 g. Two of the fragments could be refitted, and it appears likely that these four fragments represent only one or possibly two individual bifaces. In addition to the bifacially worked tools found along the southern part of the site, a small cluster of three bifaces was identified along the mechanized stripping area between markers 42 and 48. This northern area might well represent an activity area involving work on a soft material, since all three of these bifaces showed feathered termination along their edges.

Can specific activity areas be identified within the area tested?

While biological and cultural activity has been modifying the site and displacing artifacts, several areas could still be associated with specific activities, suggesting that the results of tree throws may only displace artifacts a short distance horizontally. Further archaeological investigations of the effects of tree throws would be necessary to determine the nature of the artifact displacement.

One of the clearest areas which could be defined in terms of activities is thermal alteration, although it is difficult to determine if heat treatment took place on the site or if heat altered chert was brought from another location. Only four thermally altered fragments of debitage were encountered from the site, all of which were recovered from the cluster of center of the proposed well house area. An individual flake was recovered from both Units 1 and 5, and a flake and a fragment of heat altered shatter were recovered from Unit 3, all contiguous to one another. If the chert fragments of fire cracked rock are also included in this analysis, it would also encompass the remaining units within that contiguous cluster and also add additional numbers of heat altered chert from Units 1, 3 and 5. Only one fragment of chert FCR was recovered from outside of this block of units, a small fragment weighing only 24.0g recovered from stripping area 18-20 at a depth of 10-15 cm below the ground surface.

It would appear that if the intentional thermal alteration of chert for the purposes of improving chert workability was actually taking place at the Rogers Prehistoric Site, it was likely confined to a very small area of the site. Overall, it would appear that heat treatment was probably a relatively minor activity at the site, even if the chert FCR recovered is considered in this discussion.

Another artifact class that appears to cluster in a specific area is fire cracked rock (FCR), which may be suggestive of hearths and food preparation activities. While fire cracked rock was found throughout the site, very little was encountered from the mechanized stripping area in terms of mass (239.2g), making up only 2.8 percent of all of the FCR recovered. FCR was far more common from the excavation units in the proposed well house and parking area, as shown in Figure 24. Based upon the figure, it would appear that fire cracked rock is clustered near the center of the proposed well site, with little FCR occurring either to the east (Unit 15) or the west (Units 11-14).

It is interesting to note that while FCR is strongly clustered in the central part of the proposed well house area, that some of the units excavated had high concentrations while adjacent units had comparatively little or no fire cracked rock. For example, while the block of Units 1-6 had high concentrations of FCR, Units 3 and 4 had very low concentrations. I suspect that this pattern may be due to the effects of the tree throws, which may have taken an otherwise more uniform distribution of FCR and pushed these artifacts into smaller, more discrete clusters.

What does the information infer about seasonality at the site?

Macrofloral evidence suggests that the Rogers Prehistoric Site was probably just one of a number of seasonal base camps utilized during the spring and fall months to exploit adjacent wetland habitats on the sporadically inundated floodplain of the Chenango River. While we suspect that the site was also occupied in the spring and early summer, the results of the macrofloral analysis only suggest occupation in the late summer/fall months, when raspberries/blackberries, elderberries, many types of grass seeds, and hickory nuts and walnuts are available (Appendix E). This could be due to biases in preservation within the features. The results of lithic use wear analysis suggest that while butchering and hide processing were likely taking place at the site (both common activities in the late fall and winter), other tools show evidence of working on different surfaces, and artifacts such as the drill fragments, pebble/cobble tools, and the netsinker all suggest that other activities were also taking place. Additionally, while expended cores and debitage of all sizes were found at the site, none of the biface fragments recovered suggest that classic Early Woodland cache blades were being produced at the site, which, according the Granger (1978), was a classic late fall activity during Meadowood times, when people would make preparations for the upcoming hunting season.

If the Rogers Prehistoric Site was only occupied in the late fall, it suggests that Early and Middle Woodland people in the Chenango Valley were less sedentary, and that seasonal mobility was more complex, with people occupying areas for shorter periods, and with fewer seasonal reoccupations. Under traditional models of Woodland development, patches of small grass seeds were often visited and maintained in the spring to produce better harvests when they returned in the fall. The adoption of agriculture in the Eastern Woodlands has been postulated to derive from increased sedentism created by people tending these new semi-domesticates longer as it begins to play a more significant role in their diets. While it appears that Woodland people were likely procuring and processing wild grass seeds at the site, the amount of labor involved in the exercise and the significance of small grass seeds in their overall diets is not fully understood.

What are some of the natural and cultural processes ongoing at the site? How do they relate to past processes?

While some of the natural and cultural processes are ongoing, other processes are more relatively recent phenomenon. A radiocarbon date obtained from Test Trench 2 in the Holocene floodplain, suggests that these deposits are much younger 1,145 ± 20 BP than the elevated floodplain terrace upon which the site is positioned. This would not necessarily preclude the possibility that the floodplain was active during the Early Woodland occupation of the site, although it suggests that the leaves and organic matter obtained from the test trench were in place by the time of the Late Woodland occupation as suggested by the radiocarbon dates from Features 6-8.

The site was likely plowed throughout most of the 19th century, and has been used as part of the Rogers Game farm since 1909, when Harry and Gertrude Rogers establish New

York's first game farm in Sherburne. While the use of the property as a tree farm is clearly historically recent, the resulting natural and cultural processes have left an indelible mark on the archaeological record at the Rogers Prehistoric Site. Floralturbation in the form of tree throws as discussed in the *Soils* section and depicted in Figure 12 have made serious alterations to the landscape. While trees have fallen in the woods for thousands of years, it seems likely that the planted and uniform rows of white pines being periodically planted and harvested have contributed significantly to this process. It was noted earlier in the report that tree tipping is most common in tree species with shallow root systems, and since white pine trees have notably shallower roots than those tree species that likely grew in the vicinity in the prehistoric past (Maple, sycamore, elm, unidentified hardwood), it seems likely that these relatively recent activities are largely to blame. Trees present in the macrofloral record as charcoal were likely burned as fuel, and since firewood was likely not transported over great distances, it seems likely that these trees grew in the close vicinity.

Based upon the brief investigations made by Dr. Van Nest, much of the terrace upon which the site is located was tentatively defined as having a thick biomantle. A biomantle is defined as a texturally differentiated zone in the upper part of a soil produced largely by bioturbation processes (Balek 2002; Van Nest 2002). These biomantle horizons occur in upland areas where little or no erosional or depositional activity has taken place. Instead, artifacts are buried over time by insect, earthworm, and small root and rodent activity. Under this model, the location and position of the artifacts beneath the ground surface would be more heavily influenced by biotic activity rather than the plowing, which have only occurred in geologically recent times. This biomantle model of soil development would also support the relatively recent occurrence of the tree tips, since biogenetic processes would have begun to reincorporate and homogenize the soils soon after the tree fell.

Plowing has certainly transported the artifacts vertically from below the ground surface, although studies have shown that patterns can still be discerned in plow zone contexts (Trubowitz 1978, Knoerl and Versaggi 1984, Odell and Cowan 1987). It is unfortunate that similar studies have not been made regarding tree tipping, since its affects are more variable and pose a deeper potential for soil disturbance.

What prehistoric cultural groups are represented at the site?
Does the site represent a single or multiple occupations?

On the basis of radiocarbon dates and diagnostic artifacts recovered from the site, it would appear that the Roger Prehistoric Site represents a seasonal base camp occupied intermittently between the Middle Archaic through Late Woodland period. The Archaic occupation is only represented by two diagnostic point finds: a Brewerton Side Notched point dating the Middle Archaic and a Snook Kill point dating to the Late Archaic. No radiocarbon dates or features could be assigned to this earlier Archaic occupation.

A strong Early and Middle Woodland component is implied by radiocarbon dates from Feature 3 (1950 ± 40 BP), Feature 4 (2380 ± 50 BP), and Feature 5 (2470 ± 40 BP), as well as the presence of a Meadowood projectile point. Although Meadowood points are not common, they occur with some frequency in the Upper Susquehanna drainage. Funk notes the recovery of Meadowood points from a series of sites in the upper Susquehanna drainage, including the Russ Site, Locus 1 of the Fortin Site, the Camelot 1 and 2 Sites, the Maple Terrace Site, and the Enck No.2 site. While not present in the assemblage from the Rogers Prehistoric Site, Vinette I style pottery from Meadowood and associated Middlesex and Bushkill components was recovered from the Cottage site, the Johnsen No. 1 site, and the Munson Site. Little of this evidence comes from the Chenango Valley, however, with the nearest Meadowood period site discussed by Funk being the Russ site, which is located approximately 30 miles southeast of the Rogers Site along the Susquehanna River near the present community Wells Bridge in Otsego County.

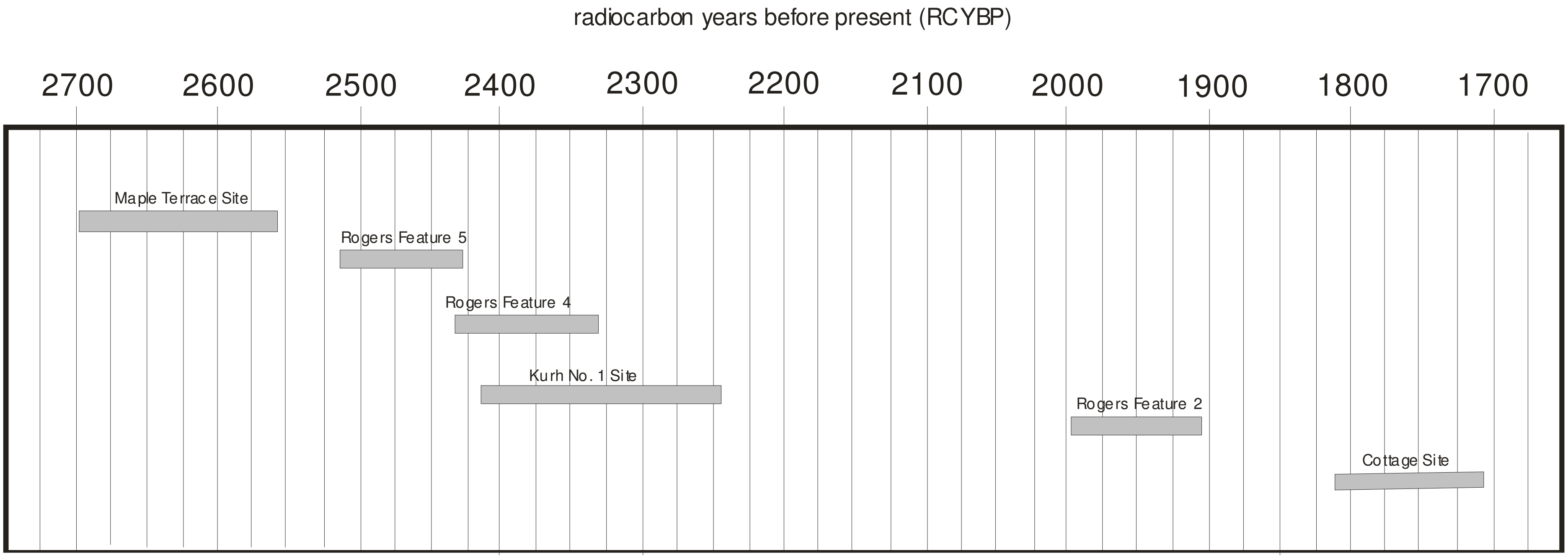
While Meadowood points occur infrequently in the region, they do occur in collections from the Chenango Valley as noted by the members of the Chenango chapter of the NYSAA and at the Longyear Museum in nearby Hamilton. While Early Woodland point styles occur infrequently in the Chenango Valley, radiocarbon dates from this period are even less common (Table 10). The nearest comparable radiocarbon dates included in Funk's study are the Maple Terrace Site, which recovered a date of 2630 ± 70 BP in association with a Meadowood point and some Vinette I pottery, the Kuhr No. 1 Site, which yielded a date of 2330 ± 85 BP in association in Vinette I pottery, and the Cottage Site, which recovered a date of 1810 ± 100 years BP in association with a broad stemmed projectile point thought to be associated with the Bushkill complex or possibly a Canoe Point occupation. As shown by Table 10, these radiocarbon dates from the Rogers Prehistoric Site fill several gaps in Funk's published radiocarbon sequences for the Upper Susquehanna and its tributaries.

In addition to the Early and Middle Woodland components, a Late Woodland component, represented by a grit-tempered, cord-impressed pottery sherd (Figure 41) and three small cultural features (Features 6-8) was identified as part of the mechanized stripping along the proposed water line (Figures 17-19). Radiocarbon samples from each of these features yielded dates of 850+/-40 BP, 760+/40 BP, and 350+/-60 BP, respectively (Table 4).

It is interesting to note that the radiocarbon dates from these features become increasingly younger as one moves north away from the edge of the swale (See Appendix G). The presence of Late Woodland features in proximity to the artifact cluster identified during the mechanized stripping (Figure 20) suggest that these artifacts may also be of similar age, although there is no reason to assume that all of the artifacts northern part of the site date exclusively from this period.

Table 10.

Early Woodland Radiocarbon Dates in the Susquehanna Valley



Summary

A Phase III data recovery has been performed for the Rogers Prehistoric Site, located on the edge of a gravel terrace at the Rogers Environmental Center near the Village of Sherburne, Chenango County, New York. The data recovery consisted of three components: The first component consisted of geoarchaeological investigations conducted with soil probes and later backhoe trenching to establish a geomorphic context and to look for macrofloral or paleobotanical remains that may be of use in paleoenvironmental reconstruction. The second component involved the excavation of 15 1 x 1 m square excavation units in the vicinity of the proposed new well house and parking area. Finally, after these other studies were completed, a third phase involving mechanized scraping along the proposed water main corridor and access road was completed.

The first component of the data recovery, the geoarchaeological investigations, initially met with limited success, since the soil cores proposed were not able to extend into the loose gravelly fill of the terraces. Undiscouraged, two backhoe trenches were excavated that season to examine the stratigraphy and look for pollen and macrofloral remains. This ultimately yielded a large sample of desiccated leaves and other organic matter, which was radiocarbon dated to 1,145 ± 20 BP (ISGS-A0666). While pollen was present in the sample, the taxonomic identification of the plant remains or the results of the pollen analysis were not yet available at the time of the report completion.

The geoarchaeological investigations were able to provide valuable information about the geomorphic context of the landforms on and directly adjacent to the site, and also provided a radiocarbon date that provided a rough idea of when the scarp along the southern and eastern edges of the site was produced. The geoarchaeological investigations were especially successful in aiding in the interpretation of some of the biotic and other natural processes that helped to shape the site. Most notably, the presence of tree throws along the upper terrace, which were identified in many of the units excavated, which help to explain some of the uneven stratigraphy that we encountered. Conclusions of the geoarchaeological study tentatively indicated that the site was situated in a biomantle, whereby little erosion or deposition was taking place, thus leaving time for the upper soils to be affected by natural processes, such as the tree throws described above.

The second component involved the excavation of 15 1 x 1 m excavation units directly where the new well house and parking area are proposed. These investigations provided a host of new information about the site, both by the large number and diversity of artifacts recovered as well as the identification of five prehistoric cultural features. The placement of many of the units contiguous to one another allowed us to examine larger areas, without which, it would have been very difficult to identify features or examine larger stratigraphic profiles. While the results indicated that much of the site area appeared to have been heavily modified by tree throws and other forms of floralturbation and biotic activity, other areas appeared relatively undisturbed.

The third and final component of the data recovery involved the mechanized stripping of the topsoil to look for cultural features and artifacts. Results of this component were very successful, and allowed for the identification of three cultural features all dating to the Late Woodland Period. This component also identified a number of artifacts which were individually piece plotted, including a cluster of artifacts near the northern site boundary, where few had been found previously (Figure 20). In addition, a volumetric bucket sampling strategy was developed and implemented from the scraping, with two leveled 5 gallon buckets taken and screened through hardware cloth in 2 m intervals along the entire length of the mechanized stripping area. This latter methodology proved much more time consuming than was planned, although the results provided systematic information about artifact density and recovered a large number of artifacts (n=1,005), including 5 bifaces, a chert core, and 15 fragments of FCR.

Taken as a whole, the information obtained as part of the data recovery was able to address a number of research questions posed as part of the DRP. The results indicate that the site was used seasonally as a base camp or resource extraction center from the Late Archaic through the Late Woodland period. Chipped stone debitage recovered from the site suggested that small scale tool manufacturing and maintenance was taking place more regularly than earlier stage lithic reduction, which is less represented in the record. This also suggests that the majority of the lithic raw material was being brought to the site rather than being obtained or quarried in the close vicinity. While the majority of the bifacfially worked tools were not temporally diagnostic, heavy wear and edge damage suggests that these tools were actively used at the site rather than being freshly manufactured for use at a later date.

On the basis of radiocarbon dates and diagnostic artifacts recovered from the site, it would appear that the Roger Prehistoric Site represents a seasonal base camp occupied intermittently between the Middle Archaic through Late Woodland period. The Archaic occupation is only represented by two diagnostic point finds: a Brewerton Side Notched point dating the Middle Archaic and a Snook Kill point dating to the Late Archaic. No radiocarbon dates or features could be assigned to this earlier Archaic occupation.

A strong Early and Middle Woodland component is implied by a series of radiocarbon dates from Feature 3 (1950 ± 40 BP), Feature 4 (2380 ± 50 BP), and Feature 5 (2470 ± 40 BP), as well as the recovery of a fragment of a Meadowood projectile point. Although Meadowood points are not common, they occur with some frequency in the Upper Susquehanna drainage. Funk notes the recovery of Meadowood points from a series of sites in the upper Susquehanna drainage, including the Russ Site, Locus 1 of the Fortin Site, the Camelot 1 and 2 Sites, the Maple Terrace Site, and the Enck No.2 site. While not present in the assemblage from the Rogers Prehistoric Site, Vinette I style pottery from Meadowood and associated Middlesex and Bushkill components was recovered from the Cottage site, the Johnsen No. 1 site, and the Munson Site. Little of this evidence comes from the Chenango Valley, with the nearest Meadowood period site discussed by Funk being the Russ site, located approximately 30 miles southeast of the Rogers Site along the Susquehanna River near the present community Wells Bridge in Otsego County.

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In addition to the Early and Middle Woodland components, a Late Woodland component, represented by a grit-tempered, cord-impressed pottery sherd and three small cultural features (Features 6-8) was identified as part of the mechanized stripping along the proposed water line. Radiocarbon samples from each of these features yielded dates of 850+/-40 BP, 760+/40 BP, and 350+/-60 BP, respectively. While these features appear fire related on the basis of the large amounts of charcoal and fire cracked rock recovered from their contents, they are all relatively small in comparison with the earlier features. As a result, it is unclear if these features represent hearths or fire pits or if they are associated with roasting and food preservation.

One of the most interesting aspects of the findings as part of the data recovery has to do with the seasonality of the occupations implied by the macrofloral remains recovered from the feature fill. While we suspect that the site was also occupied in the spring and early summer, the results of the macrofloral analysis only suggest occupation in the late summer/fall months, when raspberries/blackberries, elderberries, many types of grass seeds, and hickory nuts and walnuts are available (Appendix E). This could be due to biases in preservation within the features. The results of lithic use wear analysis suggest that while butchering and hide processing were likely taking place at the site (both common activities in the late fall and winter), other tools show evidence of working on different surfaces, and artifacts such as the drill fragments, pebble/cobble tools, and the netsinker all suggest that other activities were also taking place. Additionally, while expended cores and debitage of all sizes were found at the site, none of the biface fragments recovered suggest that classic Early Woodland cache blades were being produced at the site, which, according the Granger (1978), was a classic late fall activity during Meadowood times, when people would make preparations for the upcoming hunting season.

If the Rogers Prehistoric Site was only occupied in the late fall, it suggests that Early and Middle Woodland people in the Chenango Valley were less sedentary, and that seasonal mobility was more complex, with people occupying areas for shorter periods, and with fewer seasonal reoccupations. Under traditional models of Woodland development, patches of small grass seeds were often visited and maintained in the spring to produce better harvests when they returned in the fall. The adoption of agriculture in the Eastern Woodlands has been postulated to derive from increased sedentism created by people tending these new semi-domesticates longer as it begins to play a more significant role in their diets. While it appears that Woodland people were likely procuring and processing wild grass seeds at the site, the amount of labor involved in the exercise and the significance of small grass seeds in their overall diets is not fully understood.

While the data recovery at the Rogers Prehistoric Site answered many questions that we had about the site, some of our findings pose further questions and suggest possibilities for future research in the region. It is unfortunate that so little professional research has been conducted in the upper drainage. While the Public Archaeology Facility has been conducting research in the valley for many years, the majority of the prehistoric sites that have been encountered have been avoided as a result of their investigations. While avoidance is clearly the preferred alternative, the initial results of the Phase I surveys do not provide the kind of radiocarbon or macrofloral information necessary to compare the information obtained from the Rogers site with other known sites along other landforms near the Village of Sherburne. Consequently, it is exceedingly difficult to accurately place the role of the Rogers Prehistoric Site as it relates to other associated sites which occur nearby. Once more information is obtained as part of other investigations the area, a more complete picture of the prehistoric in the northern Chenango drainage will likely emerge.

Another aspect that has not been fully addressed as part of the data recovery is the overall size of the Rogers Site, since testing outside of the area of potential effects (APE) was not within the scope of the current study. The fact that high densities of relatively small size flakes were recovered throughout the proposed well site suggests that additional archaeological finds would likely occur in all directions, and that the staff of the Rogers Environmental Center should take great care to avoid impacting adjacent areas through ground disturbance.

The data recovery at the Rogers Prehistoric Site has produced important new information about the prehistory of the regions, most notably with its contributions to the known radiocarbon chronology and evidence of seasonal patterning. As a result, the data obtained from this study can be used to provide a valuable baseline for future investigations by providing systematically recovered information that can be compared with newly discovered and investigated sites in the upper Chenango Valley.

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Appendix A.

Figures

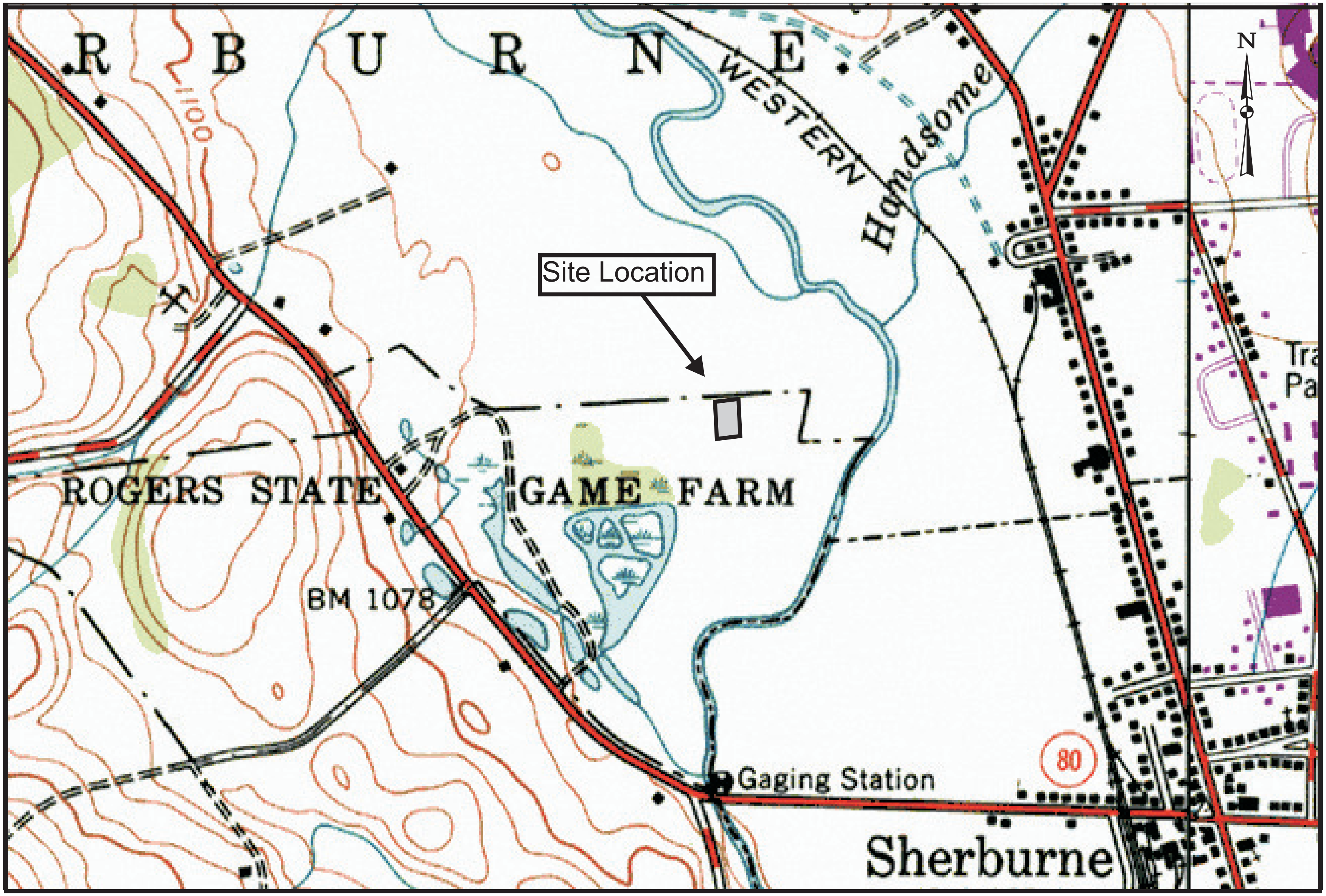

Figure 1. Detail of Earlville USGS topographic map showing the location of the Rogers Prehistoric Site.

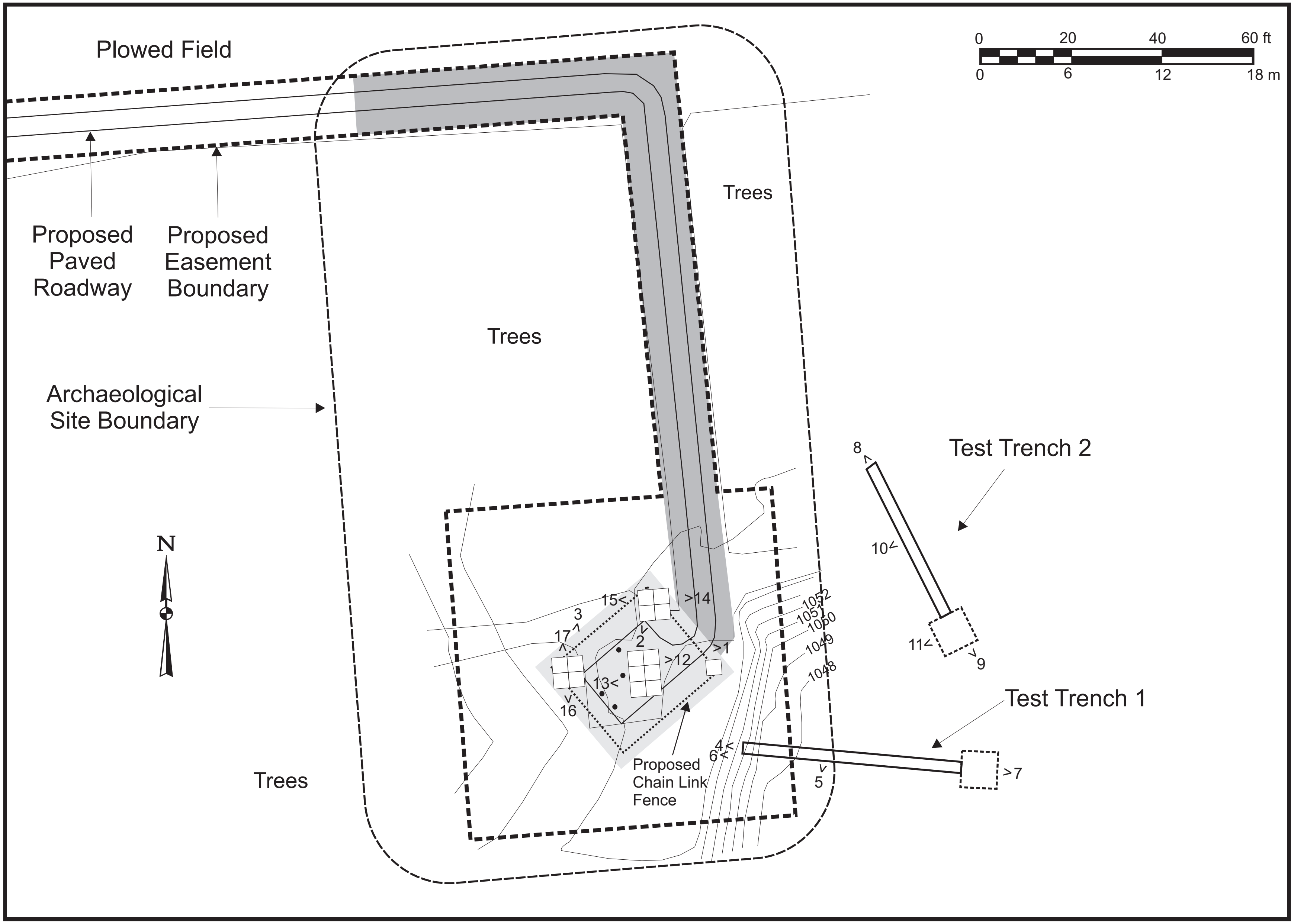

Figure 2. Map showing the stages of the data recovery at the Rogers Prehistoric Site.

Figure 3.Infrared aerial photograph with the project area indicated.

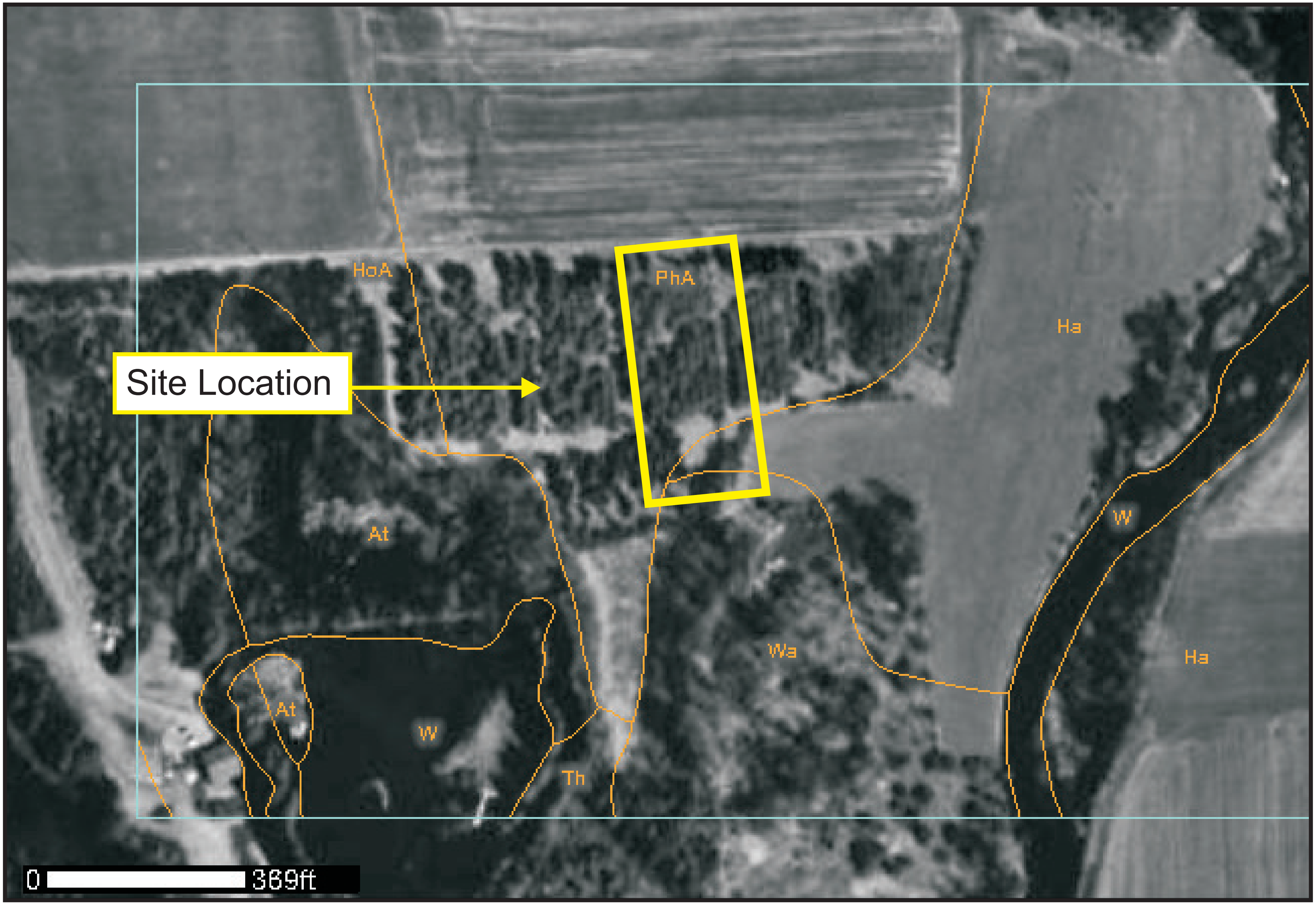

Figure 4. NRCS soils map with the Rogers Prehistoric Site indicated.

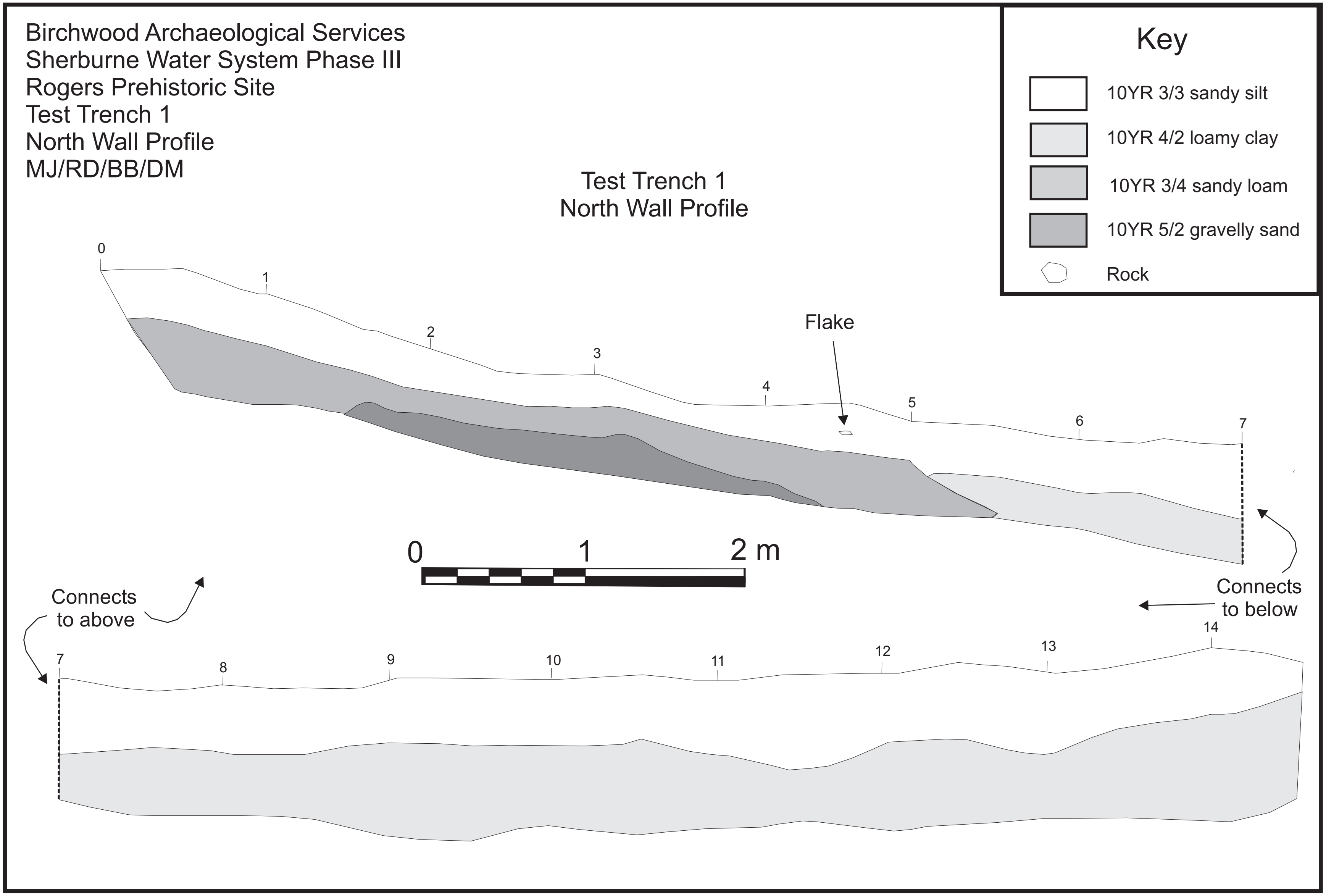

Figure 5. North wall profile of Test Trench 1.

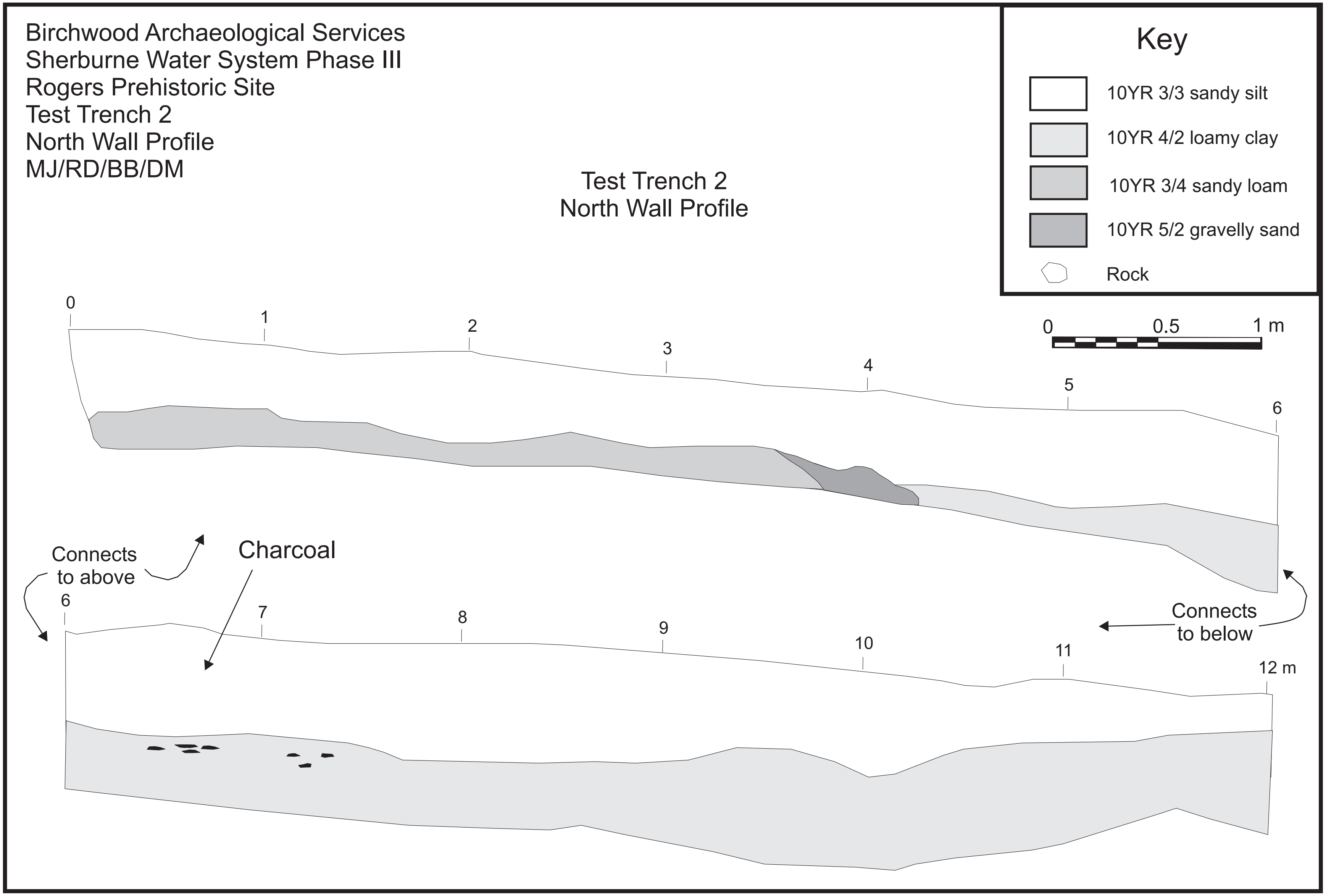

Figure 6.North wall profile of Test Trench 2.

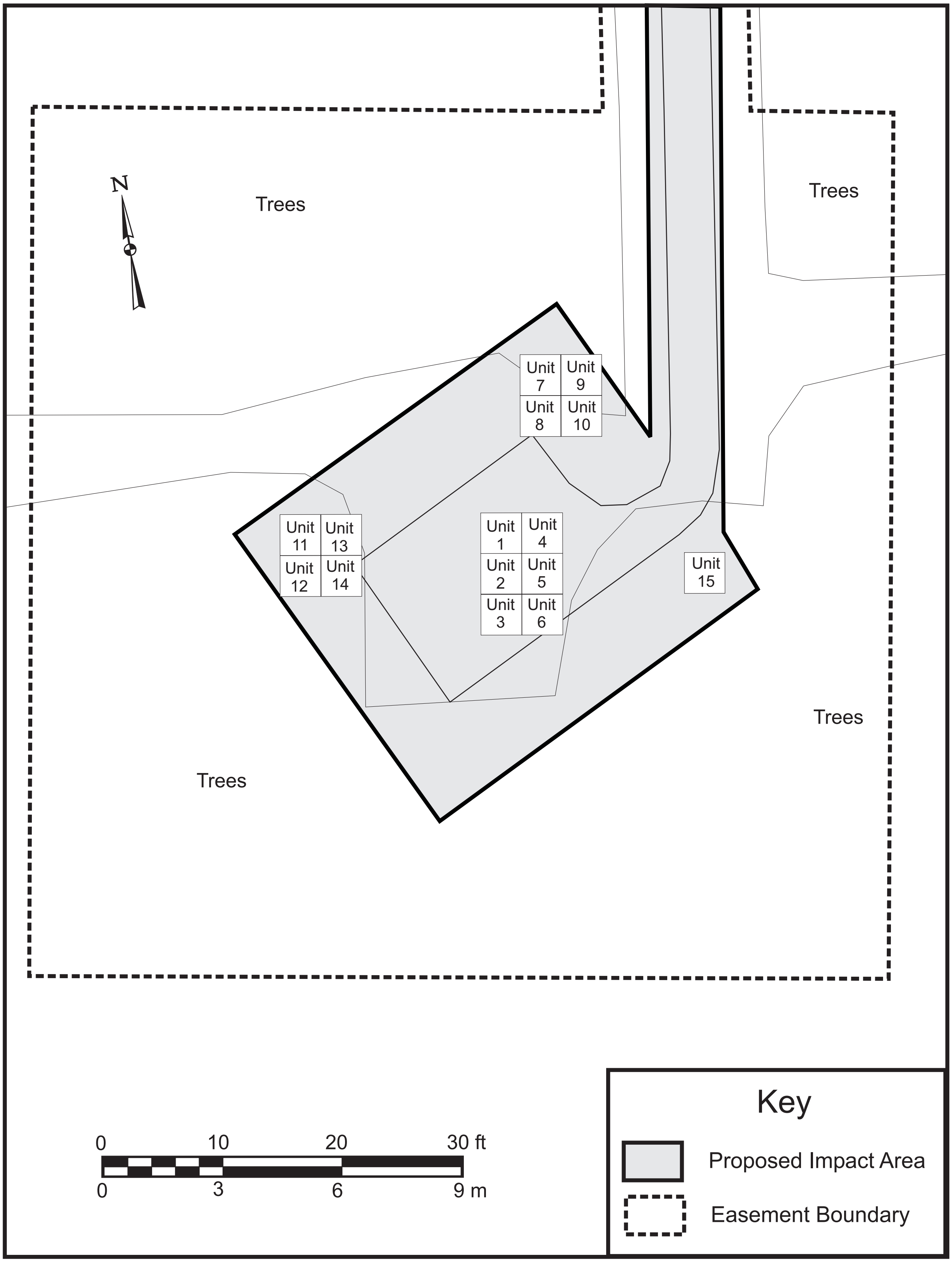

Figure 7. Map showing the placement of units at the Rogers Prehistoric Site.

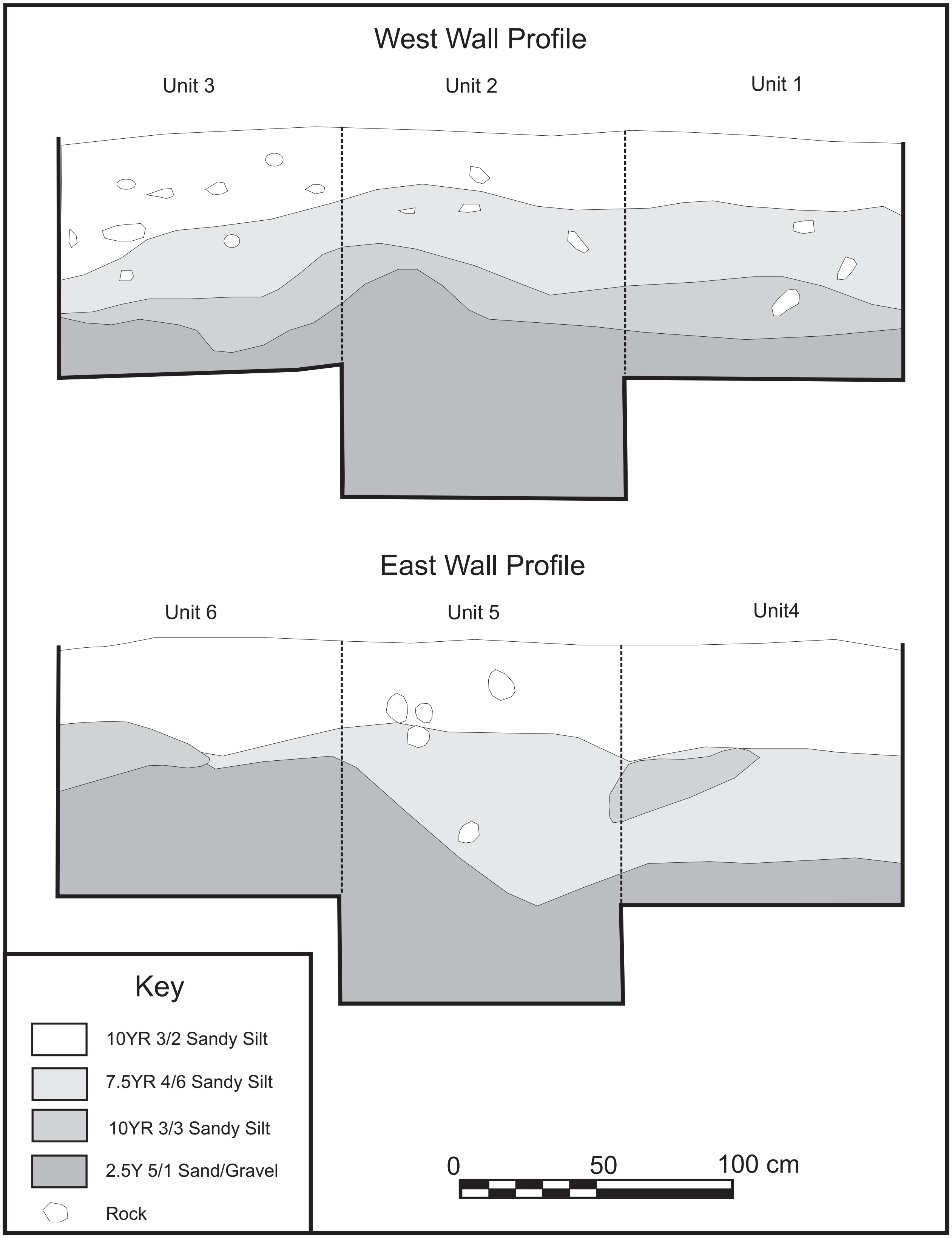

Figure 8. East and west wall profiles of Units 1-6.

Figure 9. East and west wall profiles of Units 7-10.

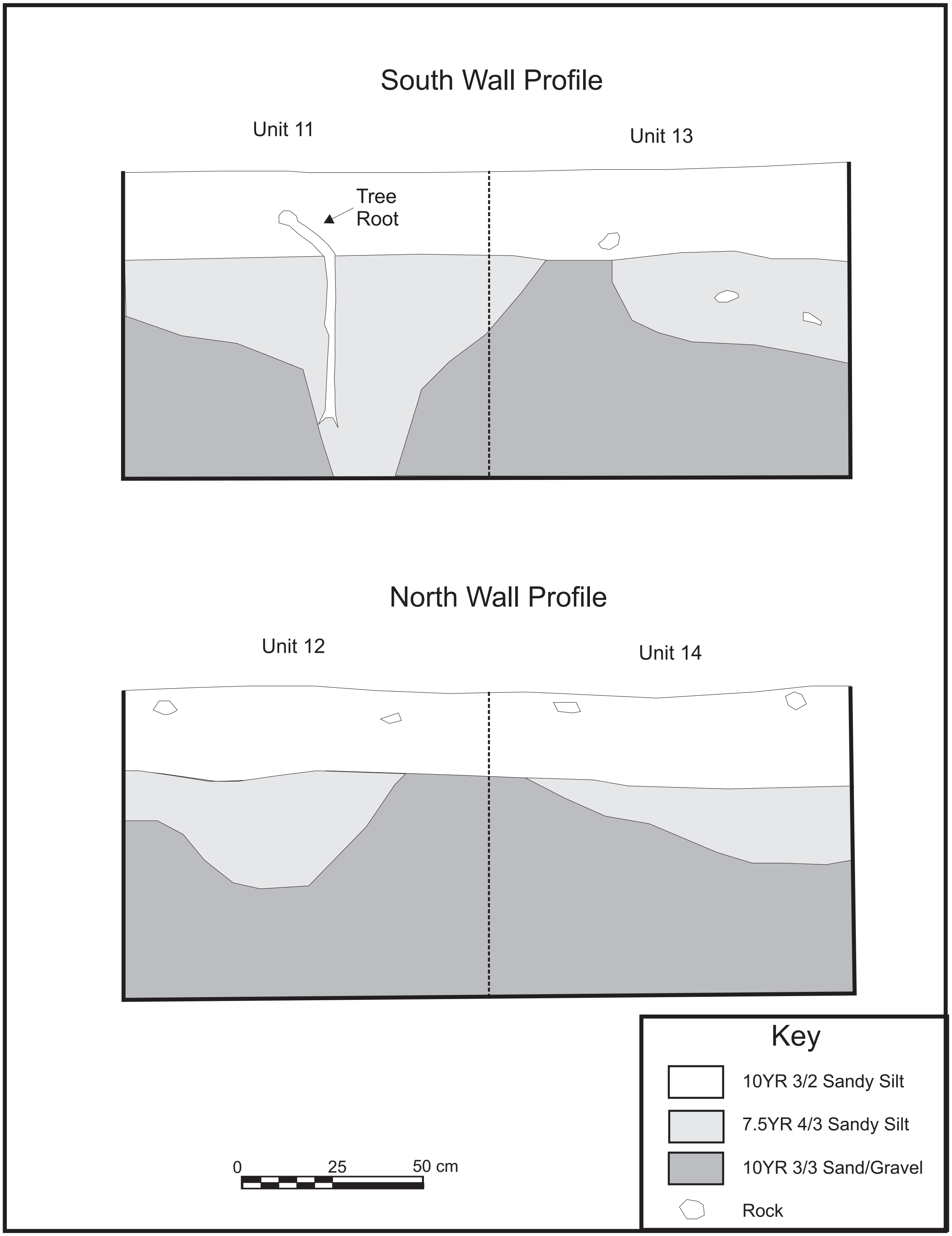

Figure 10. North and south wall profiles of Units 11-14.

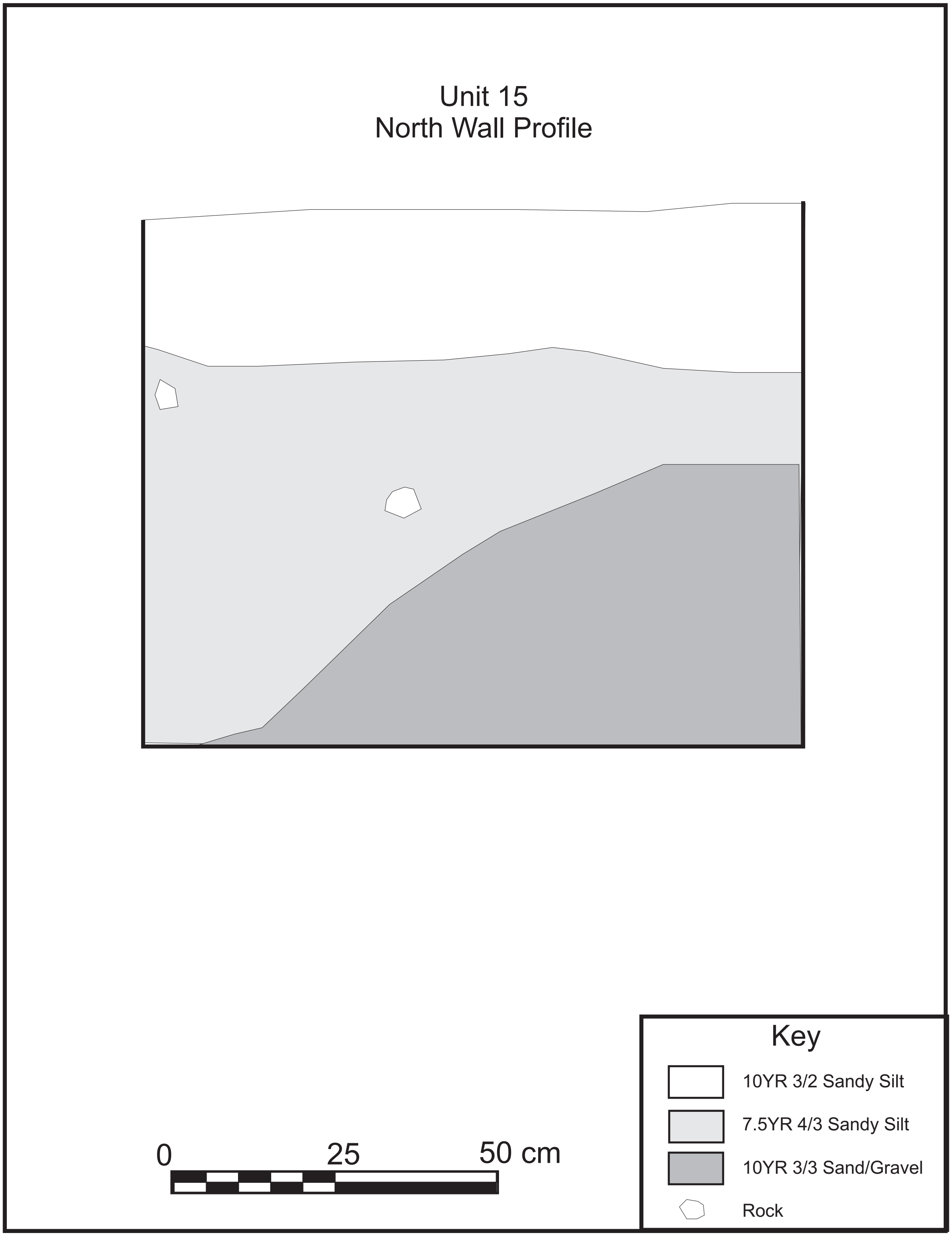

Figure 11.North wall profiles of Unit 15.

FIG. 8.—First effect of overturned trees in introducing vegetable matter in soils. a, leaf mold accumulated in pit. (Shaler 1892)

Figure 12. Figure explaining the process of tree tipping in the archaeological record. After Shaler 1892.

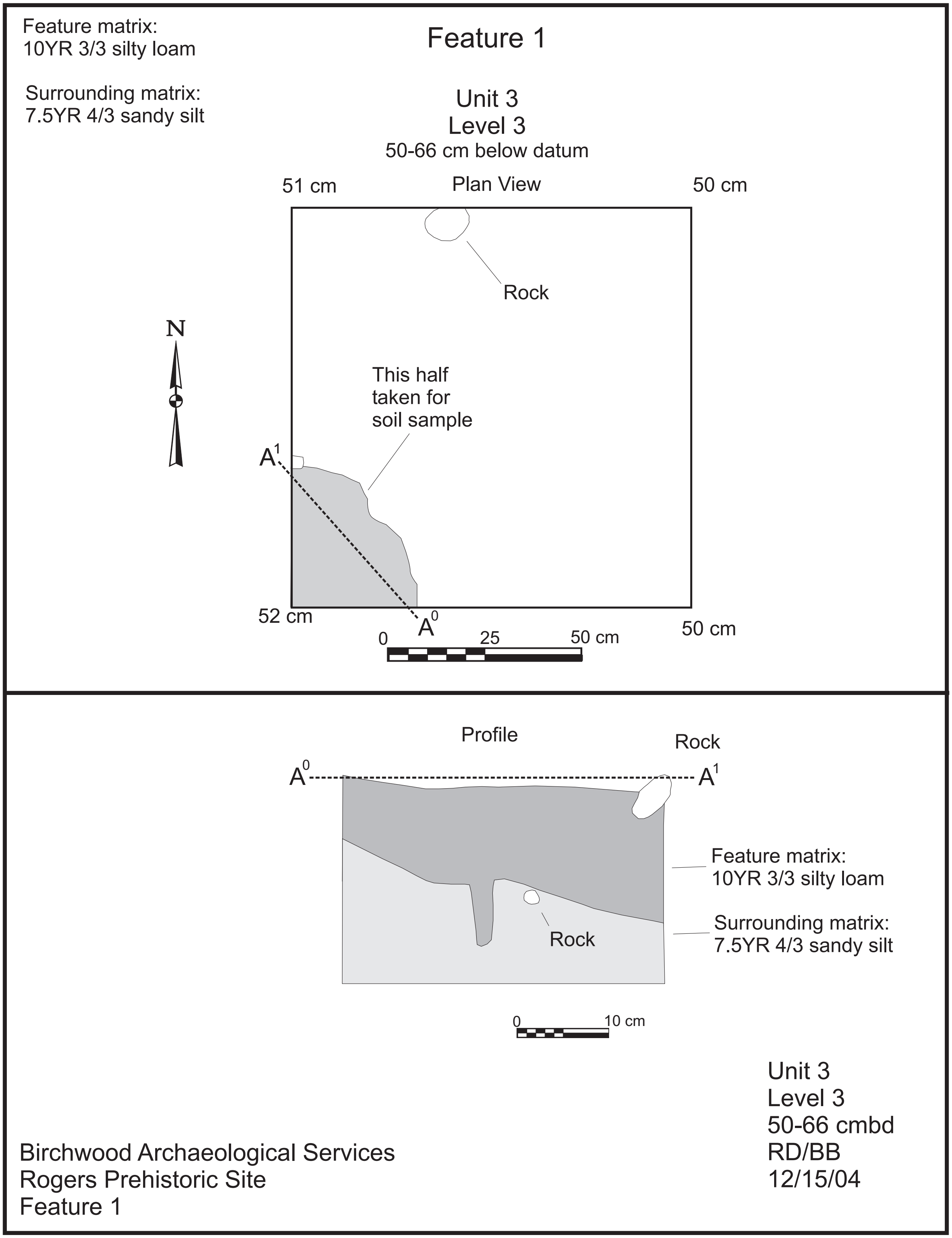

Figure 13. Plan view and profile of Feature 1.

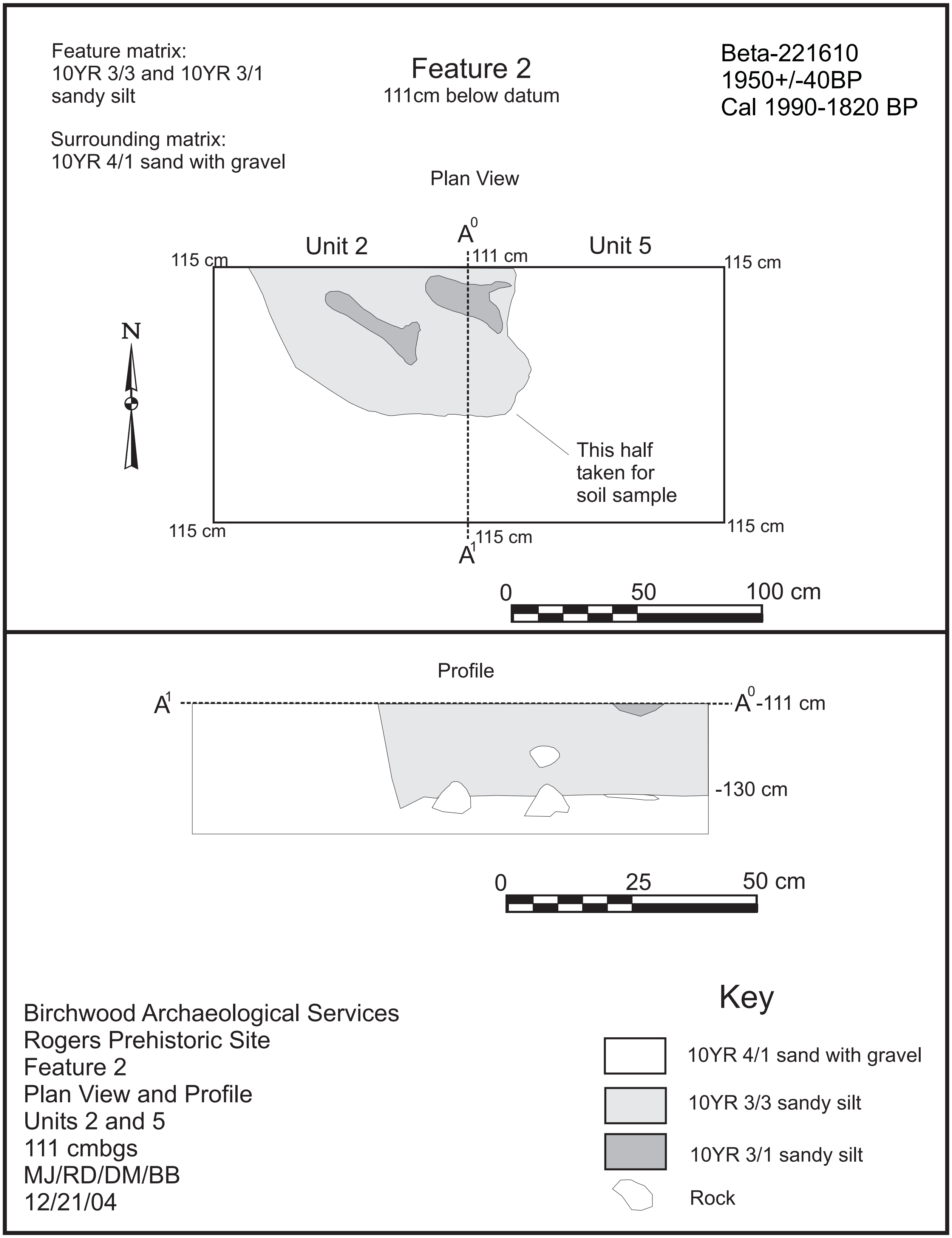

Figure 14. Plan view and profile of Feature 2.

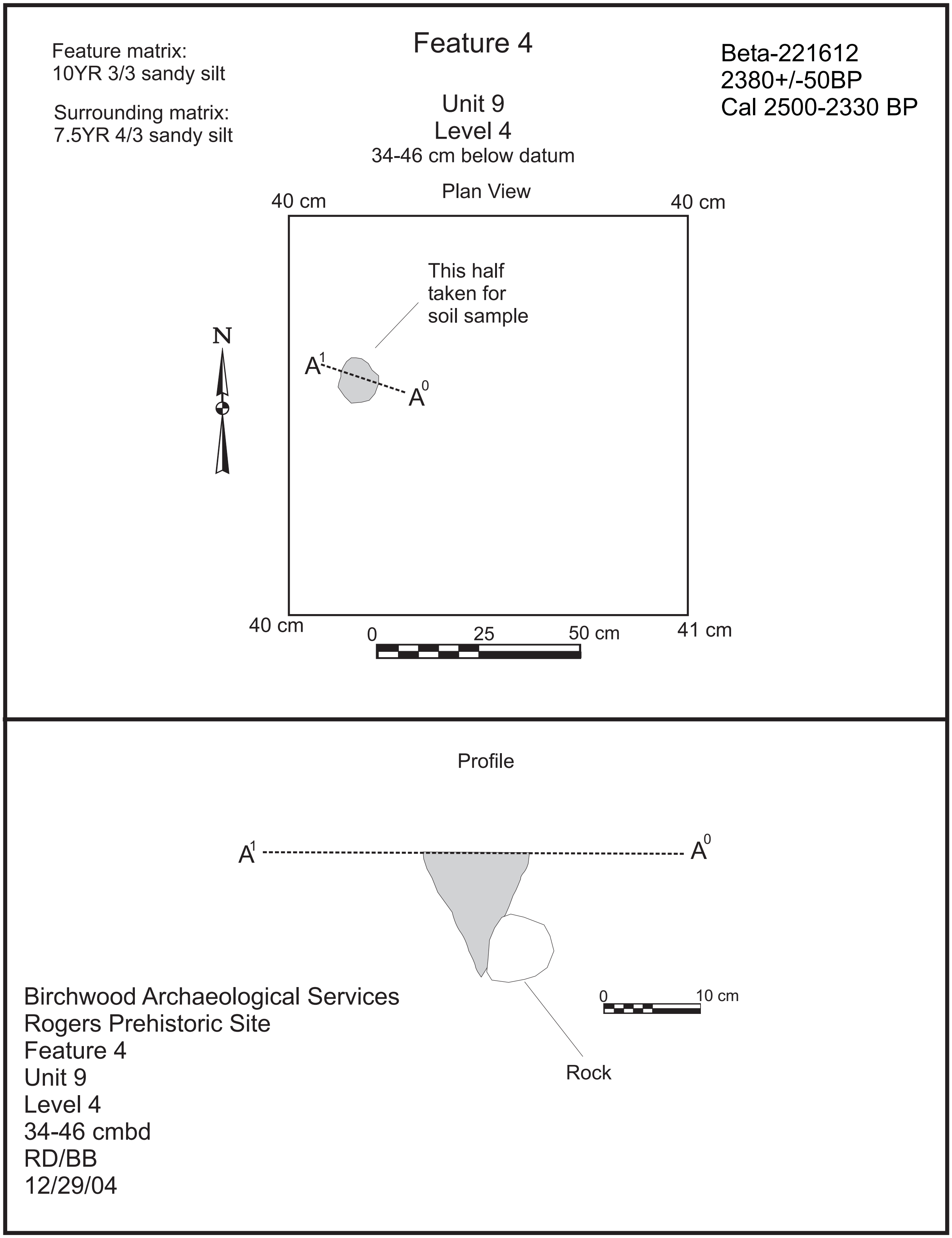

Figure 15. Plan view and profile of Feature 4.

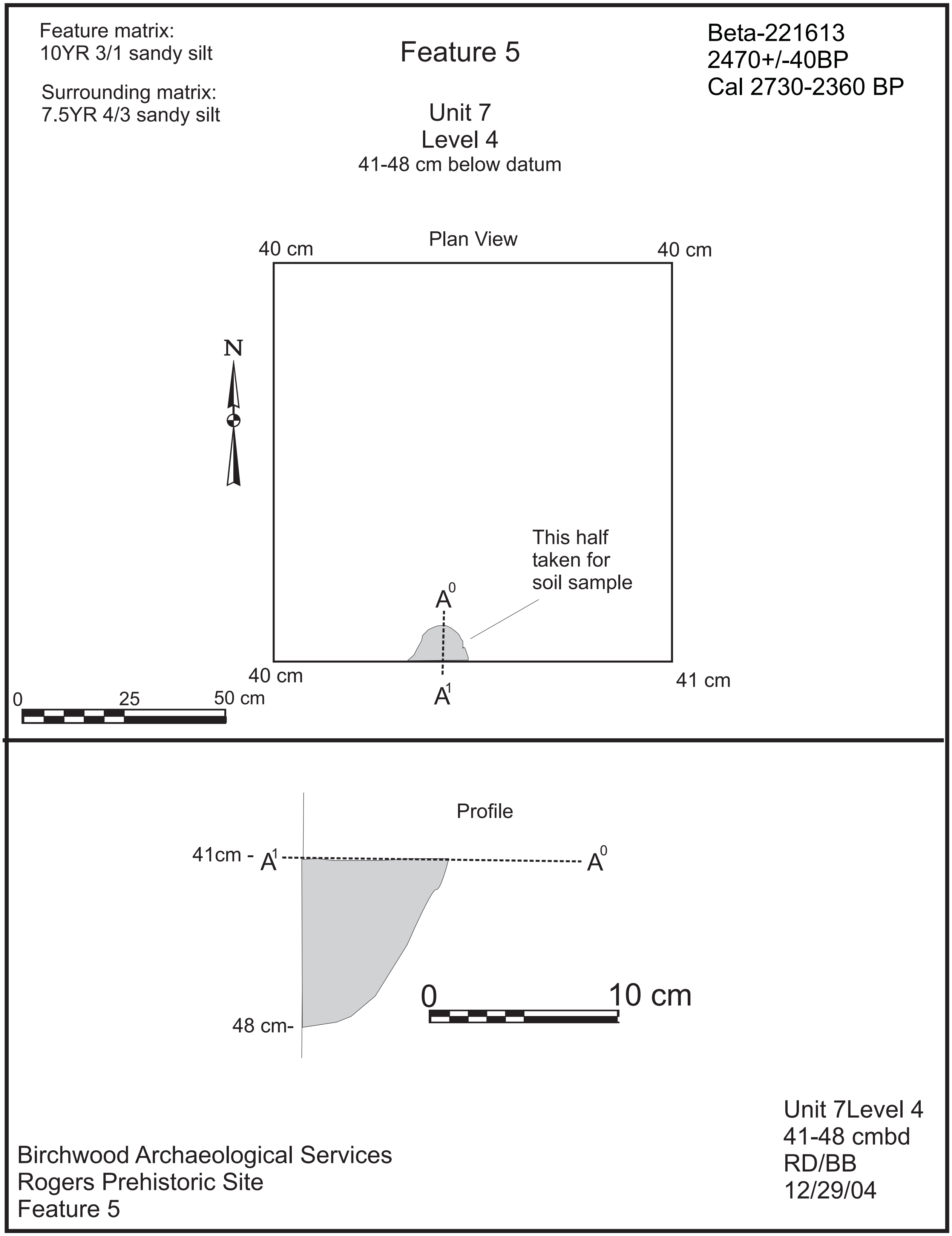

Figure 16. Plan view and profile of Feature 5.

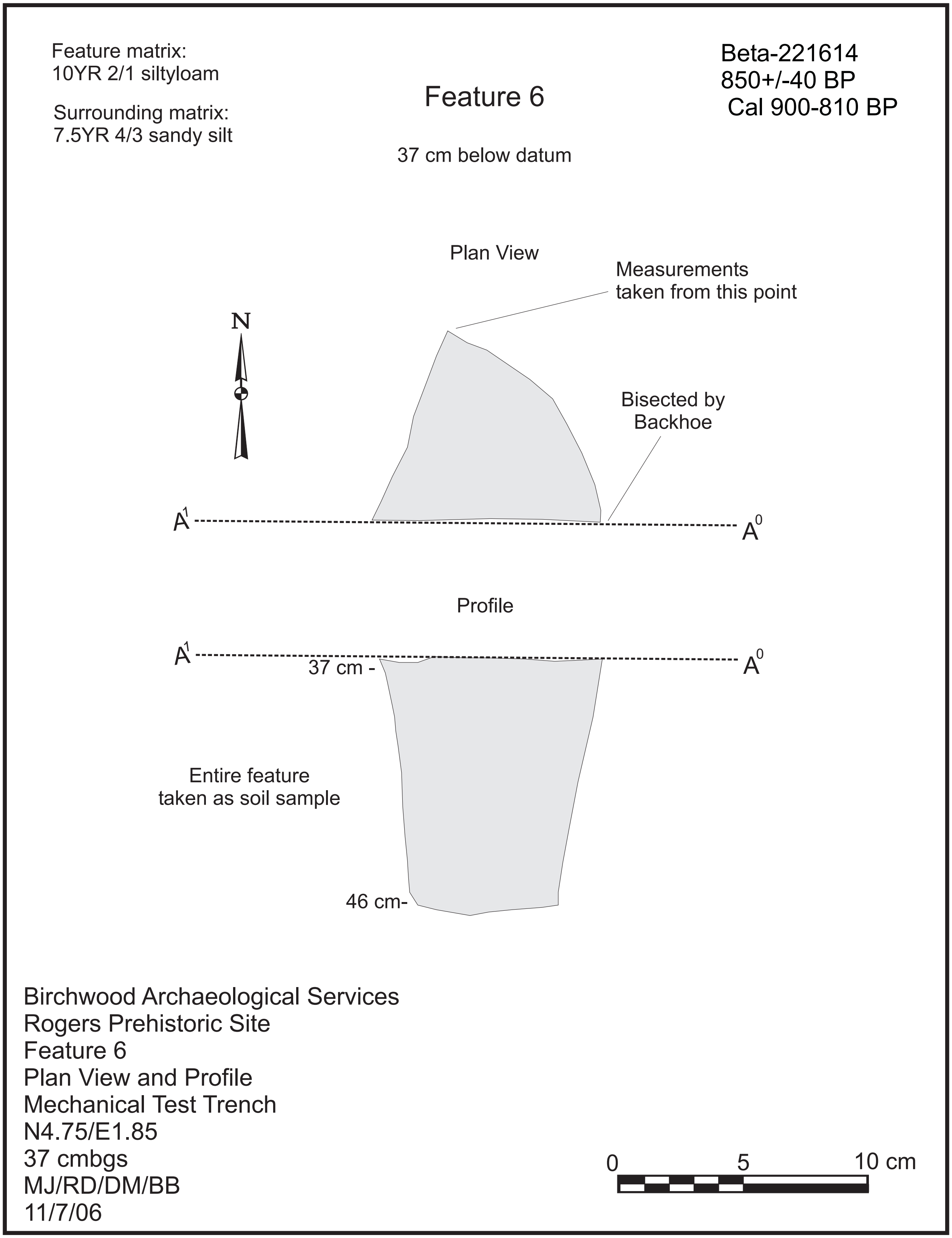

Figure 17. Plan view and profile of Feature 6.

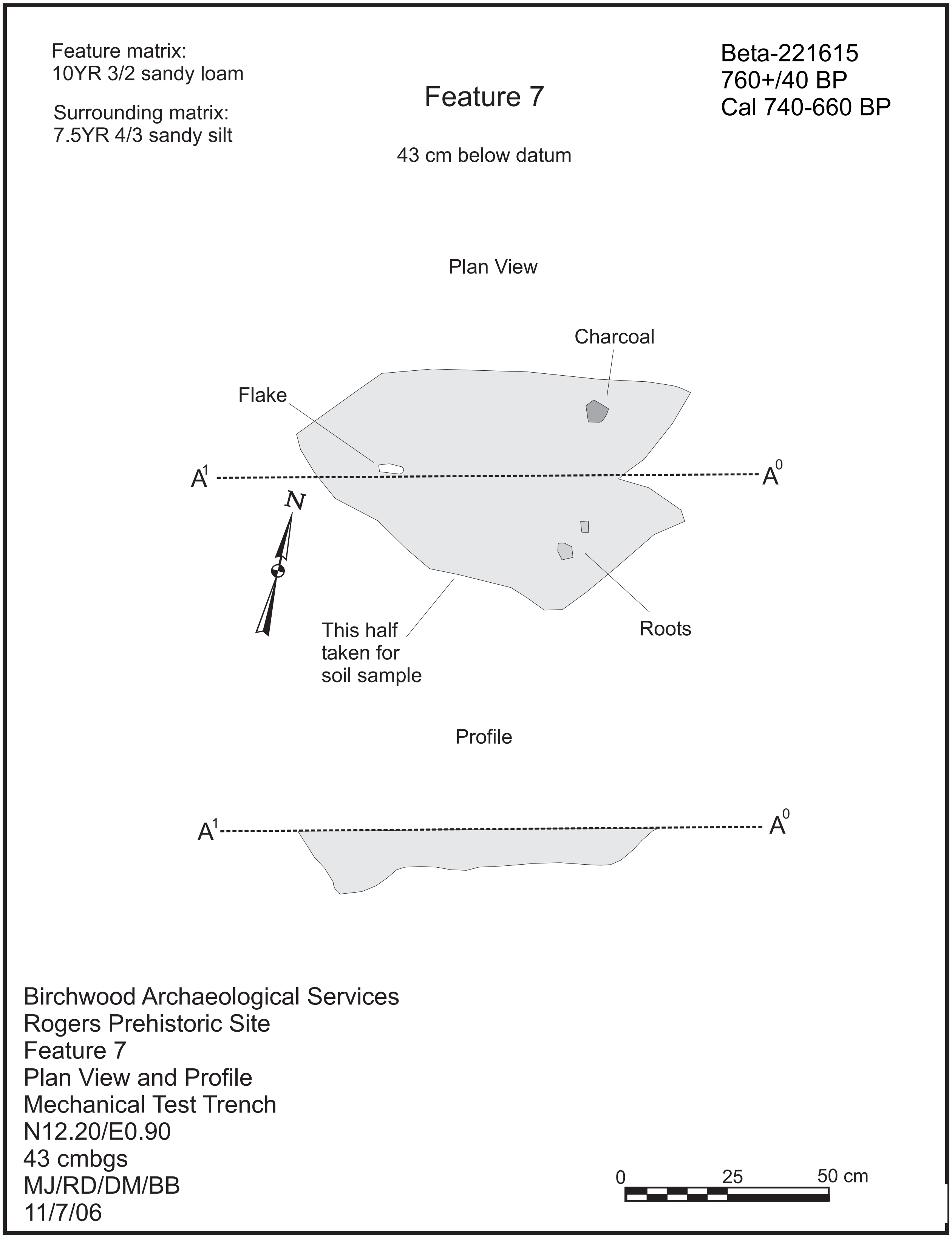

Figure 18. Plan view and profile of Feature 7.

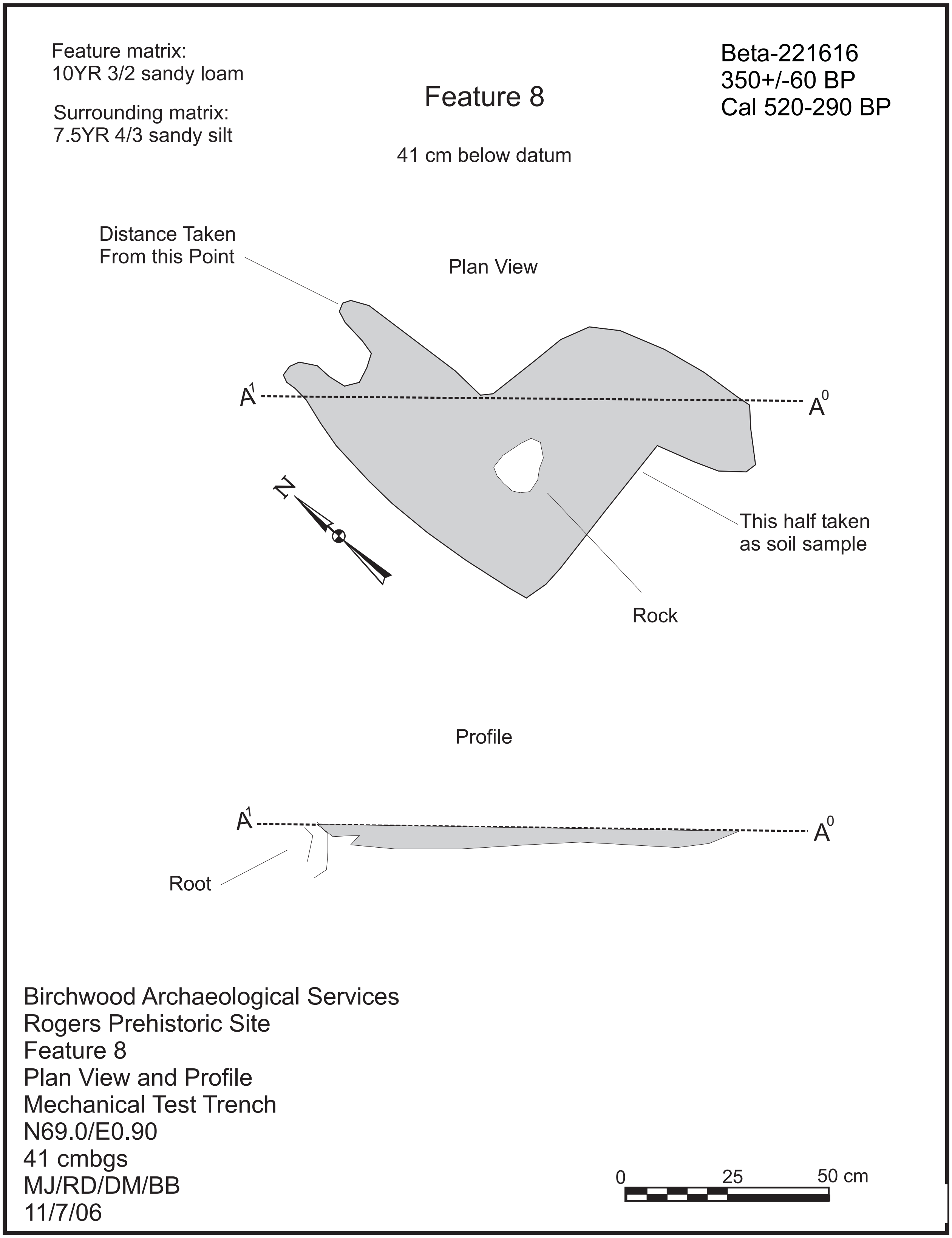

Figure 19. Plan view and profile of Feature 8.

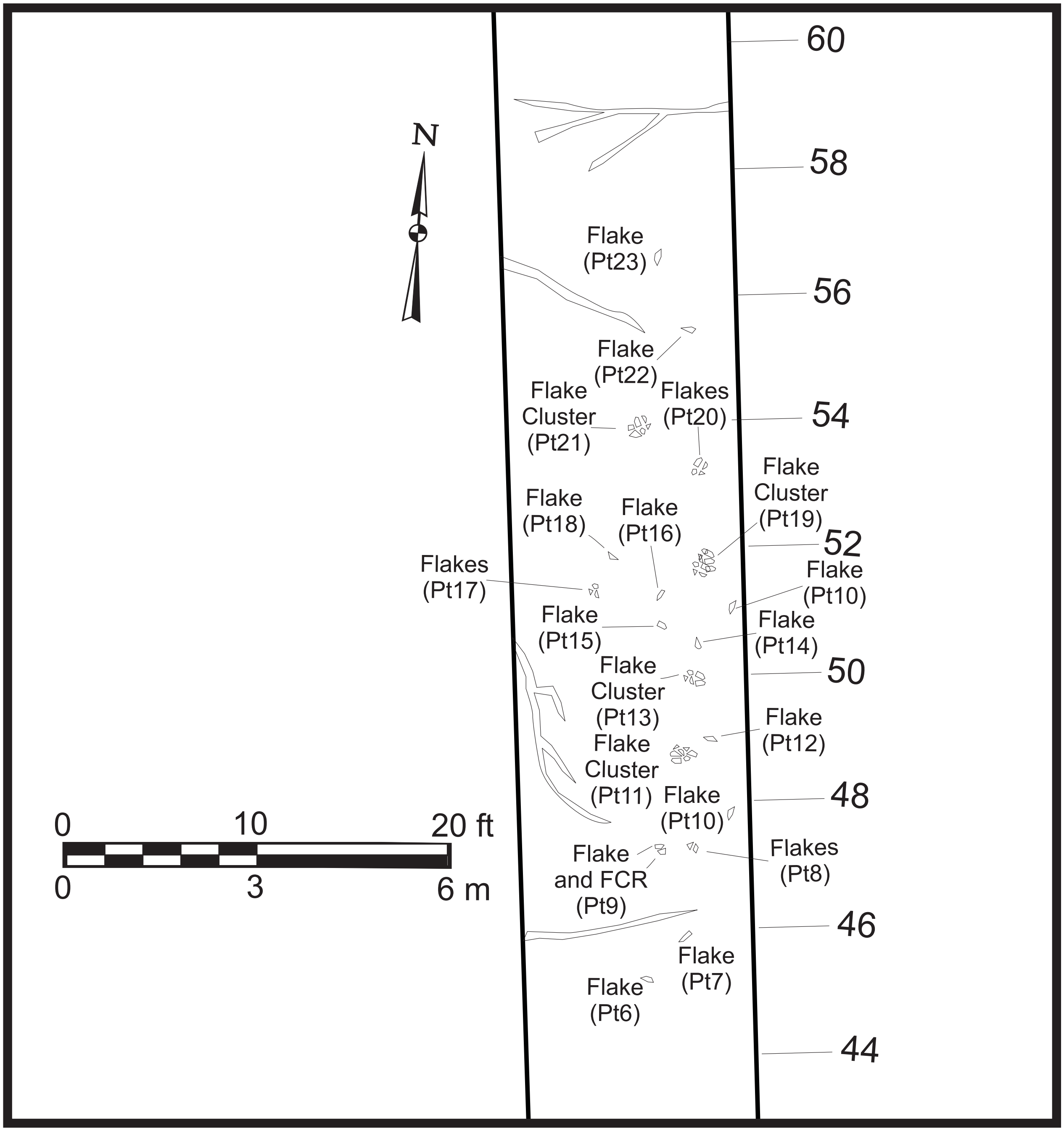

Figure 20. Map showing an artifact cluster along the mechanized scraping corridor

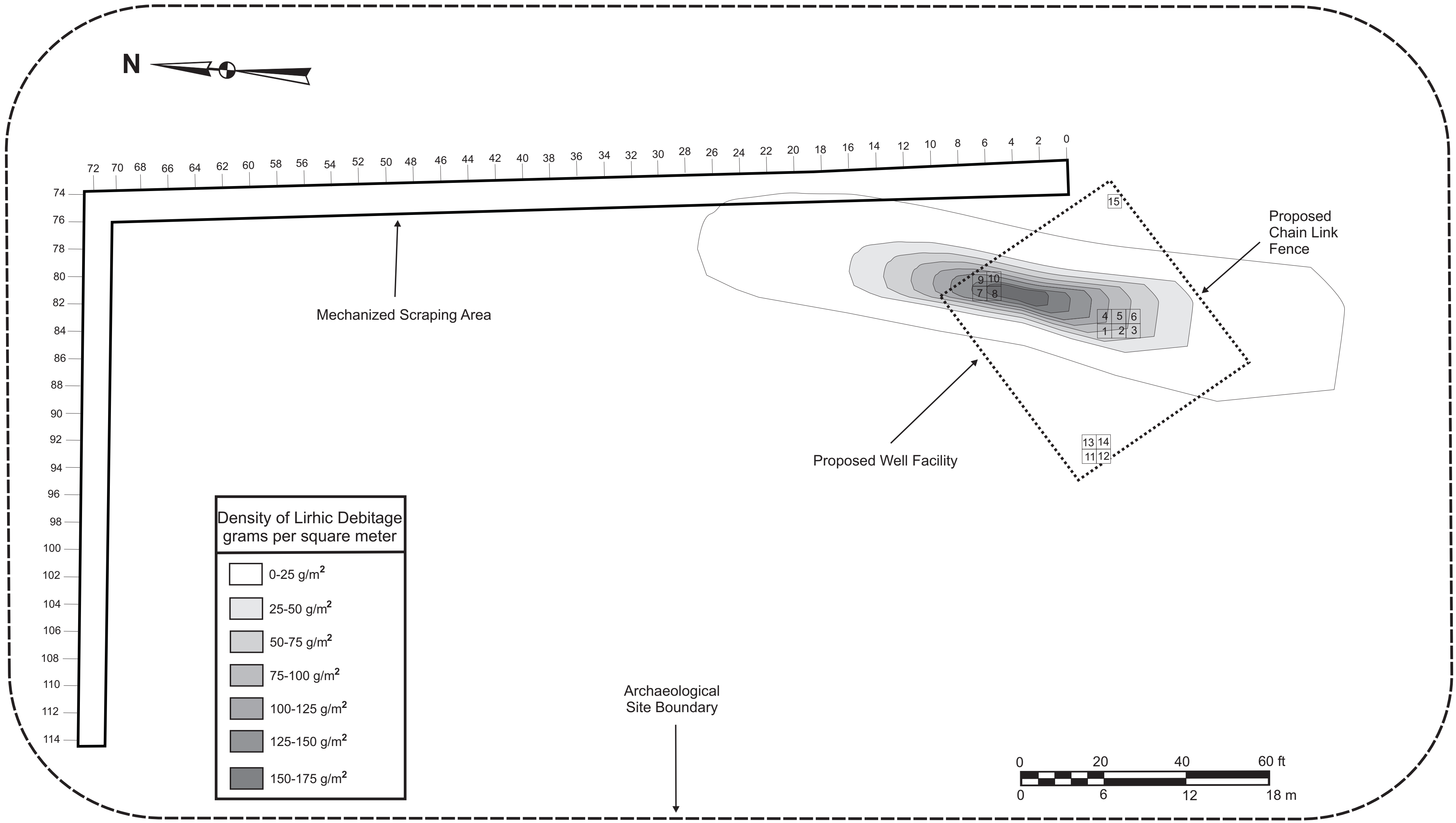

Figure 21. Map showing the density of lithic debitage as grams per square meter.

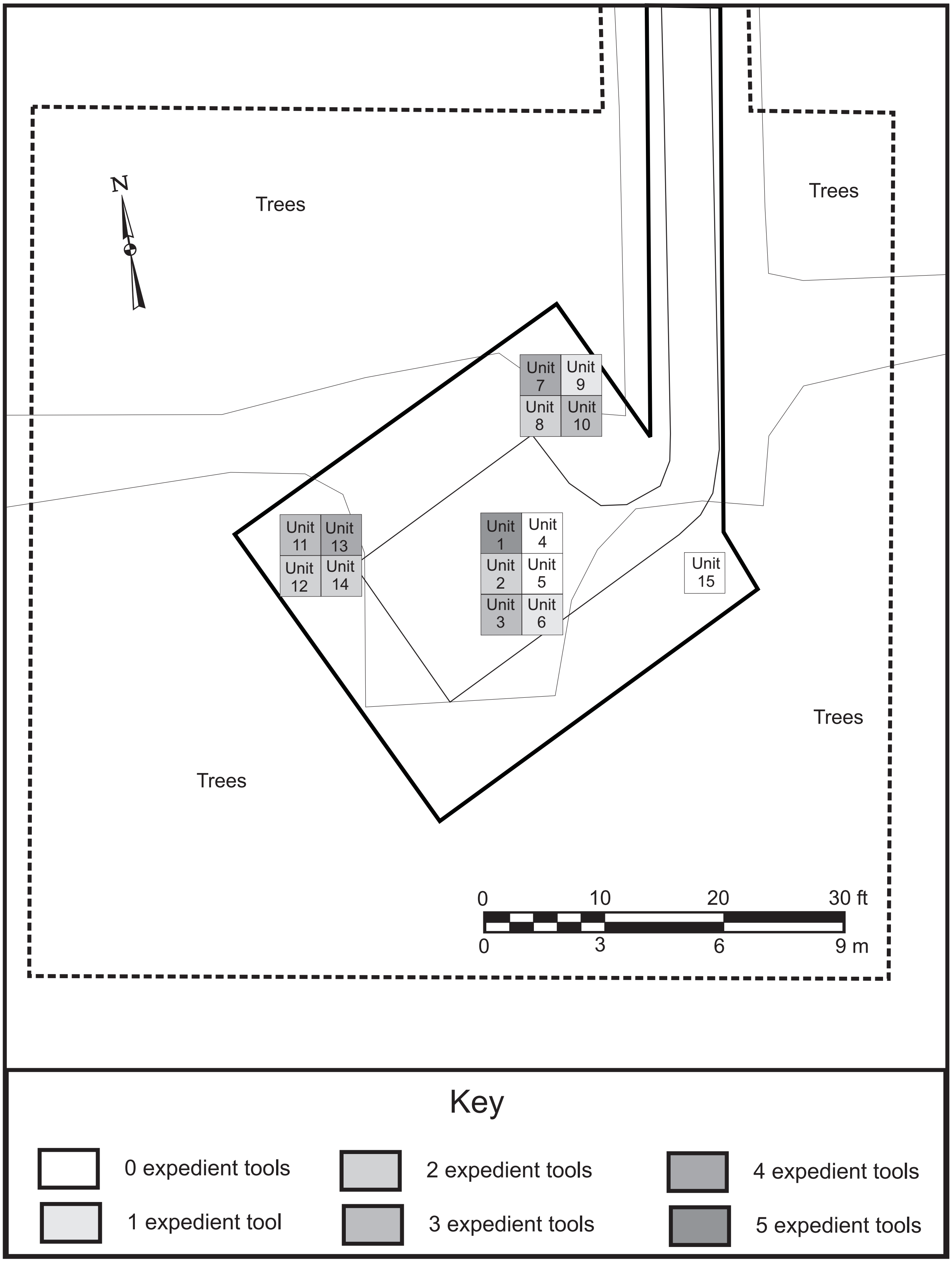

Figure 22. Map showing the occurrence of expedient flake tools at the Rogers Prehistoric Site.

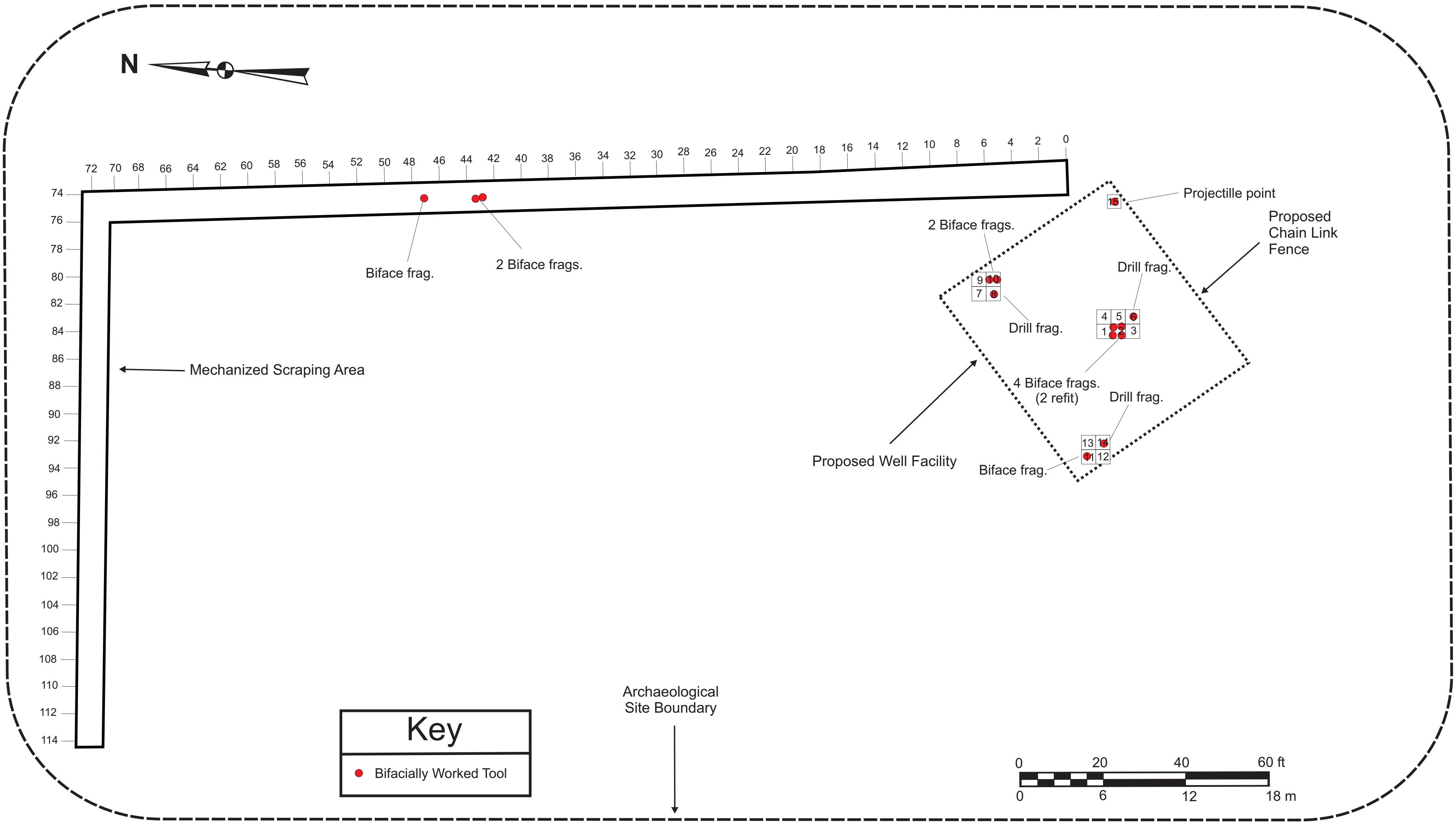

Figure 23. Map showing the occurrence of bifacially worked tools at the Rogers Prehistoric Site.

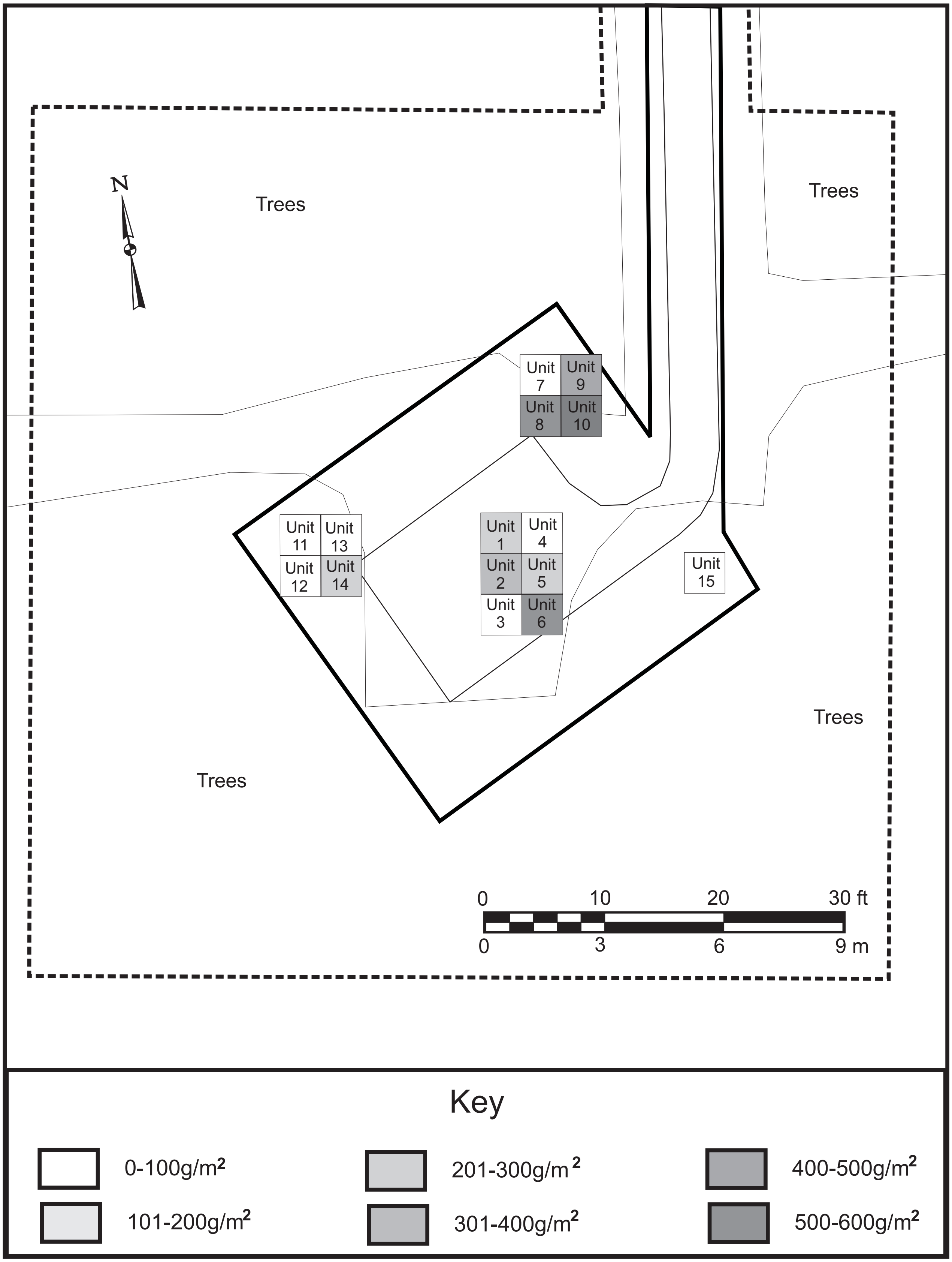

Figure 24. Map showing the density of fire cracked rock (FCR) at the Rogers Prehistoric Site.

Appendix B.

Photographs


Photo 1. View of the existing well field at the Rogers Prehistoric Site, facing west


Photo 2. View of Units 7-10 at the Rogers Prehistoric Site, facing northeast.


Photo 3. View of Units 11-14 at the Rogers Prehistoric Site, facing south.


Photo 4. View from the western end of Test Trench 1, facing east.


Photo 5. View of flake found in the north wall of test trench 1, facing north.


Photo 6. View from the western end of Test Trench 1, facing east.

Photo 7. View from the eastern end of Test trench 1, facing west.

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Photo 8. View from the northern end of Test Trench 2, facing southeast


Photo 9. View from the southern end of Test Trench 2, facing northwest.


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Photo 10. View of charcoal in the east wall of Test Trench 2, facing northeast..

Photo 11. View of macrofossil leaf litter from the southeast corner of Test Trench 2, facing northeast.

Photo 12. West wall profile of Units 1-3, facing west.


Photo 13. East wall profile of Units 4-6, facing east.

Photo 14. West wall profile of Units 7 and 8, facing west.


Photo 15. East wall profile of Units 9 and 10, facing east.


Photo 16. North wall profile of Units 12 and 14, facing north.

Photo 17. South wall profile of Units 11 and 13, facing south.


Photo 18. View of the excavation of Unit 15, facing southeast.

Photo 19. North wall profile of Unit 15, facing north.


Photo 20. View from the southern end of the mechanized scraping area, facing southeast.

Photo 21. View from the southern end of the mechanized scraping area, facing west.

Photo 22. View of mechanized scraping area from the access road in the northern part of the site, facing south.

Photo 23. View from the northern end of the mechanized scraping area, facing east.

Photo 24. View of mechanized scraping area from the access road in the northern part of the site, facing west.

Photo 25. Plan view of Feature 1, facing west.


Photo 26. Plan view of Feature 2, facing south.

Photo 27. View of the excavation of Feature 3, which was later determined to be a tree tip, facing southeast.

Photo 28. View of the excavation of non cultural Feature 3.

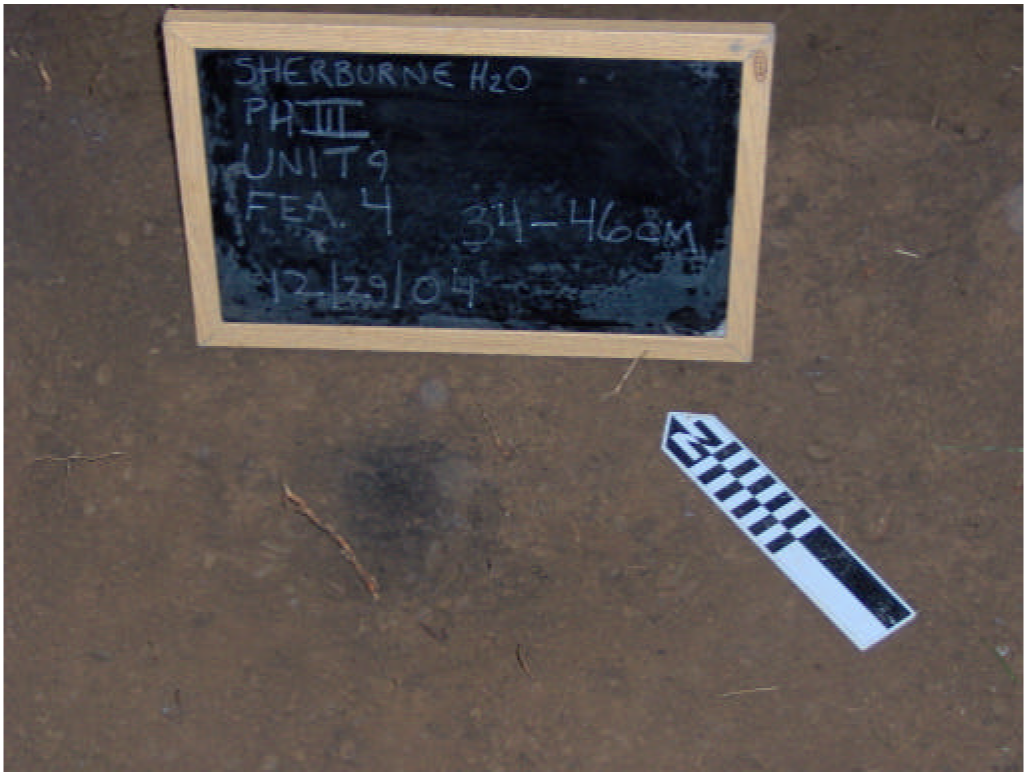

Photo 29. Plan view of Feature 4, facing northeast.

Photo 30. Plan view of Feature 5, facing south .


Photo 31. Plan view of Feature 6, facing south.


Photo 32. Plan view of Feature 7, facing south.

Photo 33. Plan view of Feature 8, facing north.

Photo 34. View of chert cores recovered from the Rogers Prehistoric Site.

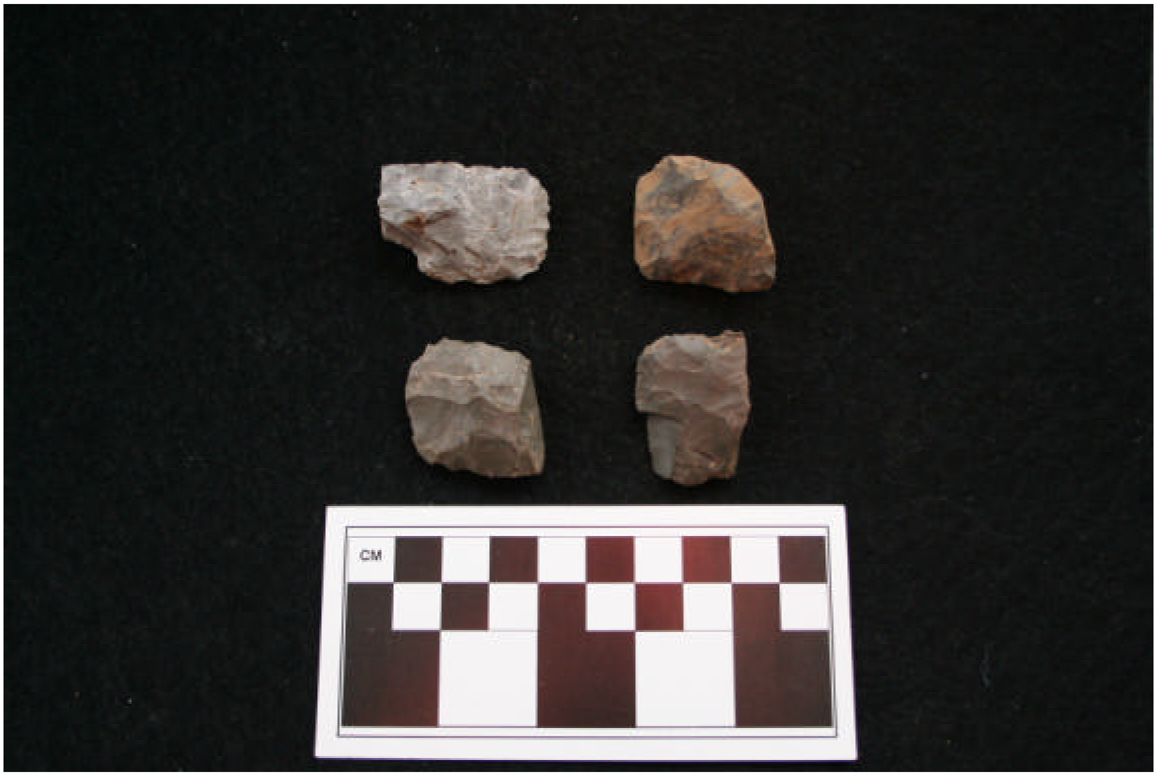

Photo 35. View of bifaces recovered from the Rogers Prehistoric Site.

Photo 36. View of knife and projectile points recovered from the Rogers Prehistoric Site.

Photo 37. View of drill fragments recovered from the Rogers Prehistoric Site.

Photo 38. View of netsinker recovered from the Rogers Prehistoric Site.

Photo 39. View of hammerstone recovered from the Rogers Prehistoric Site.

Photo 40. View of abraider recovered from the Rogers Prehistoric Site.

Photo 41. View of the single fragment of pottery recovered from the Rogers Prehistoric Site.

Appendix C.

Unit Summaries

Appendix C.

Unit Summaries

Unit	Level	Depth (cm)	Soil Description	Cultural Material	Comments	Date	Excavators
1	1	0-23	10YR 3/2 very dark grayish brown sandy silt with gravel	no cultural material	sod cap removal	12/13/04	DM/RD/MJ
	2	23-34	10YR 3/2 very dark grayish brown sandy silt with gravel	flakes (50), possible biface/drill, pipe bowl fragment (kaolin)	first level of undisturbed soil	12/13/04	DM/RD/MJ
	3	32-40	10YR 3/2 very dark grayish brown sandy silt with gravel	flakes (50), 1 biface fragment	level stopped at soil change	12/13/04	DM/RD/MJ
	4	40-52	10YR 3/3 dark brown silty loam with gravel	flakes (2)	artifacts found in transition, gravel density increasing	12/13/04	DM/RD/MJ
	5	52-63	10YR 3/3 dark brown silty loam with gravel	no cultural material	first level of B horizon	12/13/04	DM
	6	63-67	10YR 3/3 dark brown silty loam with gravel	no cultural material	stopped at soil change	12/13/04	DM/RD/MJ
	7	67-79	10YR 3/3 dark brown silty loam with gravel	no cultural material	second sterile level, possible buried A horizon	12/13/04	DM

Unit	Level	Depth (cm)	Soil Description	Cultural Material	Comments	Date	Excavators
	8	75-87	10YR 3/3 dark brown silty sand	no cultural material	very loose gravely soil	12/17/04	DM/RD
	9	87-96	10YR 3/3 dark brown silty sand with gravel	no cultural material	end of unit, 3 sterile levels	12/17/04	DM/RD

Unit	Level	Depth (cm)	Soil Description	Cultural Material	Comments	Date	Excavators
2	1	0-29	10YR 3/2 very dark grayish brown silty loam with gravel	no cultural material	sod cap and overburden from well	12/13/04	DM/RD/MJ
	2	29-41	10YR 3/2 very dark grayish brown sandy silt with gravel	core fragment, flakes (40-50) pottery, possible bone fragments, possible small biface base fragment	first level of undisturbed soil	12/14/04	MJ
	3	41-50	7.5YR 4/3 brown silty sand & 10YR 3/3 dark brown silty loam (stain), with large amount of decaying mudstone in East part	flakes (~5), shatter (~5)	dark stain noted in Eastern part of unit, will begin excavation in Unit 3 to further examine possible feature	12/14/04	DM/RD/MJ
	4	50-60	7.5YR 4/3 brown silty sand & 10YR 3/3 dark brown silty loam	flakes (~15), shatter, FCR	mottled soil	12/15/04	MJ/BB
	5	60-77	10YR 3/3 dark brown sandy silt & 7.5YR 4/3 brown silty sand	flakes (5)	mottled soil, revealing 10YR 3/3 dark brown gravel with sandy silt	12/15/04	MJ/BB

Unit	Level	Depth (cm)	Soil Description	Cultural Material	Comments	Date	Excavators
	6	77-86	gravel with 10YR 3/3 dark brown silty sand	no cultural material	very loose gravel	12/15/04	RD/MJ/RD
	7	86-96	10YR 3/3 dark brown silty sand with well rounded loose gravel	no cultural material	small pockets of 7.5YR 4/6 sandy gravel still extends in Northeastern corner of unit	12/17/04	DM/RD
	8	96-111	10YR 4/1 dark gray sandy gravel, Feature # 2 is a 10YR 3/3 dark brown sandy silt with 10YR 3/1 very dark gray soil stains	no cultural material	Level 8 excavated while leaving Feature #2	12/21/04	MJ

Unit	Level	Depth (cm)	Soil Description	Cultural Material	Comments	Date	Excavators
3	1	0-29	10YR 3/2 very dark grayish brown sandy silt with gravel	flakes (~5), possible plummet	sod cap and overburden from well	12/14/04	DM/RD/MJ
	2	29-40	10YR 3/2 very dark grayish brown sandy silt with gravel	flakes (40-50), shatter	level was stopped on soil change, found charcoal stain feature at base of level in Southwest corner (Feature #1), plan view drawn, photo taken	12/14/04	DM/RD/MJ
	3	40-51	10YR 3/2 very dark grayish brown silty loam, 7.5YR 4/3 brown sandy silt	flakes (~20), point	level around feature taken down. Will bisect feature next.	12/14/04	DM/RD/MJ
	4	51-57	7.5YR 4/3 brown sandy silt with	flakes (~5), core	top of stratum, frozen	12/15/04	MJ/BB

			gravel	fragments, possible Form			
	5	57-70	7.5YR 4/6 strong brown sandy silt with gravel	shatter (3)		12/16/04	MJ/BB
	6	70-80	7.5YR 4/6 strong brown sandy silt with gravel mottled with 10YR 3/3 dark brown gravel with sandy silt	no cultural material	bottom of mottled level revealed a stratum of 10YR 3/3 dark brown gravel with sandy silt	12/16/04	MJ/BB
	7	80-87	7.5YR 4/6 strong brown sandy silt with gravel mottled with 10YR 3/3 dark brown gravel with sandy silt	no cultural material	layer was stopped due to soil change	12/17/04	MJ/BB
	8	87-95	10YR 3/3 dark brown sandy silt with gravel, very loose gravel layer	no cultural material	base of excavation. Digging was stopped due to 3 sterile layers. Floor was leveled off to 95 cm. 80 cm below ground surface	12/17/04	MJ/BB

Unit	Level	Depth (cm)	Soil Description	Cultural Material	Comments	Date	Excavators
4	1	0-27	10YR 3/2 very dark grayish brown sandy silt with gravel	flakes, riveted metal fragment	sod cap & well tailings overburden removed, level taken 10 cm down	12/14/04	DM/RD/MJ

	2	27-40	10YR 3/2 very dark grayish brown sandy silt with gravel	wire nail (1), flakes (30+), core fragment (1)	wire nail found in first screening during upper layer transition to undisturbed soil	12/15/04	DM/RD/MJ
	3	40-50	10YR 3/2 very dark grayish brown sandy silt with gravel	flakes (10+), possible net sinker	artifacts found in first couple of shovelfuls	12/15/04	MJ/BB
	4	50-66	10YR 3/2 very dark grayish brown sandy silt with gravel in Southwest corner extending to Southeast corner, and loose 10YR 3/2 very dark grayish brown sandy silt with gravel in Northern half	no cultural material	possible disturbed loose gravel at base of level	12/15/04	MJ/BB
	5	66-76	10YR 3/2 very dark grayish brown silty sand with gravel	no cultural material	very loose gravel with 10YR 3/2 very dark grayish brown silty sand	12/15/04	MJ/BB
	6	76-87	gravel with 10YR 3/3 dark brown silty sand	no cultural material	very loose gravel	12/17/04	RD/DM
	7	87-98	gravel with 10YR 3/3 dark brown silty sand	no cultural material	end of unit, 3 sterile levels	12/17/04	RD/DM

Unit	Level	Depth (cm)	Soil Description	Cultural Material	Comments	Date	Excavators
5	1	0-25	sod and 10YR 3/2 very dark grayish brown silty loam	flakes (~20+), window glass (1 fragment)		38336	12/15/04

2	25-39	10YR 3/2 very dark grayish brown sandy silt	flakes (40), FCR, 1 PC bone	on top of soil change	12/15/04	DM/RD
3	39-50	7.5YR 4/6 strong brown silty sand	flakes (~15), 2 FCR		12/16/04	DM/RD
4	50-59	10YR 4/6 dark yellowish brown silty sand with gravel	flakes (10-15)	no staining or mottling in level	12/16/04	DM/RD
5	59-70	10YR 4/6 dark yellowish brown silty sand with gravel		pottery flakes (2), biface fragment (1)	12/16/04	DM/RD
6	70-78	7.5YR 4/6 strong brown sandy silt with gravel mottled with 10YR 3/3 dark brown gravel with sandy silt gravel	flakes (10-15), shatter	bottom of level is mottled as is level 6	12/16/04	MJ/BB
7	78-85	7.5YR 4/6 strong brown sandy silt with gravel	flakes (2)	layer was stopped at soil change, from 7.5YR 4/6 strong brown sandy silt with gravel to 10YR 3/2 very dark grayish brown sandy silt	12/17/04	MJ/BB
8	85-95	10YR 3/2 very dark grayish brown sandy silt with gravel	flakes (5), shatter (1),	possible pottery fragments. (3)	38338	12/17/04
9	95-115	10YR 3/3 dark brown sand with loose gravel	no cultural material		12/17/04	MJ/BB
10	115-120	10YR 3/3 dark brown sand with loose gravel mottled with 10YR	charcoal, Feature #3	charcoal taken down to depth, samples to be carbon dated	12/17/04	DM/RD/MJ/B B

3/1 very dark gray sandy silt with gravel

Unit	Level	Depth (cm)	Soil Description	Cultural Material	Comments	Date	Excavators
6	1	0-27	10YR 3/2 very dark grayish brown sandy silt	FCR (1-3), flakes (15-20)	sod removed, 10 cm level excavated	12/15/04	DM/RD
	2	27-37	10YR 3/2 very dark grayish brown silty loam with gravel	possible FCR (1), flakes (15-20)	stopped just above soil change	12/15/04	DM/RD
	3	37-49	7.5YR 4/3 brown sandy silt	flakes (30-40), point tip (1), FCR (3)		38336	12/15/04
	4	49-64	7.5YR 4/6 strong brown silty sand mottled with 10YR 3/2 very dark grayish brown silty sand with gravel	flakes (4), biface fragment (1), shatter (~5)	most artifacts derived from upper level	12/16/04	DM/RD
	5	64-71	7.5YR 4/6 strong brown silty sand mottled with 10YR 3/2 very dark grayish brown silty sand with gravel	flakes (2), shatter (1)		12/17/04	MJ/BB
	6	71-80	10YR 3/3 dark brown silty sand with gravel	no cultural material	very loose gravel with 10YR 3/3 dark brown sand	12/17/04	MJ/BB
	7	80-95	10YR 3/3 dark brown silty sand with gravel	no cultural material	very loose gravel with 10YR 3/3 dark brown sand. This level served as base of	12/17/04	MJ/BB

excavation 80 cm below ground surface. soil is sterile, dug 20 cm through sterile soil

Unit	Level	Depth (cm)	Soil Description	Cultural Material	Comments	Date	Excavators
7	1	0-15	10YR 3/2 very dark grayish brown sandy silt	flakes (30+)		12/21/04	DM/RD/BB
	2	15-25	10YR 3/2 very dark grayish brown sandy silt	flakes (60+)		12/21/04	RD/BB
	3	25-31	10YR 3/3 dark brown silty sand with gravel mottled with 7.5YR 4/3 brown sandy silt	flakes (~40), FCR (~5)	level stopped at beginning of soil change	12/28/04	RD/BB
	4	31-40	7.5YR 4/6 strong brown sandy silt, with staining along South wall	flakes (~20), charcoal (discarded)	staining (10YR 3/1) along South wall, Feature #5, A-A1 Feature #5 bisection line	12/29/04	RD/BB
	5	40-52	7.5YR 4/3 brown sandy silt	no cultural material	Feature #5 examined	12/29/04	RD/BB
	6	52-61	7.5YR 4/6 strong brown sandy silt with gravel, taken down to 10YR 3/3 dark brown gravel with sand	no cultural material	unit layer was stopped on soil change, from 7.5YR 4/6 strong brown sandy silt to 10YR 3/3 dark brown gravel with sand	12/29/04	MJ/DM
	7	61-76	10YR 3/3 dark brown sand with gravel	no cultural material		12/30/04	RD/BB

	8	76-90	10YR 3/3 dark brown loose gravel and sand	no cultural material		12/30/04	RD/BB

Unit	Level	Depth (cm)	Soil Description	Cultural Material	Comments	Date	Excavators
8	1	0-15	10YR 3/2 very dark grayish brown sandy silt	flakes (~40), drill tip (1)		12/21/04	DM/RD/MJ/BB
	2	15-23	10YR 3/2 very dark grayish brown sandy silt	flakes (50+), shatter	heavy root activity	12/22/04	MJ/RD
	3	23-30	10YR 3/3 dark brown sandy silt, beginning to mottle to 7.5YR 4/3 brown sandy silt	P.P. (2), flakes (70+), FCR (~5)	excavation stopped at beginning of soil change, 2 P.P.S. recovered in level & mapped in place. Some FCR, no charcoal	12/28/04	MJ/DM
	4	30-40	7.5YR 4/3 brown sandy silt with small diffuse 10YR 3/3 dark brown sandy silt mottling	flakes (50+), FCR (2?), shatter (5-10)	bottom of level solid 7.5YR 4/3 brown sandy silt with rounded gravel	12/29/04	MJ/DM
	5	40-50	7.5YR 4/3 brown sandy silt with gravel	flakes (2)	beginning to mottle to 10YR 3/3 dark brown sandy silt with loose gravel. Will proceed until sterile (20 cm)	12/29/04	MJ/DM
	6	50-60	10YR 3/3 dark brown silty sand with loose gravel	no cultural material	soil fully changed to 10YR 3/3 dark brown silty sand	12/29/04	MJ/DM

Unit	Level	Depth (cm)	Soil Description	Cultural Material	Comments	Date	Excavators
	7	60-76	10YR 3/3 dark brown sand with gravel	no cultural material		12/30/04	RD/RD
	8	76-89	10YR 3/3 dark brown sand with gravel	no cultural material		12/30/04	RD/RD

Unit	Level	Depth (cm)	Soil Description	Cultural Material	Comments	Date	Excavators
9	1	0-15	10YR 3/3 dark brown sandy silt	FCR, flakes (~20)	sod cap removed	12/27/04	RD/BB
	2	15-20	10YR 3/3 dark brown sandy silt	FCR (1), flakes (60+)	floor was leveled off to depth of units 7 & 8	12/28/04	RD/BB
	3	20-31	10YR 3/3 dark brown sandy silt	flakes (50+), glass, charcoal	excavation, stopped due to soil change, isolated flecks of charcoal	12/29/04	RD/BB
	4	31-40	10YR 3/3 dark brown sandy silt changing to 7.5YR 4/3 brown sandy silt	flakes (40+)	Feature #4, Circular stain approximately 15 cm diameter, 12 cm deep	12/29/04	RD/BB
	5	40-50	7.5YR 4/3 brown sandy silt mottled with 10YR 3/3 dark brown sandy silt	no cultural material		12/29/04	RD/BB
	6	50-63	10YR 3/3 dark brown silty sand with gravel	no cultural material		12/29/04	RD/BB

	7	63-75	10YR 3/3 dark brown sand with gravel	no cultural material		12/30/04	RD/BB
	8	75-85	10YR 3/3 dark brown sand with gravel	no cultural material		12/30/04	RD/BB

Unit	**Level**	**Depth (cm)**	**Soil Description**	**Cultural Material**	**Comments**	Date	Excavators
10	1	0-15	10YR 3/3 dark brown silty sand	flakes (~20), FCR (1),	possible pottery fragment (1)	38348	12/27/04
	2	15-20	10YR 3/3 dark brown sandy silt	flakes (100+), FCR (5), shatter, point (1)	heavy root mass in Northeastern corner. Large density of artifacts found. Unit was leveled off to previously excavated Unit 7 & 8	12/28/04	DM/MJ
	3	20-30	10YR 3/3 dark brown sandy silt	flakes (116), FCR (2)	excavation stopped at beginning of soil change to 7.5YR 4/3 brown sandy silt	12/28/04	DM/MJ
	4	30-41	7.5YR 4/3 brown sandy silt	flakes (~15)	artifacts have seriously declined in layer. Soil change was brought down 10 cm. Two small tap roots in Northeastern section of unit	12/29/04	DM/MJ
	5	41-50	7.5YR 4/3 brown sandy silt with gravel	shatter (3?)	soil began to change from sandy silt to a gravely sandy	12/29/04	DM/MJ

				silt. Artifacts dropped off to 3 questionable shatter fragments		
6	50-63	7.5YR 4/3 brown sandy silt with gravel, stopped at 10YR 3/3 dark brown gravel with sand	no cultural material	Level was stopped on soil change of a 10YR 3/3 dark brown gravel with sand. It appears that the 7.5YR 4/3 brown sandy silt with gravel only exists in the Southwestern corner & will be excavated separately. (See diagram)	12/29/04	DM/MJ
7	63-75	7.5YR 4/3 brown sandy silt with gravel & 10YR 3/3 dark brown gravel with sand	no cultural material	Both soils were taken down separately, screened separately in 10 cm levels. The 7.5YR 4/3 brown sandy silt with gravel layer is a continuation from Level 5, and it continues into Unit to the South (See Unit 9 notes)	12/30/04	DM/MJ
8	75-91	10YR 3/3 dark brown gravel with sand & 7.5YR 4/3 brown sandy silt with gravel	no cultural material	Both soils were excavated and screened separately in 10 cm levels. The 7.5YR 4/3 brown sandy silt with gravel layer is a continuation from Level 5 and continues slightly into Unit 9 to the South	12/30/04	DM/MJ

Unit	Level	Depth (cm)	Soil Description	Cultural Material	Comments	Date	Excavators
11	1	0-15	10YR 3/2 very dark grayish brown silty loam	flakes (2), FCR (2)	heavy root activity throughout layer, Western half of unit (approximately 15 cm) is frozen	12/31/04	DM/MJ
	2	15-25	10YR 3/2 very dark grayish brown silty loam	flakes (40)		12/31/04	DM/MJ
	3	25-34	10YR 3/2 very dark grayish brown silty loam	flakes (31+), shatter (2-3), FCR (2-3)	stopped on top of soil change	12/31/04	DM/MJ
	4	34-41	mixed 10YR 3/3 dark brown sandy silt with 7.5YR 4/3 brown sandy silt	flakes (~5)		12/31/04	RM/DM/MJ
	5	41-55	7.5YR 4/3 brown sandy silt with gravel	flakes (~5)	start of transition to 10YR 3/3 dark brown sandy silt with gravel	1/3/05	DM/MJ
	6	55-65	10YR 3/2 very dark grayish brown gravel with silty sand	no cultural material		1/3/05	DM/MJ
	7	65-75	10YR 3/2 very dark grayish brown gravel with silty sand	no cultural material		1/3/05	DM/MJ
	8	75-85	10YR 3/2 very dark grayish brown gravel with silty sand	no cultural material	last level	1/3/05	DM/MJ

Unit	Level	Depth (cm)	Soil Description	Cultural Material	Comments	Date	Excavators
12	1	0-15	10YR 3/2 very dark grayish brown silty loam	flakes (6). FCR (1)	frozen ground, in pine trees	12/31/04	RD/BB
	2	15-25	10YR 3/2 very dark grayish brown silty loam	flakes (30+)		12/31/04	RD/BB
	3	25-33	10YR 3/2 very dark grayish brown silty loam	flakes (20+)	stopped on top of soil change	12/31/04	RD/DM
	4	33-43	mixed 10YR 3/3 dark brown sandy silt with 7.5YR 4/3 brown sandy silt	flakes (~10)		12/31/04	RD/BB
	5	43-55	7.5YR 4/3 brown sandy silt with gravel	no cultural material	transition to 10YR 3/3 dark brown sandy silt with gravel	1/3/05	RD/BB
	6	55-65	10YR 3/2 very dark grayish brown gravel and silty sand	no cultural material		1/3/05	RD/BB
	7	65-75	10YR 3/2 very dark grayish brown gravel with silty sand	no cultural material		1/3/05	RD/BB
	8	75-85	10YR 3/2 very dark grayish brown gravel with silty sand	no cultural material	last level	1/3/05	RD/BB

Unit	Level	Depth (cm)	Soil Description	Cultural Material	Comments	Date	Excavators
13	1	0-15	10YR 3/2 very dark grayish brown silty loam	flakes (~20), glass fragment (1)		38351	12/30/04
	2	15-24	10YR 3/2 very dark grayish brown silty loam with root mass	flakes (~20), FCR (2)		12/30/04	DM/MJ
	3	24-34	10YR 3/2 very dark grayish brown silty loam	biface fragment (1), flakes (50+), shatter (1)	Layer excavation stopped on soil change. Base of Level 3 exposed large cobble activity, at top of Level 4	12/31/04	DM/MJ
	4	34-44	7.5YR 4/3 brown silty sand with cobble	flakes (15), shatter (1)	large cobble throughout layer	12/31/04	DM/MJ
	5	44-57	7.5YR 4/3 brown silty sand with cobble	flake (1)	starting to pick up soil transition, from 7.5YR 4/3 brown silty sand with cobble to a 10YR 3/3 dark brown gravel with sand. 1 flake found on very top of level	1/3/05	DM/MJ
	6	57-68	7.5YR 4/3 brown sandy silt with gravel mottled with 10YR 3/3 dark brown gravel with sand	no cultural material	soil transition layer with increasing 10YR 3/3 dark brown gravel with sand	1/3/05	DM/MJ
	7	68-78	10YR 3/3 dark brown gravel with sand	no cultural material		1/3/05	DM/MJ

	8	78-88	10YR 3/3 dark brown gravel with sand	no cultural material	excavation stopped due to 3 sterile layers	1/3/05	DM/MJ

Unit	Level	Depth (cm)	Soil Description	Cultural Material	Comments	Date	Excavators
14	1	0-16	10YR 3/2 very dark grayish brown silty loam with root mass	flake (1)		12/30/04	DM/MJ
	2	16-25	10YR 3/2 very dark grayish brown silty loam with root mass	flakes (15-20), FCR (1)		12/30/04	DM/MJ
	3	25-32	10YR 3/2 very dark grayish brown silty loam changing to 7.5YR 4/3 brown silty sand with gravel	FCR (1), biface fragment (1), flakes (25+)		38352	12/31/04
	4	32-43	7.5YR 4/3 brown silty sand with gravel	flake (1), shatter (2)		12/31/04	RD/BB
	5	43-55	7.5YR 4/3 brown silty sand with cobble changing to 10YR 3/3 dark brown gravel with sand	flake (1)	flake found near top of layer	1/3/05	RD/BB
	6	55-66	10YR 3/3 dark brown gravel with sand mottled with 7.5YR 4/3 brown silty sand with gravel	no cultural material		1/3/05	RD/BB
	7	66-82	10YR 3/3 dark brown gravel with sand mottled with 7.5YR 4/3	no cultural material		1/3/05	RD/BB

			brown silty sand with gravel				
	8	82-87	10YR 3/3 dark brown sandy silt with gravel	no cultural material		1/3/05	RD/BB

Unit	Level	Depth (cm)	Soil Description	Cultural Material	Comments	Date	Excavators
15	1	0-15	10YR 3/3 dark brown sandy silt	flakes (10+)	sod cap & upper soil removed	1/4/05	MJ/RD/BB
	2	15-25	10YR 3/3 dark brown sandy silt	flakes (100+), fragment of flat clear glass (discarded)		38356	1/4/05
	3	25-30	10YR 3/3 dark brown sandy silt	flakes (75+), shatter (~3), shard of curved green glass (discarded)	level ended at soil change to 7.5YR 4/3 brown sandy silt	1/4/05	MJ/RD/BB
	4	30-45	7.5YR 4/3 brown sand mottled with 10YR 3/3 dark brown sandy silt with gravel	projectile point (1), flakes (15+)	soil remained mottled throughout layer. Largest concentration of 7.5YR 4/3 brown sand in Southwest corner	1/4/05	MJ/RD/BB
	5	45-57	7.5YR 4/3 brown sand mottled with 10YR 3/3 dark brown sandy silt with gravel	no cultural material		1/4/05	MJ/RD/BB
	6	57-73	10YR 3/3 dark brown gravel with	no cultural material		1/4/05	MJ/RD/BB

		sandy silt				
7	73-87	10YR 3/3 dark brown gravel with sandy silt	no cultural material	excavation stopped due to 3 sterile levels, 80 cm below datum	1/4/05	MJ/RD/BB

Appendix D.

Artifact Catalog

Appendix D.

Artifact Catalog

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.64.1	1	Unit1 L2	1	BPPT	point tip	chert	2.0		0	
A2007.19.64.2	2	Unit1 L2	1	UTIL	utilized flake	chert	1.0	18.6x14.2x3.3	0	transverse, feathered
A2007.19.64.3	3	Unit1 L2	1	UTIL	utilized flake	chert	1.2		0	
A2007.19.64.4	4	Unit1 L2	1	FLK1	flake	chert	0.3	11.6x14.1x2.6	0	transverse, feathered
A2007.19.64.5	5	Unit1 L2	1	UTIL	utilized flake	chert	0.6	0.6x24.1x9.0	0	transverse, feathered
A2007.19.64.6	6	Unit1 L2	14	FLAK	flake fragment	chert	3.3		0	
A2007.19.64.7	7	Unit1 L2	6	SHAT	shatter	chert	5.0		0	
A2007.19.64.7	8	Unit1 L2	1	FCR	FCR	quartzite	187.9		0	
A2007.49.65.1	9	Unit1 L3	1	BIF	biface fragment	chert	3.3		0	
A2007.49.65.2	10	Unit1 L3	1	UTIL	utilized flake	chert	0.5	18.0x13.3x1.7	<50	transverse, feathered
A2007.49.65.3	11	Unit1 L3	1	FLK1	flake	chert	0.8	20.3x12.3x4.4	<50	
A2007.49.65.4	12	Unit1 L3	1	FLK1	flake	chert	0.3	10.9x18.1x2.2	<50	
A2007.49.65.5	13	Unit1 L3	1	FLK1	flake	chert	1.1	9.0x10.8x1.8	100	
A2007.49.65.6	14	Unit1 L3	1	FLK1	flake	chert	0.2	11.5x11.7x0.9	0	
A2007.49.65.7	15	Unit1 L3	1	FLK1	flake	chert	0.1	10.5x8.6x1.0	0	
A2007.49.65.8	16	Unit1 L3	1	FLAK	flake fragment	chert	0.2		0	thermally altered
A2007.49.65.9	17	Unit1 L3	24	FLAK	flake fragment	chert	3.9		0	

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.49.65.10	18	Unit1 L3	2	SHAT	shatter	chert	3.8		0	
A2007.49.65.11	19	Unit1 L3	3	FCR	FCR	chert	15.2		0	
A2007.19.66.1	20	Unit1 L4	1	FLK1	flake	chert	0.4	10.8x18.4x4.4	<50	
A2007.19.66.2	21	Unit1 L4	1	FLK1	flake	chert	0.7	14.5x13.1x3.1	0	
A2007.19.66.3	22	Unit1 L4	1	FLK1	flake	chert	0.2	10.3x9.8x1.4	0	
A2007.19.66.4	23	Unit1 L4	8	FLAK	flake fragment	chert	3.9		0	
A2007.19.66.5	24	Unit1 L4	1	SHAT	shatter	chert	<0.1		0	
A2007.19.66.6	25	Unit1 L4	1	FCR	FCR	chert	0.8		0	
A2007.19.66.7	26	Unit1 L4	2	FCR	FCR	quartzite	5.8		0	
A2007.19.67.1	27	Unit2 L2	1	UTIL	utilized flake	chert	1.3	18.1x20.2x5.2	0	transverse, feathered
A2007.19.67.2	28	Unit2 L2	1	FLK1	flake	chert	1.5	20.1x24.x3.3	<50	
A2007.19.67.3	29	Unit2 L2	1	FLK1	flake	chert	0.2	18.7x10.1x1.8	0	
A2007.19.67.4	30	Unit2 L2	1	FLK1	flake	chert	<0.1	9.6x8.6x1.5	0	
A2007.19.67.5	31	Unit2 L2	60	FLAK	flake fragment	chert	19.7		0	
A2007.19.67.6	32	Unit2 L2	6	SHAT	shatter	chert	5.8		0	
A2007.19.67.7	33	Unit2 L2	8	FCR	FCR	chert	24.3		0	
A2007.19.67.8	34	Unit2 L2	1	FCR	FCR	quartzite	3.7		0	
A2007.19.68.1	35	Unit2 L3	1	FLK1	flake	chert	0.7	14.8x18.0x3.6	<50	
A2007.19.68.2	36	Unit2 L3	3	FLAK	flake fragment	chert	0.3		0	
A2007.19.68.3	37	Unit2 L3	1	FCR	FCR	chert	2.0		0	
A2007.19.69.1	38	Unit2 L4	1	FLK1	flake	chert	5.5	40.4x19.1x7.2	<50	
A2007.19.69.2	39	Unit2 L4	1	FLK1	flake	chert	0.2	14.4x8.6x0.9	0	
A2007.19.69.3	40	Unit2 L4	1	FLK1	flake	chert	<0.1	7.5x5.6x1.1	<50	
A2007.19.69.4	41	Unit2 L4	15	FLAK	flake fragment	chert	3.3		0	
A2007.19.69.5	42	Unit2 L4	5	SHAT	shatter	chert	10.9		0	
A2007.19.69.6	43	Unit2 L4	3	FCR	FCR	chert	10.6		0	
A2007.19.69.7	44	Unit2 L4	1	FCR	FCR	quartzite	3.0		0	
A2007.19.70.1	45	Unit2 L5	4	FLAK	flake fragment	chert	2.1		0	
A2007.19.70.2	46	Unit 2 L5	4	BIF	biface fragment	chert	5.8		0	transverse, hinge
A2007.19.71.1	47	Unit2 F.2, N1/2	1	UTIL	utilized flake	chert	0.8	21.0x17.5x2.7	0	transverse, feathered

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.71.2	48	Unit2 F.2,N1/2	1	FLK1	flake	chert	2.2	24.8x34.8x3.3	<50	
A2007.19.71.3	49	Unit2 F.2, N1/2	7	FLAK	flake fragment	chert	2.7		0	
A2007.19.71.4	50	Unit2 F.2, N1/2	2	SHAT	shatter	chert	4.5		0	
A2007.19.71.5	51	Unit2 F.2, N1/2	2	FCR	FCR	quartzite	261.2		0	
A2007.19.71.6	52	Unit2 F.2, S1/2	3	FLAK	flake fragment	chert	1.1		0	
A2007.19.72.1	53	Unit3 L1	1	UTIL	utilized flake	chert	2.7	36.0x28.1x5.2	0	longitudinal./hinge
A2007.19.72.2	54	Unit3 L1	1	UTIL	utilized flake fragment	chert	0.4		0	transverse/hinge
A2007.19.72.3	55	Unit3 L1	1	FLK1	flake	chert	<0.1	10.6x7.8x1.4	0	
A2007.19.72.4	56	Unit3 L1	9	FLAK	flake fragment	chert	1.7		0	
A2007.19.72.5	57	Unit3 L1	1	UCN	nail fragment	cut	2.9		0	
A2007.19.73.1	58	Unit3 L2	1	FLAK	flake fragment	chert	0.4		<50	edge damage
A2007.19.73.2	59	Unit3 L2	1	FLK1	flake	chert	1.2	27.4x16.4x1.7	0	
A2007.19.73.3	60	Unit3 L2	1	FLK1	flake	chert	1.1	18.8x13.2x3.7	<50	
A2007.19.73.4	61	Unit3 L2	1	FLK1	flake	chert	<0.1	9.5x9.2x1.3	0	
A2007.19.73.5	62	Unit3 L2	52	FLAK	flake fragment	chert	17.1		0	
A2007.19.73.6	63	Unit3 L2	8	SHAT	shatter	chert	6.6		0	
A2007.19.73.7	64	Unit3 L2	1	OTDB	chert nodule	H. gray	14.8		0	unmodified
A2007.19.74.1	65	Unit3 L2 F1	1	FLK1	flake	chert	0.5	17.7x14.8x2.0	0	
A2007.19.74.2	66	Unit3 L2 F1	1	FLK1	flake	chert	1.6	35.9x10.6x3.9	<50	
A2007.19.74.3	67	Unit3 L2 F1	1	FLK1	flake	chert	0.5	15.6x16.3x2.0	0	
A2007.19.74.4	68	Unit3 L2 F1	1	FLK1	flake	chert	0.2	13.3x12.4x1.2	0	
A2007.19.74.5	69	Unit3 L2 F1	12	FLK1	flake	chert	3.7		0	thermally altered
A2007.19.74.6	70	Unit3 L2 F1	2	SHAT	shatter	chert	2.7		0	thermally altered

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.75.1	71	Unit3 L3	1	BIF	biface fragment	chert	5.4		0	
A2007.19.75.2	72	Unit3 L3	9	FLAK	flake fragment	chert	2.4		0	
A2007.19.75.3	73	Unit3 L3	1	FLAK	flake fragment	argellite	1.9		0	
A2007.19.75.4	74	Unit3 L3	3	SHAT	shatter	chert	2.1		0	
A2007.19.75.5	75	Unit3 L3	1	OTDB	chert nodule	gray/brown	2.5		0	unmodified
A2007.19.76.1	76	Unit3 L4	2	FLAK	flake fragment	chert	0.4		>50	
A2007.19.76.2	77	Unit3 L4	1	CORE	core fragment	chert	51.5		0	
A2007.19.76.3	78	Unit3 L4	7	SHAT	shatter	H. gray chert	23.2		0	
A2007.19.76.4	79	Unit3 L4	1	FLAK	flake fragment	chert	1.0		0	
A2007.19.77.1	80	Unit3 L5	2	FLAK	flake fragment	chert	0.5		0	
A2007.19.77.2	81	Unit3 L5	3	SHAT	shatter	chert	3.4		0	
A2007.19.78.1	82	Unit4 L1	26	FLAK	flake fragment	chert	0.2		0	
A2007.19.78.2	83	Unit4 L1	1	FLK1	flake	chert	9.5		0	
A2007.19.78.3	84	Unit4 L1	4	FLAK	flake fragment	argellite	0.6		0	
A2007.19.78.4	85	Unit4 L1	4	SHAT	shatter	chert	4.6		0	
A2007.19.78.5	86	Unit4 L1	1	FCR	FCR	quartzite	1.5		0	
A2007.19.78.6	87	Unit4 L1	1	BRKT	iron bracket	cast, w/ 2 cut nails	48.0		0	
A2007.19.79.1	88	Unit4 L2	1	FLK1	flake	chert	0.2	14.8x5.3x0.3	0	
A2007.19.79.2	89	Unit4 L2	1	FLK1	flake	chert	0.2	13.7x10.3x1.3	0	
A2007.19.79.3	90	Unit4 L2	1	FLK1	flake	chert	<0.1	8.5x6.5x1.1	0	
A2007.19.79.4	91	Unit4 L2	28	FLAK	flake fragment	chert	5.0		0	
A2007.19.79.5	92	Unit4 L2	1	CORE	core	chert	24.8		0	
A2007.19.79.6	93	Unit4 L2	7	SHAT	shatter	chert	6.4		0	
A2007.19.79.7	94	Unit4 L2	1	FCR	FCR	argellite	2.5		0	
A2007.19.79.8	95	Unit4 L2	1	OTDB	chert nodule	dark gray	9.9		0	unmodified
A2007.19.79.9	96	Unit4 L2	1	CWN	nail	wire	5.7	2.5 in.	0	1875+

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.80.1	97	Unit4 L3	1	NETS	net sinker	quartzite	43.4	80.9x43.3x6.9	100	
A2007.19.80.2	98	Unit4 L3	1	BIF	biface fragment	chert	2.0		0	
A2007.19.80.3	99	Unit4 L3	5	OTDB	chert fragment	chert	2.7		0	
A2007.19.80.4	100	Unit4 L3	1	SHAT	shatter	chert	0.9		0	
A2007.19.81.1	101	Unit5 L1	1	FLK1	flake	chert	0.7	10.5x19.2x3.2	<50	
A2007.19.81.2	102	Unit5 L1	1	FLK1	flake	chert	<0.1	11.2x11.8x.08	0	
A2007.19.81.3	103	Unit5 L1	38	FLAK	flake fragment	chert	8.1		0	
A2007.19.81.4	104	Unit5 L1	3	SHAT	shatter	chert	2.8		0	
A2007.19.81.5	105	Unit5 L1	1	FCR	FCR	chert	1.4		0	
A2007.19.81.6	106	Unit5 L1	1	AFG	glass	aqua, flat	0.5		0	
A2007.19.82.1	107	Unit5 L2	1	FLK1	flake	chert	0.2	7.1x15.3x2.0	<50	
A2007.19.82.2	108	Unit5 L2	1	FLK1	flake	chert	0.2	9.7x14.1x2.1	0	
A2007.19.82.3	109	Unit5 L2	1	FLK1	flake	chert	0.1	14.4x10.2x1.8	0	
A2007.19.82.4	110	Unit5 L2	1	FLK1	flake	chert	0.1	10.5x10.8x1.2	0	
A2007.19.82.5	111	Unit5 L2	1	FLK1	flake	chert	<0.1	10.3x11.1x.0.7	0	
A2007.19.82.6	112	Unit5 L2	1	FLK1	flake	chert	0.1	11.2x11.7x1.2	0	
A2007.19.82.7	113	Unit5 L2	1	FLK1	flake	chert	<0.1	8.9x6.7x0.8	0	
A2007.19.82.8	114	Unit5 L2	26	FLAK	flake fragment	chert	6.9		0	
A2007.19.82.9	115	Unit5 L2	1	FLAK	flake fragment	argellite	<0.1		0	
A2007.19.82.10	116	Unit5 L2	1	SHAT	shatter	chert	7.5		0	
A2007.19.82.11	117	Unit5 L2	1	SHAT	shatter	argellite	0.7		0	
A2007.19.82.12	118	Unit5 L2	1	FCR	FCR	quartzite	138.1		0	
A2007.19.82.13	119	Unit5 L2	1	OTDB	chert nodule		21.3		0	unmodified
A2007.19.82.14	120	Unit5 L2	1	CFG	glass	clear, flat	2.3		0	
A2007.19.82.15	121	Unit5 L2	1	UDB	bone	fragment	20.1		0	
A2007.19.83.1	122	Unit5 L3	1	FLK1	flake	chert	3.4	31.1x31.7x2.8	0	
A2007.19.83.2	123	Unit5 L3	1	FLK1	flake	chert	2.7	27.4x22.0x4.9	0	
A2007.19.83.3	124	Unit5 L3	1	FLK1	flake	chert	1.9	19.4x25.8x4.4	<50	
A2007.19.83.4	125	Unit5 L3	9	FLAK	flake fragment	chert	4.9		0	
A2007.19.83.5	126	Unit5 L3	2	FCR	FCR	quartzite	40.5		0	

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.84.1	127	Unit5 L4	1	FLK1	flake	chert	0.4	12.0x17.8x3.0	<50	
A2007.19.84.2	128	Unit5 L4	1	FLK1	flake	chert	0.2	14.3x12.8x1.4	0	
A2007.19.84.3	129	Unit5 L4	1	FLK1	flake	chert	0.2	19.0x11.5x1.2	<50	
A2007.19.84.4	130	Unit5 L4	1	FLAK	flake fragment	chert	3.4		0	
A2007.19.84.5	131	Unit5 L4	2	SHAT	shatter	chert	0.8		0	
A2007.19.85.0	132	Unit5 L5	1	DPOB	pottery	fragment	3.4		0	grit tempered, cord impressed
A2007.19.85.1	133	Unit5 L5	1	BIF	biface fragment	chert	1.2		0	
A2007.19.85.2	134	Unit5 L5	1	FLK1	flake	chert	0.6	13.1x19.9x4.2	0	
A2007.19.85.3	135	Unit5 L5	1	FLK1	flake	chert	0.5	21.2x9.1x2.7	0	thermally altered
A2007.19.85.4	136	Unit5 L5	1	FLAK	flake fragment	chert	0.1		0	
A2007.19.85.5	137	Unit5 L5	1	FLAK	flake fragment	argellite	<0.1		0	
A2007.19.85.6	138	Unit5 L5	2	SHAT	shatter	chert	9.5		0	
A2007.19.85.7	139	Unit5 L5	1	FCR	FCR	chert	2.3		0	
A2007.19.85.8	140	Unit5 L5	1	OCH	charcoal	sample	0.9		0	too small for C-14
A2007.19.86.1	141	Unit5 L6	1	FLK1	flake	chert	<0.1	6.8x6.2x0.7	0	
A2007.19.86.2	142	Unit5 L6	2	FLAK	flake fragment	chert	0.6		0	
A2007.19.86.3	143	Unit5 L6	4	SHAT	shatter	chert	5.4		0	
A2007.19.86.4	144	Unit5 L6	1	FLK1	flake	chert	2.2	38.8x25.0x3.6	<50	
A2007.19.86.5	145	Unit5 L6	1	FLAK	flake fragment	chert	0.1		0	
A2007.19.87.1	146	Unit5 L8	1	BIF	biface fragment	chert	1.1		0	
A2007.19.87.2	147	Unit5 L8	1	FLK1	flake	chert	1.3	30.0x13.3x2.0	0	
A2007.19.87.3	148	Unit5 L8	1	FLK1	flake	chert	0.4	10.3x17.6x3.2	<50	
A2007.19.87.4	149	Unit5 L8	1	FLK1	flake	chert	<0.1	8.5x12.1x1.2	0	
A2007.19.87.5	150	Unit5 L8	2	FLAK	flake fragment	chert	0.9		0	
A2007.19.87.6	151	Unit5 L8	1	FCR	FCR	quartzite	21.6		0	
A2007.19.88.1	152	Unit6 L1	1	FLK1	flake	chert	0.9	12.5x22.3x4.3	0	

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.88.2	153	Unit6 L1	11	FLAK	flake fragment	chert	4.9		0	
A2007.19.88.3	154	Unit6 L1	1	SHAT	shatter	chert	0.9		0	
A2007.19.88.4	155	Unit6 L1	4	FCR	FCR	quartzite	480.5		0	
A2007.19.89.1	156	Unit6 L2	1	CORE	core	chert	6.8	31.3x31.6x8.0	<50	transverse/feathered retouched
A2007.19.89.2	157	Unit6 L2	1	FLK1	flake	chert	2.3	22.9x25.1x2.9	<50	
A2007.19.89.3	158	Unit6 L2	1	FLK1	flake	chert	1.1	21.1x18.7x2.1	0	
A2007.19.89.4	159	Unit6 L2	1	FLK1	flake	chert	0.3	6.3x11.9x3.2	0	
A2007.19.89.5	160	Unit6 L2	1	FLK1	flake	chert	<0.1	10.2x9.0x1.1	0	
A2007.19.89.6	161	Unit6 L2	1	FLAK	flake fragment	chert	3.5		0	
A2007.19.89.7	162	Unit6 L2	4	SHAT	shatter	chert	1.8		0	
A2007.19.90.1	163	Unit6 L3	1	DRIL	drill fragment	chert	2.1		0	
A2007.19.90.2	164	Unit6 L3	1	CORE	core utilized	chert	25.8	48.9x38.9x11.4	>50	transverse, feathered
A2007.19.90.3	165	Unit6 L3	1	FLK1	flake	chert	2.2	25.2x17.1x6.9	>50	
A2007.19.90.4	166	Unit6 L3	1	FLK1	flake	chert	1.7	14.1x23.2x4.3	>50	
A2007.19.90.5	167	Unit6 L3	1	FLK1	flake	chert	1.1	20.8x16.7x3.3	0	
A2007.19.90.6	168	Unit6 L3	1	FLK1	flake	chert	0.3	16.0x11.5x2.7	0	
A2007.19.90.7	169	Unit6 L3	1	FLK1	flake	chert	0.5	14.6x12.9x2.3	0	
A2007.19.90.8	170	Unit6 L3	1	FLK1	flake	chert	0.5	12.2x17.3x2.6	0	
A2007.19.90.9	171	Unit6 L3	1	FLK1	flake	chert	0.4	13.9x13.0x2.3	<50	
A2007.19.90.10	172	Unit6 L3	1	FLK1	flake	chert	0.2	16.1x6.7x2.2	0	
A2007.19.90.11	173	Unit6 L3	1	FLK1	flake	chert	0.2	12.4x7.8x1.6	0	
A2007.19.90.12	174	Unit6 L3	1	FLK1	flake	chert	0.1	8.9x10.5x1.6	0	
A2007.19.90.13	175	Unit6 L3	1	FLK1	flake	chert	0.1	7.8x6.4x1.8	0	
A2007.19.90.14	176	Unit6 L3	1	FLK1	flake	chert	0.1	8.7x5.9x1.8	0	
A2007.19.90.15	177	Unit6 L3	1	FLK1	flake	chert	0.1	9.1x5.8x1.3	0	
A2007.19.90.16	178	Unit6 L3	1	FLK1	flake	chert	0.1	8.8x5.1x0.9	0	
A2007.19.90.17	179	Unit6 L3	46	FLAK	flake fragment	chert	14.2		0	
A2007.19.90.18	180	Unit6 L3	1	SHAT	shatter	chert	24.5		0	
A2007.19.90.19	181	Unit6 L3	1	FCR	FCR	quartzite	77.3		0	

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.90.20	182	Unit6 L3	1	XBK	pipe bowl fragment	ball clay	0.3		0	
A2007.19.90.21	183	Unit6 L3	1	UWN	nail fragment	wrought	1.7		0	
A2007.19.91.1	184	Unit6 L4	1	BIF	biface fragment		8.1		0	
A2007.19.91.2	185	Unit6 L4	1	FCR	FCR	quartzite	1.2		0	
A2007.19.91.3	186	Unit6 L4	5	FLAK	flake fragment	chert	0.8		0	
A2007.19.91.4	187	Unit6 L4	6	SHAT	shatter	chert	56.0		0	
A2007.19.92.1	188	Unit6 L5	3	FLAK	flake fragment	chert	1.0		0	
A2007.19.92.2	189	Unit6 L5	1	SHAT	shatter	chert	2.1		0	
A2007.19.93.1	190	Unit7 L1	1	SCRP	scraper	chert	3.6	28.1x17.8x11.4	0	
A2007.19.93.2	191	Unit7 L1	1	FLK1	flake	chert	1.7	31.2x14.2x4.3	0	
A2007.19.93.3	192	Unit7 L1	1	FLK1	flake	chert	2.0	27.8x16.7x4.6	0	
A2007.19.93.4	193	Unit7 L1	1	FLK1	flake	chert	1.2	21.5x15.2x4.3	0	
A2007.19.93.5	194	Unit7 L1	1	FLK1	flake	argellite	0.1	9.1x7.2x1.3	0	
A2007.19.93.6	195	Unit7 L1	1	FLK1	flake	chert	0.6	16.4x13.3x2.3	0	
A2007.19.93.7	196	Unit7 L1	1	FLK1	flake	chert	0.4	17.9x7.4x3.0	0	
A2007.19.93.8	197	Unit7 L1	1	FLK1	flake	chert	0.2	11.3x7.9x1.3	0	
A2007.19.93.9	198	Unit7 L1	1	FLK1	flake	chert	0.3	17.0x9.1x2.0	0	
A2007.19.93.10	199	Unit7 L1	45	FLAK	flake fragment	chert	15.3		0	
A2007.19.93.11	200	Unit7 L1	6	SHAT	shatter	chert	28.9		0	
A2007.19.93.12	201	Unit7 L1	1	FCR	FCR	quartzite	3.9		0	
A2007.19.94.1	202	Unit7 L2	1	FLK1	flake	chert	0.6	25.7x12.0x2.3	0	
A2007.19.94.2	203	Unit7 L2	1	FLK1	flake	chert	1.8	27.0x16.9x3.7	0	
A2007.19.94.3	204	Unit7 L2	1	FLK1	flake	chert	1.1	23.8x14.7x3.5	0	
A2007.19.94.4	205	Unit7 L2	1	FLK1	flake	chert	1.6	22.0x17.5x4.4	0	
A2007.19.94.5	206	Unit7 L2	1	FLK1	flake	chert	1.0	17.9x16.5x5.5	0	
A2007.19.94.6	207	Unit7 L2	1	FLK1	flake	chert	0.6	21.9x13.0x2.9	0	
A2007.19.94.7	208	Unit7 L2	1	FLK1	flake	chert	0.6	16.1x12.8x4.2	0	
A2007.19.94.8	209	Unit7 L2	1	FLK1	flake	chert	0.4	18.1x9.5x2.3	0	
A2007.19.94.9	210	Unit7 L2	69	FLAK	flake fragment	chert	22.5		0	

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.94.10	211	Unit7 L2	7	SHAT	shatter	chert	27.4		0	
A2007.19.95.1	212	Unit7 L3	1	UTIL	utilized flake	chert	3.1	26.7x26.2x5.8	0	longitudinal, feathered, hinged
A2007.19.95.2	213	Unit7 L3	1	SCRP	scraper	chert	1.3		0	
A2007.19.95.3	214	Unit7 L3	1	FLK1	flake	chert	1.2	0.6x2.7x17.1	0	
A2007.19.95.4	215	Unit7 L3	1	FLK1	flake	chert	0.1	15.3x7.6x1.7	0	
A2007.19.95.5	216	Unit7 L3	1	FLK1	flake	chert	0.4	15.0x11.4x2.8	0	
A2007.19.95.6	217	Unit7 L3	1	FLK1	flake	chert	0.4	14.6x4.2x1.8	0	
A2007.19.95.7	218	Unit7 L3	1	FLK1	flake	chert	0.2	14.6x9.2x1.8	0	
A2007.19.95.8	219	Unit7 L3	1	FLK1	flake	chert	0.2	15.2x9.9x1.6	0	
A2007.19.95.9	220	Unit7 L3	1	FLK1	flake	chert	0.5	17.7x13.5x3.4	0	
A2007.19.95.10	221	Unit7 L3	1	FLK1	flake	chert	0.1	11.9x8.9x2.0	0	
A2007.19.95.11	222	Unit7 L3	1	FLK1	flake	chert	1.4	25.9x19.9x3.5	0	
A2007.19.95.12	223	Unit7 L3	1	FLK1	flake	chert	0.4	23.2x9.9x3.7	0	
A2007.19.95.13	224	Unit7 L3	1	FLK1	flake	chert	0.8	15.1x19.8x7.0	0	
A2007.19.95.14	225	Unit7 L3	1	FLK1	flake	chert	0.4	16.4x10.4x2.8	0	
A2007.19.95.15	226	Unit7 L3	1	FLAK	flake fragment	argellite	0.2		0	
A2007.19.95.16	227	Unit7 L3	43	FLAK	flake fragment	chert	15.3		0	
A2007.19.95.17	228	Unit7 L3	8	SHAT	shatter	chert	8.5		0	
A2007.19.96.1	229	Unit7 L4	1	UTIL	utilized flake	chert	1.1	26.4x13.0x3.7	0	feathered
A2007.19.96.2	230	Unit7 L4	1	FLK1	flake	chert	0.2	18.8x10.7x2.6	0	
A2007.19.96.3	231	Unit7 L4	1	FLK1	flake	chert	0.1	13.3x11.7x2.3	0	
A2007.19.96.4	232	Unit7 L4	10	FLAK	flake fragment	chert	3.5		0	
A2007.19.96.5	233	Unit7 L4	3	SHAT	shatter	chert	1.4		0	
A2007.19.96.6	234	Unit7 L4	3	SHAT	shatter	argellite	2.9		0	
A2007.19.97.1	235	Unit8 L1	1	DRIL	drill fragment	chert	0.5		0	
A2007.19.97.2	236	Unit8 L1	1	FLK1	flake	chert	0.7	22.0x11.3x3.5	0	
A2007.19.97.3	237	Unit8 L1	1	FLK1	flake	chert	0.6	17.7x13.0x2.5	0	
A2007.19.97.4	238	Unit8 L1	1	FLK1	flake	chert	0.8	18.2x16.2x2.7	0	
A2007.19.97.5	239	Unit8 L1	1	FLK1	flake	chert	0.1	1.35x6.0x1.8	0	
A2007.19.97.6	240	Unit8 L1	47	FLAK	flake fragment	chert	12.7		0	

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.97.7	241	Unit8 L1	13	SHAT	shatter	chert	47.8		0	
A2007.19.98.1	242	Unit8 L2	1	UTIL	flake-utilized	chert	1.2	20.2x16.0x4.3	0	
A2007.19.98.2	243	Unit8 L2	1	FLK1	flake	chert	0.8	17.1x19.5x3.7	0	
A2007.19.98.3	244	Unit8 L2	1	FLK1	flake	chert	0.1	13.9x9.9x1.9	0	
A2007.19.98.4	245	Unit8 L2	1	FLK1	flake	chert	0.2	15.0x8.8x2.3	0	
A2007.19.98.5	246	Unit8 L2	1	FLK1	flake	chert	0.1	13.3x8.9x1.9	0	
A2007.19.98.6	247	Unit8 L2	1	FLK1	flake	chert	0.5	16.1x12.1x4.1	0	
A2007.19.98.7	248	Unit8 L2	1	FLK1	flake	chert	0.1	11.3x5.5x1.7	0	
A2007.19.98.8	249	Unit8 L2	92	FLAK	flake fragment	chert	27.3		0	
A2007.19.98.9	250	Unit8 L2	4	FLAK	flake fragment	argellite	0.8		0	
A2007.19.98.10	251	Unit8 L2	21	SHAT	shatter	chert	18.1		0	
A2007.19.99.1	252	Unit8 L3	1	BIF	biface fragment	chert	2.9		0	
A2007.19.99.2	253	Unit8 L3	1	BIF	biface fragment	chert	4.8		0	
A2007.19.99.3	254	Unit8 L3	1	FLK1	flake	chert	1.7	25.0x18.5x5.9	0	
A2007.19.99.4	255	Unit8 L3	1	BIF	biface fragment	chert	1.5	16.8x22.8x4.0	0	
A2007.19.99.5	256	Unit8 L3	1	FLK1	flake	chert	0.4	16.6x12.3x2.1	0	
A2007.19.99.6	257	Unit8 L3	1	FLK1	flake	chert	0.5	17.3x13.0x3.3	0	
A2007.19.99.7	258	Unit8 L3	1	FLK1	flake	chert	0.4	17.5x11.6x2.6	0	
A2007.19.99.8	259	Unit8 L3	81	FLAK	flake fragment	chert	27.2		0	
A2007.19.99.9	260	Unit8 L3	27	SHAT	shatter	chert			0	
A2007.19.99.10	261	Unit8 L3	2	FCR	FCR	quartzite	4850.3		0	
A2007.19.100.1	262	Unit8 L4	1	FLK1	flake	chert	2.2	30.9x21.5x5.0	0	
A2007.19.100.2	263	Unit8 L4	1	FLK1	flake	chert	0.1	15.9x6.6x1.4	0	
A2007.19.100.3	264	Unit8 L4	1	FLK1	flake	chert	0.1	8.8x7.4x2.4	0	
A2007.19.100.4	265	Unit8 L4	32	FLAK	flake fragment	chert	6.7		0	
A2007.19.100.5	266	Unit8 L4	11	SHAT	shatter	chert	25.7		0	
A2007.19.100.6	267	Unit8 L4	2	FCR	FCR	quartzite	195.8		0	
A2007.19.101.1	268	Unit8 L5	1	UTIL	flake-utilized	chert	0.6	22.6x13.7x2.6	0	feathered
A2007.19.101.2	269	Unit8 L5	2	FLAK	flake fragment	chert	0.8		0	

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.102.1	270	Unit9 L1	1	FLK1	flake	chert	2.8	22.9x22.5x5.1	0	
A2007.19.102.2	271	Unit9 L1	1	FLAK	flake	chert	6.9		0	
A2007.19.102.3	272	Unit9 L1	1	SHAT	shatter	chert	1.1		0	
A2007.19.102.4	273	Unit9 L1	2	SHAT	shatter	quartzite	9.6		0	
A2007.19.103.1	274	Unit9 L2	1	BIF	biface fragment	chert	1.3		0	
A2007.19.103.2	275	Unit9 L2	1	FLK1	flake	chert	0.8	21.5x15.9x3.6	0	
A2007.19.103.3	276	Unit9 L2	1	FLK1	flake	chert	0.2	13.5x9.3x2.2	0	
A2007.19.103.4	277	Unit9 L2	1	FLK1	flake	chert	0.5	12.0x20.3x12.2	0	
A2007.19.103.5	278	Unit9 L2	1	FLK1	flake	chert	0.6	20.3x14.0x3.0	0	
A2007.19.103.6	279	Unit9 L2	1	FLK1	flake	chert	0.3	16.0x9.1x3.1	0	
A2007.19.103.7	280	Unit9 L2	1	FLK1	flake	chert	0.2	10.0x10.0x2.8	0	
A2007.19.103.8	281	Unit9 L2	4	FLAK	flake fragment	argellite	1.2		0	
A2007.19.103.9	282	Unit9 L2	74	FLAK	flake fragment	chert	28.3		0	
A2007.19.103.1	283	Unit9 L2	16	SHAT	shatter	chert	7.3		<50	
A2007.19.104.1	284	Unit9 L2	1	FCR	FCR	quartzite	420.04		0	
A2007.19.104.2	285	Unit9 L3	1	OG	glass	clear	0.2		0	
A2007.19.104.3	286	Unit9 L3	1	FLK1	flake	chert	1.6	23.50x17.3x4.9	0	
A2007.19.104.4	287	Unit9 L3	1	FLK1	flake	chert	0.5	21.7x17.3x4.9	0	
A2007.19.104.5	288	Unit9 L3	1	FLK1	flake	chert	1.1	21.5x17.9x4.3	0	
A2007.19.104.6	289	Unit9 L3	1	FLK1	flake	chert	0.2	16.4x8.8x3.9	0	
A2007.19.104.7	290	Unit9 L3	1	FLK1	flake	chert	0.3	17.8x8.1x2.4	0	
A2007.19.104.8	291	Unit9 L3	1	FLK1	flake	chert	0.2	16.2x5.2x2.8	0	
A2007.19.104.9	292	Unit9 L3	1	FLK1	flake	chert	0.6	18.4x13.2x2.7	0	
A2007.19.104.10	293	Unit9 L3	1	FLK1	flake	chert	0.4	12.7x13.5x	0	
A2007.19.104.11	294	Unit9 L3	1	FLK1	flake	chert	1.2	23.7x14.2x4.4	0	
A2007.19.104.12	295	Unit9 L3	1	FLK1	flake	chert	0.1	9.9x6.0x1.4	0	
A2007.19.104.13	296	Unit9 L3	74	FLAK	flake fragment	chert	24.1		0	
A2007.19.104.14	297	Unit9 L3	2	FLAK	flake fragment	argellite	0.6		<50	
A2007.19.104.15	298	Unit9 L3	22	SHAT	shatter	chert	11.9		0	
A2007.19.104.16	299	Unit9 L3	1	OCH	charcoal	charcoal	0.1		0	

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.105.1	300	Unit9 L4	1	UTIL	flake utilized	chert	0.8	18.6x14.1x13.0	0	transverse & feathered
A2007.19.105.2	301	Unit9 L4	1	FLK1	flake	chert	0.4	15.7x11.7x2.2	0	
A2007.19.105.3	302	Unit9 L4	1	FLK1	flake	chert	0.2	11.9x8.3x2.2	0	
A2007.19.105.4	303	Unit9 L4	1	FLK1	flake	chert	0.1	12.2x7.4x1.8	0	
A2007.19.105.5	304	Unit9 L4	22	FLAK	flake fragment	chert	5.3		0	
A2007.19.105.6	305	Unit9 L4	6	SHAT	shatter	chert	2.3		<50	
A2007.19.106.1	306	Unit10 L1	1	FLK1	flake	chert	4.0	23.9x18.4x9.0	0	
A2007.19.106.2	307	Unit10 L1	12	FLAK	flake fragment	chert	2.9		0	
A2007.19.106.3	308	Unit10 L1	1	CORE	core	chert	18.1	37.5x22.9x19.9	<30	
A2007.19.106.4	309	Unit10 L1	15	SHAT	shatter	chert	3.1		0	
A2007.19.106.5	310	Unit10 L1	6	FCR	FCR	quartzite	36.5		0	
A2007.19.107.1	311	Unit10 L2	1	BIF	biface	chert	2.7	26.9x16.6x7.3	0	transverse
A2007.19.107.2	312	Unit10 L2	1	BIF	biface fragment	chert	1.4		0	transverse
A2007.19.107.3	313	Unit10 L2	1	FLK1	flake	chert	0.4	18.7x10.6x2.9	0	
A2007.19.107.4	314	Unit10 L2	1	FLK1	flake	chert	0.9	22.4x14.1x5.4	0	
A2007.19.107.5	315	Unit10 L2	1	FLK1	flake	chert	0.1	14.0x6.8x1.4	0	
A2007.19.107.6	316	Unit10 L2	1	FLK1	flake	chert	0.2	17.6x9.1x2.6	0	
A2007.19.107.7	317	Unit10 L2	1	FLK1	flake	chert	0.3	15.4x10.2x3.3	0	
A2007.19.107.8	318	Unit10 L2	1	FLK1	flake	chert	0.1	10.4x8.3x1.6	0	
A2007.19.107.9	319	Unit10 L2	1	FLK1	flake	chert	0.1	10.2x9.9x3.1	0	
A2007.19.107.10	320	Unit10 L2	1	FLK1	flake	chert	0.5	19.1x12.7x2.6	0	
A2007.19.108.1	321	Unit10 L4	113	FLAK	flake fragment	chert	39.2		0	
A2007.19.108.2	322	Unit10 L4	2	FLAK	flake fragment	quartzite	1.3		0	
A2007.19.108.3	323	Unit10 L4	1	SCRP	scraper fragment	chert	2.8		0	feathered
A2007.19.108.4	324	Unit10 L4	20	SHAT	shatter	argellite	13.5		0	
A2007.19.108.5	325	Unit10 L4	60	SHAT	shatter	chert	28.5		0	
A2007.19.108.6	326	Unit10 L4	13	FCR	FCR	quartzite	629.6		0	
A2007.19.108.7	327	Unit10 L4	1	HAMR	hammer stone	quartzite	386.2	94.6x64.9x49.0	0	2 indentations liked to shaft straights
A2007.19.109.1	328	Unit10 L3	1	FLK1	flake	chert	1.3	28.5x12.5x5.6	0	

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.109.2	329	Unit10 L3	1	FLK1	flake	chert	0.1	12.2x5.7x1.7	0	
A2007.19.109.3	330	Unit10 L3	1	FLK1	flake	chert	0.1	15.7x6.8x2.6	0	
A2007.19.109.4	331	Unit10 L3	1	FLK1	flake	chert	0.6	18.9x15.7x2.9	0	
A2007.19.109.5	332	Unit10 L3	1	FLK1	flake	chert	0.1	16.7x9.0x2.2	0	
A2007.19.109.6	333	Unit10 L3	1	UTIL	flake fragment utilized	chert	1.4		0	feathered
A2007.19.109.7	334	Unit10 L3	1	UTIL	flake fragment utilized	chert	1.4		0	transverse & feathered
A2007.19.109.8	335	Unit10 L3	81	FLAK	flake fragment	chert	24.5		0	
A2007.19.109.9	336	Unit10 L3	3	FLAK	flake fragment	argellite	0.3		0	
A2007.19.109.10	337	Unit10 L3	13	SHAT	shatter	chert	8.4		0	
A2007.19.109.11	338	Unit10 L3	2	FCR	FCR	quartzite			0	
A2007.19.110.1	339	Unit10 L4	1	FLK1	flake	chert	0.2	21.3x11.7x1.8[	0	
A2007.19.110.2	340	Unit10 L4	1	FLK1	flake	chert	1.9	37.5x15.3x3.8	0	
A2007.19.110.3	341	Unit10 L4	1	FLAK	flake fragment	chert	0.1		0	
A2007.19.110.4	342	Unit10 L4	7	FLAK	flake fragment	chert	1.9		0	
A2007.19.110.5	343	Unit10 L4	3	SHAT	shatter	chert	8.2		0	
A2007.19.111.1	344	Unit10 L5	3	SHAT	shatter	chert	4.5		0	
A2007.19.112.1	345	Unit11 L1	2	FLAK	flake fragment	chert	1.0		0	
A2007.19.112.2	346	Unit11 L1	3	SHAT	shatter	chert	5.3		>50	
A2007.19.113.1	347	Unit11 L2	1	FLK1	flake	chert	0.1	11.6x7.3x1.2	0	
A2007.19.113.2	348	Unit11 L2	13	BIF	biface fragment	chert	2		0	
A2007.19.113.3	349	Unit11 L2	18	SHAT	shatter	chert	9.4		>50	
A2007.19.114.1	350	Unit11 L3	1	BIF	biface fragment utilized	chert	7.4		0	feathered
A2007.19.114.2	351	Unit11 L3	1	UTIL	flake fragment-utilized	chert	1		0	feathered
A2007.19.115.1	352	Unit11 L4	3	FLAK	flake fragment	chert	0.7			

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.115.2	353	Unit11 L4	5	SHAT	shatter	chert	0.3		0	
A2007.19.116.1	354	Unit11 L5	1	UTIL	flake utilized	chert	0.3		0	
A2007.19.116.2	355	Unit11 L5	3	FLAK	flake fragment	chert	0.1		0	feathered
A2007.19.117.1	356	Unit12 L1	1	FLK1	flake	chert	0.06	13.2x8.5x.1	0	
A2007.19.117.2	357	Unit12 L1	4	FLAK	flake fragment	chert	0.09		0	
A2007.19.117.3	358	Unit12 L1	1	SHAT	shatter	chert	4.6		0	
A2007.19.117.4	359	Unit12 L1	1	FCR	FCR	quartzite	20.3		0	
A2007.19.118.1	360	Unit12 L2	1	FLK1	flake	chert	0.5	20.2x9.4x1.3	0	
A2007.19.118.2	361	Unit12 L2	1	FLK1	flake	chert	1.4	15.4x13.0x1.2	0	
A2007.19.118.3	362	Unit12 L2	1	UTIL	flake fragment-utilized	chert	2.1		0	
A2007.19.118.4	363	Unit12 L2	14	FLAK	flake fragment	chert	7.7	15.4x13.0x1.2	0	feathered
A2007.19.118.5	364	Unit12 L2	5	SHAT	shatter	chert	3.8		0	
A2007.19.119.1	365	Unit12 L3	1	UTIL	flake utilized	chert	1.5	19.7x16.5x1.3	0	
A2007.19.119.2	366	Unit12 L3	1	FLK1	flake	chert	0.8	20.4x10.9x2.8	0	feathered
A2007.19.119.3	367	Unit12 L3	10	FLAK	flake fragment	chert	1.9		0	
A2007.19.119.4	368	Unit12 L3	3	SHAT	shatter	chert	1		0	
A2007.19.120.1	369	Unit12 L4	4	FLAK	flake fragment	chert	1.4		0	
A2007.19.120.2	370	Unit12 L4	3	SHAT	shatter	chert	1.9		0	
A2007.19.120.3	371	Unit13 L1	1	FLK1	flake	chert	0.3	15.7x11.3x1.9	0	
A2007.19.120.4	372	Unit13 L1	10	FLAK	flake fragment	chert	2		0	
A2007.19.120.5	373	Unit13 L1	1	CCG	glass	curved, clear	0.4		0	
A2007.19.121.1	374	Unit13 L2	1	UTIL	flake fragment-utilized	chert	1.6		0	
A2007.19.121.2	375	Unit13 L2	13	FLAK	flake fragment	chert	2.8		0	feathered
A2007.19.121.3	376	Unit13 L2	5	FLAK	flake fragment	argellite	2.5		0	
A2007.19.121.4	377	Unit13 L2	1	SHAT	shatter	chert	0.4		0	
A2007.19.122.1	378	Unit13 L3	2	FCR	FCR	quartzite	23.2		0	

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.122.2	379	Unit13 L3	1	BIF	biface fragment	chert	0.5		0	
A2007.19.122.3	380	Unit13 L3	1	FLK1	flake	chert	0.6	11.9x24.2x3.5	0	
A2007.19.122.4	381	Unit13 L3	1	FLK1	flake	chert	0.6	13.5x17.9x2.8	0	
A2007.19.122.5	382	Unit13 L3	1	FLK1	flake	chert	0.4	15.2x16.2x3.4	0	
A2007.19.122.6	383	Unit13 L3	1	UTIL	flake fragment-utilized	chert	2.6			
A2007.19.122.7	384	Unit13 L3	1	UTIL	flake fragment-utilized	chert	1.3		0	transverse
A2007.19.122.8	385	Unit13 L3	2	FLAK	flake fragment	argellite	0.3		0	feathered
A2007.19.122.9	386	Unit13 L3	30	FLAK	flake fragment	chert	7.4		0	
A2007.19.122.10	387	Unit13 L3	5	SHAT	shatter	chert	3.8		0	
A2007.19.122.11	388	Unit13 L3	2	FCR	FCR	quartzite	34		0	
A2007.19.123.1	389	Unit13 L4	1	FLK1	flake	chert	0.6	19.1x11.4x3.2	0	
A2007.19.123.2	390	Unit13 L4	8	FLAK	flake fragment	chert	0.2		0	
A2007.19.123.3	391	Unit13 L4	1	CORE	core	chert	73.2	55.0x29.8x26.7	0	
A2007.19.124.1	392	Unit13 L5	1	UTIL	flake fragment-utilized	chert	1.9		0	
A2007.19.125.1	393	Unit14 L1	1	UTIL	flake fragment-utilized	chert	0.1		0	
A2007.19.126.1	394	Unit14 L2	1	BIF	biface fragment	chert	0.8		0	
A2007.19.126.2	395	Unit14 L2	1	FLK1	flake	chert	0.4	2.6x6.8x2.0	0	
A2007.19.126.3	396	Unit14 L2	1	UTIL	flake fragment-utilized	chert	0.9		0	

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.126.4	397	Unit14 L2	1	FLAK	flake fragment	quartzite/gneiss	0.6		0	feathered
A2007.19.126.5	398	Unit14 L2	13	FLAK	flake fragment	chert	5		0	
A2007.19.126.6	399	Unit14 L2	2	SHAT	shatter	chert	12.7		0	
A2007.19.126.7	400	Unit14 L2	2	FCR	FCR	quartzite	147.8		0	
A2007.19.127.1	401	Unit14 L3	1	DRIL	drill fragment	chert	1.5		0	
A2007.19.127.2	402	Unit14 L3	1	FLK1	flake	chert	0.3	15.5x11.6x2.4	0	
A2007.19.127.3	403	Unit14 L3	34	FLAK	flake fragment	chert	8.8		0	
A2007.19.127.4	404	Unit14 L3	8	FLAK	flake fragment	argellite	2.9		0	
A2007.19.127.5	405	Unit14 L3	10	SHAT	shatter	chert	46.9		0	
A2007.19.127.6	406	Unit14 L3	1	SHAT	shatter	argellite	5.5		0	
A2007.19.127.7	407	Unit14 L3	1	FCR	FCR	quartzite	71.8		0	
A2007.19.128.1	408	Unit14 L4	1	FLAK	flake fragment	argellite	0.2		0	
A2007.19.128.2	409	Unit14 L4	1	SHAT	shatter	argellite	5.2		0	
A2007.19.128.3	410	Unit14 L4	2	SHAT	shatter	chert	3.6		0	
A2007.19.129.1	411	Unit14 L5	1	FLAK	flake fragment	chert	0.1		0	
A2007.19.130.1	412	Unit15 L1	9	FLAK	flake fragment	chert	3.9		0	
A2007.19.130.2	413	Unit15 L1	1	FLAK	flake fragment	argellite	0.2		0	
A2007.19.131.1	414	Unit15 L2	1	FLK1	flake	argellite	2.4	23.3x17.0x6.4	0	
A2007.19.131.2	415	Unit15 L2	1	FLK1	flake	chert	0.4	18.4x10.6x3.2	0	
A2007.19.131.3	416	Unit15 L2	1	FLK1	flake	chert	0.3	18.1x10.3x2.5	0	
A2007.19.131.4	417	Unit15 L2	81	FLAK	flake fragment	chert	20.3		0	
A2007.19.131.5	418	Unit15 L2	13	FLAK	flake fragment	argellite	4.7		0	
A2007.19.131.6	419	Unit15 L2	7	SHAT	shatter	chert	9.1		0	
A2007.19.131.7	420	Unit15 L2	3	SHAT	shatter	argellite	2.8		<50	
A2007.19.132.1	421	Unit15 L3	1	FLK1	flake	chert	1.4	26.3x14.8x6.4	0	
A2007.19.132.2	422	Unit15 L3	1	FLK1	flake	chert	0.2	9.9x13.8x1.8	0	
A2007.19.132.3	423	Unit15 L3	1	FLK1	flake	argellite	0.4	14.8x12.7x3.2	0	
A2007.19.132.4	424	Unit15 L3	1	FLK1	flake	argellite	0.3	18.7x10.3x3.0	0	
A2007.19.132.5	425	Unit15 L3	102	FLAK	flake fragment	chert	15.3		0	

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.132.6	426	Unit15 L3	19	FLAK	flake fragment	argellite	4		0	
A2007.19.132.7	427	Unit15 L3	10	SHAT	shatter	chert	20.4		0	
A2007.19.133.1	428	Unit15 L4	1	BIF	biface side notched	chert	2.7		0	
A2007.19.133.2	429	Unit15 L4	12	FLAK	flake fragment	chert	3.4		0	
A2007.19.133.3	430	Unit15 L4	1	SHAT	shatter	argellite	0.4		0	
A2007.19.134.1	431	Scraping 0-2 10-15cm	14	FLAK	flake fragment	chert	3.1		0	
A2007.19.134.2	432	Scraping 0-2 10-15cm	7	SHAT	shatter	chert	5		0	
A2007.19.135.1	433	Scraping 2-4 20-25cm	1	FLK1	flake	chert	0.1	15.2x8.3x1.9	0	
A2007.19.135.2	434	Scraping 2-4 20-25cm	1	FLK1	flake	chert	0.4	11.5x16.8x3.1	0	
A2007.19.135.3	435	Scraping 2-4 20-25cm	9	FLAK	flake fragment	chert	3.4		0	
A2007.19.136.1	436	Scraping 4-6 25-30cm	7	FLAK	flake fragment	chert	2.3		0	
A2007.19.136.2	437	Scraping 4-6 25-30cm	1	SHAT	shatter	chert	2.8		0	
A2007.19.137.1	438	Scraping 6-8 30-35cm	4	FLAK	flake fragment	chert	1.4		0	
A2007.19.138.1	439	Scraping 6-8 0-5cm	3	FLAK	flake fragment	chert	0.2		0	
A2007.19.139.1	440	Scraping 6-8 5-10cm	1	FLAK	flake fragment	argellite	0.1		0	
A2007.19.139.2	441	Scraping 6-8 5-10cm	3	SHAT	shatter	chert	1.8		0	
A2007.19.140.1	442	Scraping 6-8 10-15cm	1	FLK1	flake	chert	0.4	21.6x12.1x1.9	0	
A2007.19.140.2	443	Scraping 6-8 10-15cm	14	FLAK	flake fragment	chert	3.5		0	

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.141.1	444	Scraping 6-8 20-25cm	1	FLK1	flake	chert	0.1	14.3x12.2x2.5	0	
A2007.19.141.2	445	Scraping 6-8 20-25cm	1	FLK1	flake	chert	0.5	16.5x10.8x2.2	0	
A2007.19.141.3	446	Scraping 6-8 20-25cm	7	FLAK	flake fragment	chert	3.2		0	
A2007.19.142.1	447	Scraping 6-8 0-5cm	1	FLK1	flake	chert	3.1	29.6x25.2x6.3	0	
A2007.19.142.2	448	Scraping 6-8 0-5cm	3	FLAK	flake fragment	chert	1.2		0	
A2007.19.143.1	449	Scraping 6-8 35-40cm	1	FLK1	flake	chert	0.1	13.8x4.5x1.7	0	
A2007.19.143.2	450	Scraping 6-8 35-40cm	3	FLAK	flake fragment	chert	0.6		0	
A2007.19.144.1	451	Scraping 8-10 0-5cm	3	FLAK	flake fragment	chert	0.8		0	
A2007.19.145.1	452	Scraping 8-10 10-15cm	1	FLK1	flake	chert	0.4	14.5x14.3x2.9	0	
A2007.19.145.2	453	Scraping 8-10 10-15cm	1	FLK1	flake	chert	0.5	14.3x14.0x3.6	0	
A2007.19.145.3	454	Scraping 8-10 10-15cm	16	FLAK	flake fragment	chert	3.9		0	
A2007.19.145.4	455	Scraping 8-10 10-15cm	5	SHAT	shatter	chert	2.2		0	
A2007.19.146.1	456	Scraping 8-10 15-20cm	1	FLK1	flake	chert	0.5	26.3x11.2x7.0	0	
A2007.19.146.2	457	Scraping 8-10 15-20cm	1	FLK1	flake	chert	0.1	14.3x7.6x0.9	0	
A2007.19.146.3	458	Scraping 8-10 15-20cm	18	FLAK	flake fragment	chert	7.1		0	
A2007.19.146.4	459	Scraping 8-10 15-20cm	2	SHAT	shatter	chert	9.2		0	
A2007.19.147.1	460	Scraping 8-10 30-35cm	1	FLK1	flake	chert	1.4	19.5x19.4x4.9	0	

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.147.2	461	Scraping 8-10 30-35cm	1	FLK1	flake	chert	0.1	11.4x9.0x1.2	0	
A2007.19.147.3	462	Scraping 8-10 30-35cm	18	FLAK	flake fragment	chert	3.7		0	
A2007.19.148.1	463	Scraping 8-10 5-10cm	1	FLK1	flake	chert	0.6	17.7x10.8	0	
A2007.19.148.2	464	Scraping 8-10 5-10cm	11	FLAK	flake fragment	chert	3.8		0	
A2007.19149.1	465	Stripping 8-10 25-30cm	22	FLAK	flake fragment	chert	9.3		0	
A2007.19.150.1	466	Scraping 8-10 20-25cm	1	BIF	biface	chert	12.1	62.2x30.6x8.3	0	
A2007.19.150.2	467	Scraping 8-10 20-25cm	17	FLAK	flake fragment	chert	8.3		0	
A2007.19.151.1	468	Scraping 8-10 5-10cm	2	FLAK	flake fragment	chert	0.7		0	
A2007.19.152.1	469	Scraping 8-10 20-25cm	1	SHAT	shatter	chert	2.5		0	
A2007.19.153.1	470	Scraping 8-10 10-15cm	1	FLK1	flake	chert	1	20.6x17.8x4.1	0	
A2007.19.153.2	471	Scraping 8-10 10-15cm	18	FLAK	flake fragment	chert	5.2	20.6x17.8x4.1	0	
A2007.19.154.1	472	Stripping 10-12 15-20cm	1	UTIL	flake fragment utilized	chert	2.7		0	
A2007.19.154.2	473	Stripping 10-12 15-20cm	19	FLAK	flake fragment	chert	6.1		0	feathered
A2007.19.154.3	474	Stripping 10-12 15-20cm	3	SHAT	shatter	chert	1		0	
A2007.19.155.1	475	Scraping 12-14 15-20cm	1	FLK1	flake	chert	2.1	25.5x19.5x4.9	0	
A2007.19.155.2	476	Scraping 12-14 15-20cm	1	FLK1	flake	chert	1.6	21.2x24..1x4.1	0	

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.155.3	477	Scraping 12-14 15-20cm	1	FLK1	flake	chert	0.2	13.9x8.5x1.9	0	
A2007.19.155.4	478	Scraping 12-14 15-20cm	24	FLAK	flake fragment	chert	6.6		0	
A2007.19.155.5	479	Scraping 12-14 15-20cm	9	SHAT	shatter	chert	11.3		0	
A2007.19.156.1	480	Scraping 12-14 0-5cm	1	FLK1	flake	chert	0.4	16.5x11.1x2.5	<50	
A2007.19.156.2	481	Scraping 12-14 0-5cm	28	FLAK	flake fragment	chert	7.9		0	
A2007.19.156.3	482	Scraping 12-14 0-5cm	8	SHAT	shatter	chert	5.1		0	
A2007.19.157.1	483	Scraping 12-14 5-10cm	1	FLK1	flake	chert	0.1	8.2x9.2x3.0	0	
A2007.19.157.2	484	Scraping 12-14 5-10cm	18	FLAK	flake fragment	chert	4.7		0	
A2007.19.157.3	485	Scraping 12-14 5-10cm	3	SHAT	shatter	chert	6.1		0	
A2007.19.157.4	486	Scraping 12-14 5-10cm	1	FLK1	flake	chert	0.4	16.8x8.5x2.7	0	
A2007.19.157.5	487	Scraping 12-14 5-10cm	1	FLK1	flake	chert	1.4	26.5x10.4x7.3	0	
A2007.19.157.6	488	Scraping 12-14 5-10cm	1	FLK1	flake	chert	0.1	11.6x8.5x2.2	0	
A2007.19.157.7	489	Scraping 12-14 5-10cm	8	FLAK	flake fragment	chert	1.7		0	
A2007.19.157.8	490	Scraping 12-14 5-10cm	4	SHAT	shatter	chert	4.2		0	
A2007.19.158.1	491	Scraping 14-16 20-30cm	1	FLK1	flake	chert	2.4	28.5x20.2x4.4	0	
A2007.19.158.2	492	Scraping 14-16 20-30cm	1	FLK1	flake	chert	0.1	15.5x11.2x1.8	0	

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.158.3	493	Scraping 14-16 20-30cm	8	FLAK	flake fragment	chert	1.5		0	
A2007.19.158.4	494	Scraping 14-16 20-30cm	1	SHAT	shatter	chert	1.8		0	
A2007.19.159.1	495	Scraping 16-18 0-5cm	3	FLAK	flake fragment	chert	0.5		0	
A2007.19.159.2	496	Scraping 16-18 20-25cm	5	FLAK	flake fragment	chert	2.2		0	
A2007.19.159.3	497	Scraping 16-18 20-25cm	1	URN	nail fragment	metal	7.4		0	
A2007.19.160.1	498	Scraping 16-18 5-10cm	1	FLAK	flake fragment	chert	0.7		0	
A2007.19.160.2	499	Scraping 16-18 5-10cm	3	FLAK	flake fragment	chert	1.2		0	
A2007.19.161.1	500	Scraping 16-18 10-15cm	2	FLAK	flake fragment	chert	0.4		0	
A2007.19.161.2	501	Scraping 16-18 10-15cm	1	SHAT	shatter	chert	3.2		0	
A2007.19.162.1	502	Scraping 16-18 15-20cm	1	FLK1	flake	chert	0.8	16.9x18.8x3.0	0	
A2007.19.162.2	503	Scraping 16-18 15-20cm	1	FLK1	flake	chert	<0.1	9.7x5.3x1.4	0	
A2007.19.162.3	504	Scraping 16-18 15-20cm	3	FLAK	flake fragment	chert	0.7		0	
A2007.19.162.4	505	Scraping 16-18 15-20cm	1	SHAT	shatter	chert	0.2		0	
A2007.19.163.1	506	Scraping 16-18 25-30cm	4	FLAK	flake fragment	chert	4.4		0	
A2007.19.163.2	507	Scraping 16-18 25-30cm	3	SHAT	shatter	chert	4.3		0	
A2007.19.164.1	508	Scraping 18-20 0-5cm	1	FLAK	flake fragment	chert	1.1		0	

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.164.2	509	Scraping 18-20 0-5cm	1	SHAT	shatter	chert	0.7		0	
A2007.19.165.1	510	Scraping 18-20 10-15cm	2	FCR	FCR	chert	24		0	
A2007.19.165.2	511	Scraping 18-20 10-15cm	1	UNZ	porcelain fragment		2.5		0	
A2007.19.166.1	512	Scraping 18-20 15-20cm	1	FLK1	flake	chert	1.4	20.5x16.0x5.4	0	
A2007.19.166.2	513	Scraping 18-20 15-20cm	1	FLAK	flake fragment	chert	<0.1		<50	
A2007.19.166.3	514	Scraping 18-20 15-20cm	1	SHAT	shatter	chert	0.6		0	
A2007.19.166.4	515	Scraping 18-20 15-20cm	1	SHAT	shatter	chert	2.3		0	transverse scalloping
A2007.19.167.1	516	Scraping 18-20 15-30cm	1	FLK1	flake	chert	1.8	29.4x23.1x4.2	0	
A2007.19.167.2	517	Scraping 18-20 15-30cm	5	FLAK	flake fragment	chert	4.2		0	
A2007.19.167.3	518	Scraping 18-20 15-30cm	4	SHAT	shatter	chert	1		0	
A2007.19.168.1	519	Scraping 18-20 20-25cm	2	CFG	glass	clear, flat	0.7		0	
A2007.19.168.2	520	Scraping 18-20 20-25cm	4	FLAK	flake fragment	chert	1.3		0	
A2007.19.168.3	521	Scraping 18-20 20-25cm	5	SHAT	shatter	chert	3.3		0	
A2007.19.169.1	522	Scraping 18-20 30-35cm	1	FLK1	flake	quartzite	29.5	42.1x27.7x23.1	0	
A2007.19.170.1	523	Scraping 20-22 25-30cm	1	xI	ceramic fragment	whiteware	0.8		0	1820+CCG
A2007.19.170.2	524	Scraping 20-22 25-30cm	1	FLAK	flake fragment	chert	0.6		0	
A2007.19.170.3	525	Scraping 20-22 25-30cm	4	SHAT	shatter	chert	1.4		0	

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.171.1	526	Scraping 20-22 30-40cm	1	FLK1	flake	chert	1.2	24.8x14.7x3.7	<50	
A2007.19.171.2	527	Scraping 20-22 30-40cm	7	FLAK	flake fragment	chert	2.4		0	
A2007.19.171.3	528	Scraping 20-22 30-40cm	4	SHAT	shatter	chert	2.4		0	
A2007.19.172.1	529	Scraping 20-22 10-15cm	1	FLK1	flake	chert	0.3	9.5x10.2x3.0	0	
A2007.19.172.2	530	Scraping 20-22 10-15cm	7	FLAK	flake fragment	chert	1.1		0	
A2007.19.172.3	531	Scraping 20-22 10-15cm	2	SHAT	shatter	chert	2		0	
A2007.19.173.1	532	Scraping 20-22 0-15cm	3	FLAK	flake fragment	chert	1.1		0	
A2007.19.174.1	533	Scraping 20-22 5-10cm	1	FLK1	flake	chert	2.1	24.4x16.8x6.4	0	
A2007.19.174.2	534	Scraping 20-22 5-10cm	1	FLK1	flake	chert	0.3	13.9x10.8x2.5	0	
A2007.19.174.3	535	Scraping 20-22 5-10cm	2	FLAK	flake fragment	chert	1.2		0	
A2007.19.175.1	536	Scraping 20-22 20-26cm	4	FLAK	flake fragment	chert	2.4		0	
A2007.19.176.1	537	Scraping 20-22 20-25cm	1	SHAT	shatter	chert	1.6		0	
A2007.19.177.1	538	Scraping 20-22 15-20cm	3	FLAK	flake fragment	chert	0.6		0	
A2007.19.177.2	539	Scraping 20-22 15-20cm	3	SHAT	shatter	chert	2.5		0	
A2007.19.178.1	540	Scraping 22-24 30-35cm	3	FLAK	flake fragment	chert	0.6		0	
A2007.19.179.1	541	Scraping 22-24 0cm	1	SHAT	shatter	chert	0.1		0	

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.180.1	542	Scraping 22-24 10-15cm	2	FLAK	flake fragment	chert	0.1		0	
A2007.19.180.2	543	Scraping 22-24 10-15cm	1	FLAK	flake fragment.	chert	5.3		0	
A2007.19.181.1	544	Scraping 22-24 25-30cm	2	FLAK	flake fragment	chert	2		100	
A2007.19.181.2	545	Scraping 22-24 25-30cm	2	SHAT	shatter	chert	0.5		0	
A2007.19.181.3	546	Scraping 22-24 25-30cm	1	FLAK	flake fragment.	chert	29.3		0	
A2007.19.182.1	547	Scraping 22-24 30-35cm	3	FLAK	flake fragment	chert	9.3		100	
A2007.19.183.1	548	Scraping 24-26 10-15cm	1	FLK1	flake	chert	0.1	15.9x7.7x2.5	0	
A2007.19.183.2	549	Scraping 24-26 10-15cm	3	FLAK	flake fragment	chert	0.7		0	
A2007.19.183.3	550	Scraping 24-26 10-15cm	5	SHAT	shatter	chert	5.1		0	
A2007.19.184.1	551	Scraping 24-26 15-20cm	1	UTIL	flake utilized	chert	3	26.4x22.6x5.5	0	
A2007.19.184.2	552	Scraping 24-26 15-20cm	3	FLAK	flake fragment	chert	0.2		0	feathered
A2007.19.184.3	553	Scraping 24-26 15-20cm	3	SHAT	shatter	chert	2.3		0	
A2007.19.185.1	554	Scraping 24-26 5-10cm	8	FLAK	flake fragment	chert	3.6		<50	
A2007.19.185.2	555	Scraping 24-26 5-10cm	1	SHAT	shatter	chert	0.5		0	
A2007.19.186.1	556	Scraping 24-26 20-30cm	2	FLAK	flake fragment	chert	0.3		0	
A2007.19.186.2	557	Scraping 24-26 20-30cm	2	SHAT	shatter	chert	1.4		0	

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.187.1	558	Scraping 26-28 5-10cm	2	FLAK	flake fragment	chert	1.2		<50	
A2007.19.187.2	559	Scraping 26-28 5-10cm	2	SHAT	shatter	chert	0.4		0	
A2007.19.188.1	560	Scraping 26-28 10-20cm	2	FLAK	flake fragment	chert	0.6		0	
A2007.19.188.2	561	Scraping 26-28 10-20cm	1	UTIL	flake fragment utilized	chert	0.3		0	
A2007.19.188.3	562	Scraping 26-28 10-20cm	3	SHAT	shatter	chert	1.7		0	feathered
A2007.19.189.1	563	Scraping 26-28 20-25cm	1	FLK1	flake	chert	0.2	10.6x6.9x2.4	<30	
A2007.19.189.2	564	Scraping 26-28 20-25cm	2	FLAK	flake fragment	chert	0.5		0	
A2007.19.190.1	565	Scraping 26-28 25-30cm	1	FLAK	flake fragment	chert	0.7		0	
A2007.19.190.2	566	Scraping 26-28 25-30cm	1	SHAT	shatter	chert	0.3		0	
A2007.19.191.1	567	Scraping 26-28 10-15cm	2	FLAK	flake fragment	chert	1		0	
A2007.19.191.2	568	Scraping 26-28 10-15cm	1	SHAT	shatter	chert	31.5		0	
A2007.19.191.3	569	Scraping 26-28 10-15cm	2	FCR	FCR	quartzite	49.2		>50	
A2007.19.191.4	570	Scraping 28-30 10-15cm	1	FLK1	flake	chert	0.2	14.6x10.2x2.1	0	
A2007.19.191.5	571	Scraping 28-30 10-15cm	6	FLAK	flake fragment	chert	2.4		0	
A2007.19.191.6	572	Scraping 28-30 10-15cm	8	SHAT	shatter	chert	8.9		0	
A2007.19.192.1	573	Scraping 30-32 10-20cm	1	FLK1	flake	chert	0.2	11.5x8.6x1.5	0	
A2007.19.192.2	574	Scraping 30-32 10-20cm	9	FLAK	flake fragment	chert	2.5		0	

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.193.1	575	Scraping 24-26 5-10cm	5	SHAT	shatter	chert	4.6		0	
A2007.19.194.1	576	Scraping 32-34 10-20cm	1	BIF	biface	chert	3	29.7x17.0x5.3	0	
A2007.19.194.2	577	Scraping 32-34 10-20cm	1	FLK1	flake	chert	3.6	27.6x22.3x7.9	0	
A2007.19.194.3	578	Scraping 32-34 10-20cm	1	FLK1	flake	chert	1.7	21.1x14.3x5.4	0	
A2007.19.194.4	579	Scraping 32-34 10-20cm	5	FLAK	flake fragment	chert	1.1		0	
A2007.19.194.5	580	Scraping 32-34 10-20cm	27	SHAT	shatter	chert	27.4		0	
A2007.19.194.6	581	Scraping 32-34 10-20cm	1	FCR	FCR	quartzite	54.4	69.3x33.2x25.8	>50	
A2007.19.195.1	582	Scraping 34-36 10-15cm	1	FLK1	flake	chert	1.6	17.5x9.7x8.2	0	
A2007.19.195.2	583	Scraping 34-36 10-15cm	4	FLAK	flake fragment	chert	1.4		<30	
A2007.19.195.3	584	Scraping 34-36 10-15cm	3	SHAT	shatter	chert	3		0	
A2007.19.196.1	585	Scraping 38-40 10-20cm	1	FLK1	flake	chert	1	23.1x13.7x2.6	>50	
A2007.19.196.2	586	Scraping 38-40 10-20cm	22	FLAK	flake fragment	chert	7.7		0	
A2007.19.196.3	587	Scraping 38-40 10-20cm	4	SHAT	shatter	chert	10.2		0	
A2007.19.197.1	588	Scraping 36-38 20-25cm	1	FLK1	flake	chert	1.1	27.1x10.9x5.2	0	
A2007.19.197.2	589	Scraping 36-38 20-25cm	1	FLK1	flake	chert	1.8	21.3x19.1x4.0	0	
A2007.19.197.3	590	Scraping 36-38 20-25cm	1	FLK1	flake	chert	2.2	23.2x22.8x4.2	0	
A2007.19.197.4	591	Scraping 36-38 20-25cm	10	FLAK	flake fragment	chert	5		0	

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.197.5	592	Scraping 36-38 20-25cm	1	FLK1	flake	chert	1.6	16.5x20.3x7.6	0	
A2007.19.197.6	593	Scraping 36-38 20-25cm	1	GBS	stoneware fragment	exterior & interior glaze	59.9		<50	
A2007.19.198.1	594	Scraping 40-42 10-20cm	1	FLK1	flake	chert	0.7	17.4x14.1x2.6	0	
A2007.19.199.1	595	Scraping 30-32 10-15cm	57	FLAK	flake fragment	chert	18.2		0	
A2007.19.199.2	596	Scraping 30-32 10-15cm	4	FLAK	flake fragment	argellite	0.1		0	
A2007.19.199.3	597	Scraping 30-32 10-15cm	12	SHAT	shatter	chert	23.8		0	
A2007.19.200.1	598	Scraping 30-32 5-10cm	3	OCO	coal slag	coal	2.2		0	
A2007.19.200.2	599	Scraping 30-32 5-10cm	1	UDM	metal	unidentifia ble	16.5		0	
A2007.19.201.1	600	Scraping 42-44 20-25cm	1	BIF	biface utilized	chert	8.3	32.3x30.3x9.5	0	
A2007.19.201.2	601	Scraping 42-44 20-25cm	1	BIF	biface fragment utilized	chert	15.4		0	feathered, transverse
A2007.19.201.3	602	Scraping 42-44 20-25cm	1	FLK1	flake	chert	1	22.0x16.9x3.2	0	feathered
A2007.19.201.4	603	Scraping 42-44 20-25cm	26	FLAK	flake fragment	chert	16.1		0	
A2007.19.202.1	604	Scraping 46-48 5-10cm	1	BIF	biface fragment utilized	chert	8		0	
A2007.19.202.2	605	Scraping 46-48 5-10cm	1	FLK1	flake	chert	1.1	24.5x20.8x2.7	0	feathered
A2007.19.202.3	606	Scraping 46-48 5-10cm	1	FLK1	flake	chert	0.8	25.9x15.0x4.1	0	

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.202.4	607	Scraping 46-48 5-10cm	15	FLAK	flake fragment	chert	6.6		0	
A2007.19.203.1	608	Scraping 48-50 10-15cm	11	FLAK	flake fragment	chert	3.9		0	
A2007.19.203.2	609	Scraping 48-50 10-15cm	2	SHAT	shatter	chert	0.6		0	
A2007.19.203.3	610	Scraping 48-50 10-15cm	4	FCR	FCR	quartzite	49.5		0	
A2007.19.203.4	611	Scraping 48-50 10-15cm	1	CFG	glass fragment	clear, flat	0.4		0	
A2007.19.203.5	612	Scraping 48-50 10-15cm	1	UDB	bone	fragment	1.4		0	
A2007.19.204.1	613	Scraping 50-52 20-25cm	1	FLK1	flake	chert	0.1	9.1x7.2x1.1	0	
A2007.19.204.2	614	Scraping 50-52 20-25cm	2	FLAK	flake fragment	chert	1.1		0	
A2007.19.204.3	615	Scraping 50-52 20-25cm	1	SHAT	shatter	chert	0.4		0	
A2007.19.204.4	616	Scraping 50-52 20-25cm	1	FCR	FCR	quartzite	0.6		0	
A2007.19.205.1	617	Scraping 52-54 10-20cm	2	FLAK	flake fragment	chert	0.9		0	
A2007.19.206.1	618	Scraping 54-56 10-20cm	1	FLAK	flake fragment	argellite	1.9		0	
A2007.19.206.2	619	Scraping 54-56 10-20cm	3	FLAK	flake fragment	chert	0.8		0	
A2007.19.206.3	620	Scraping 54-56 10-20cm	1	SHAT	shatter	chert	1.8		0	
A2007.19.207.1	621	Scraping 56-58 0-5cm	1	CORE	core	chert	31.7		0	
A2007.19.207.2	622	Scraping 56-58 0-5cm	6	FLAK	flake fragment	chert	2.2		<50	

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.207.3	623	Scraping 56-58 0-5cm	5	SHAT	shatter	chert	9.1		0	
A2007.19.208.1	624	Scraping 58-60 5-10cm	2	FLAK	flake fragment	chert	0.8		0	
A2007.19.209.1	625	Scraping 60-62 5-10cm	1	FLAK	flake fragment	chert	0.4		0	
A2007.19.209.2	626	Scraping 60-62 5-10cm	1	FLAK	flake fragment	chert	0.2		0	transverse, feathered
A2007.19.209.3	627	Scraping 60-62 5-10cm	2	SHAT	shatter	chert	2.9		0	
A2007.19.209.4	628	Scraping 60-62 5-10cm	1	FCR	FCR	quartzite	1.8		0	
A2007.19.210.1	629	Scraping 62-64 5-10cm	1	FLK1	flake	chert	0.4	12.0x8.5x2.6	0	
A2007.19.210.2	630	Scraping 62-64 5-10cm	2	FLAK	flake fragment	chert	1.1		0	
A2007.19.211.1	631	Scraping 64-66 0-5cm	1	FLK1	flake	chert	3.5	21.6x26.7x6.2	0	
A2007.19.211.2	632	Scraping 64-66 0-5cm	1	FLK1	flake	chert	0.4	12.3x12.4-2.4	50	
A2007.19.211.3	633	Scraping 64-66 0-5cm	12	FLAK	flake fragment	chert	3.6		0	
A2007.19.212.1	634	Scraping 66-68 5-10cm	1	FLK1	flake	chert	0.3	18.7x8.1x3.5	0	
A2007.19.212.2	635	Scraping 66-68 5-10cm	8	FLAK	flake fragment	chert	6.3		0	
A2007.19.212.3	636	Scraping 66-68 5-10cm	1	SHAT	shatter	chert	1.2		0	
A2007.19.213.1	637	Scraping 68-70 10-16cm	1	FLAK	flake fragment	chert	1.6		0	
A2007.19.213.2	638	Scraping 68-70 10-15cm	4	FLAK	flake fragment	chert	1.1		0	

Accession #	Catalog #	Provenience	Quantity	NYSM Code	Object	Material	Weight (g)	Dimensions (mm)	% Cortex	Comments
A2007.19.213.3	639	Scraping 68-70 10-15cm	1	FCR	FCR	quartzite	6.4		0	
A2007.19.214.1	640	Scraping 70-72 5-10cm	3	FLAK	flake fragment	chert	1		0	
A2007.19.215.1	641	Scraping 72-74 10-15cm	1	FLK1	flake	chert	0.7	16.3x23.2x2.8	0	
A2007.19.215.2	642	Scraping 72-74 10-15cm	1	FLK1	flake	chert	0.3	22.6x7.3x2.2	0	
A2007.19.215.3	643	Scraping 72-74 10-15cm	1	FLAK	flake fragment	chert	0.7		0	
A2007.19.215.4	644	Scraping 72-74 10-15cm	1	FLAK	flake fragment	chert	0.2		0	
A2007.19.215.5	645	Scraping 72-74 10-15cm	5	SHAT	shatter	chert	6.7		0	
A2007.19.215.6	646	Scraping 72-74 10-15cm	5	SHAT	shatter	argellite	1.4		0	
A2007.19.215.7	647	Scraping 72-74 10-15cm	2	FCR	FCR	quartzite	9.9		0	
A2007.19.216.1	648	Scraping 74-76 5-10cm	1	FLK1	flake	chert	10.1	11.3x9.4x1.4	0	
A2007.19.216.2	649	Scraping 74-76 5-10cm	2	FLAK	flake fragment	chert	1.4		0	
A2007.19.217.1	650	Scraping 76-78 0-5cm	1	UTIL	flake retouched	chert	0.4	17.8x11.4x2.7	0	
A2007.19.217.2	651	Scraping 76-78 0-5cm	2	FLAK	flake fragment	chert	0.1		<50	transverse, feathered
A2007.19.218.1	652	Scraping 78-80 5-10cm	1	FLAK	flake fragment	chert	<0.1		0	
A2007.19.219.1	653	Scraping 82-84 10-15cm	1	FLAK	flake fragment	chert	0.1		0	
A2007.19.220.1	654	Scraping 86-88 10-15cm	1	SHAT	shatter, retouched	chert	2.1		0	

Appendix E.

Paleobotanical Report

MACROFLORAL ANALYSIS AT THE ROGERS ARCHAEOLOGICAL SITE, NEW YORK

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INTRODUCTION

A total of eight macrofloral samples were recovered from seven possible features at the Rogers Archaeological Site near Sherburne, New York. Radiocarbon dates suggest Early to Late Woodland occupations. Macrofloral analysis is used to provide subsistence information concerning plant resources utilized by the various occupants of this site.

METHODS

Macrofloral

The macrofloral samples were floated using a modification of the procedures outlined by Matthews (1979). Each sample was added to approximately 3 gallons of water, then stirred until a strong vortex formed. The floating material (light fraction) was poured through a 150 micron mesh sieve. Additional water was added and the process repeated until all floating material was removed from the sample (a minimum of five times). The material that remained in the bottom (heavy fraction) was poured through a 0.5-mm mesh screen. The floated portions were allowed to dry.

The light fractions were weighed, then passed through a series of graduated screens (US Standard Sieves with 2-mm, 1-mm, 0.5-mm and 0.25-mm openings) to separate charcoal debris and to initially sort the remains. The contents of each screen then were examined. Charcoal pieces larger than 2-mm, 1-mm, or 0.5-mm in diameter were separated from the rest of the light fraction and the total charcoal weighed. A representative sample of these charcoal pieces was broken to expose a fresh cross section and examined under a binocular microscope at a magnification of 70x. The weights of each charcoal type within the representative sample also were recorded. The material that remained in the 2-mm, 1-mm, 0.5-mm, and 0.25-mm sieves was scanned under a binocular stereo microscope at a magnification of 10x, with some identifications requiring magnifications of up to 70x. The material that passed through the 0.25-mm screen was not examined. The heavy fractions were scanned at a magnification of 2x for the presence of botanic remains. Remains from the light and heavy fractions were recorded as charred and/or uncharred, whole and/or fragments. The term "seed" is used to represent seeds, achenes, caryopses, and other disseminules. Macrofloral remains are identified using manuals (Martin and Barkley 1961; Musil 1963; Schopmeyer 1974) and by comparison with modern and archaeological references.

Samples from archaeological sites commonly contain both charred and uncharred remains. Many ethnobotanists use the basic rule that unless there is a specific reason to believe otherwise, only charred remains will be considered prehistoric (Minnis 1981:147). Minnis (1981:147) states that it is "improbable that many prehistoric seeds survive uncharred through common archaeological time spans." Few seeds live longer than a century, and most live for a much shorter period of time (Harrington 1972; Justice and Bass 1978; Quick 1961). It is presumed that once seeds have died, decomposing organisms act to decay the seeds. Sites in caves, water-logged areas, and in very arid areas, however, can contain uncharred prehistoric remains. Interpretation of uncharred seeds to represent presence in the prehistoric record is considered on a sample-by-sample basis. Extraordinary conditions for preservation are required.

ETHNOBOTANIC REVIEW

Ethnological (historic) plant uses are important in interpreting certain charred macrofloral remains as possible or even probable subsistence items in prehistoric times. The ethnobotanic literature provides evidence for the exploitation of numerous plants in historic times, both by broad categories and by specific example. Evidence for exploitation from numerous sources can suggest a widespread utilization and strengthens the possibility that the same or similar resources were used in prehistoric times. Ethnographic sources outside the study area have been consulted to permit a more exhaustive review of potential uses for each plant. Ethnographic sources do document that with some plants, the historic use was developed and carried from the past. A plant with medicinal qualities very likely was discovered in prehistoric times and the usage persisted into historic times. There is, however, likely to have been a loss of knowledge concerning the utilization of plant resources as cultures moved from subsistence to agricultural economies and/or were introduced to European foods during the historic period. The ethnobotanic literature serves only as a guide indicating that the potential for utilization existed in prehistoric times--not as conclusive evidence that the resources were used. Pollen and macrofloral remains, when compared with the material culture (artifacts and features) recovered by the archaeologists, can become indicators of use. Plants represented by charred macrofloral remains are discussed in the following paragraphs in order to provide an ethnobotanic background for discussing the remains.

Native Plants

Juglandaceae (Walnut Family)

The Juglandaceae (walnut) family includes hickory nuts and pecans (*Carya*), as well as walnuts (*Juglans*). Nut production is cyclical in nature, with most trees producing a good crop once every two to three years. Talalay *et al.* (1984:338) note that "evidence for the use of nuts as a food source is nearly ubiquitous in aboriginal eastern North America from at least the Early Archaic (*ca*. 8000-6000 B.C.) to the ethnographic-historic present."

***Carya* (Hickory)**

Hickory nuts (*Carya* sp.) are recorded as the most important nut used by Indians of North America at the time of contact. Several species of hickory are sweet and edible, although some are bitter. The nuts were usually harvested in the fall when the outer husks dried and split. During prehistoric times, competition with animals was likely and the nuts probably were collected early. Nuts usually were shelled by crushing, often using two rocks. Wooden mortars were used historically for processing large quantities of hickory nuts. After the nuts were crushed, they were usually placed in boiling water. Most of the shell fragments would sink to the bottom, while the nutmeats would float or be held in suspension. The nutmeats could then be skimmed off and used immediately or dried for storage. Many ethnographic sources suggest that hickory nut oil and "milk" were the desired product. The pulverized nuts were placed in slowly boiling water for a long period of time. The oil from the nutmeats (hickory butter) would separate and float to the surface where it was skimmed off and stored for later use. The rest of the nutmeats would dissolve into a milky fluid (hickory milk) that was drunk or used as stock for soup. Hickory sap can be used like maple sap. Hickory nuts contain approximately three percent water, 13 percent protein, 69 percent fat, and 13 percent carbohydrate. The various species of edible hickories are found in a variety of habitats including rich moist soils of bottomland woods, dry to moist upland woods, alluvial floodplains of major streams, slightly acidic soils, dry ridges, and well-drained hillsides. Hickory trees found in Indiana include *C. ovata* (shagbark hickory), *C. tomentosa* (mockernut hickory), *C; laciniosa* (shellbark hickory), *C. glabra* (pignut hickory), *C. ovalis* (oval pignut), and *C. cordiformis* (butternut hickory). Hickories are noted to have been a common element of Indiana forests (McGee 1984:265; Munson 1984:338; Peterson 1977:190; Reidhead 1981:189-192; Talalay, et al. 1984:338-359).

Poaceae (Grass Family)

Members of the Poaceae (grass) family, such as *Elymus* (rye grass), *Achnatherum* (ricegrass), *Panicum* (panic-grass) and *Phalaris caroliniana* (maygrass), were used as a food resource by native groups. The seeds often were parched and ground into meal to make various mushes and cakes. The young shoots and leaves might have been cooked as greens. Grass stems also are reported to have been used for baskets, mats, etc. Grass seeds ripen during the summer and fall (Fernald 1950; Medsger 1966:128-129; Reidhead 1981:238).

Rubus (Raspberry Group)

The *Rubus* (raspberry) group includes blackberry, cloudberry, dewberry, salmonberry, thimbleberry, wineberry and yellowberry. The plant produces a compound fruit which was frequently eaten fresh by Indians. Berries also were used as sweeteners (Goddard 1978). The fruits also can be dried for storage (Harrington 1967:273-275). Angell (1981:40) notes that raspberries can be eaten either raw or cooked, and that certain species of raspberry which tend to be sour and dry can be improved by cooking.

Sambucus (Elderberry)

Sambucus (elderberry) is a shrub that can grow up to 13 feet tall with tiny, spherical, juicy, seedy berries that ripen from late summer to fall. The berries are usually purplish-black, but can be red, blue, and purple. Berries can be eaten fresh, but most often are cooked or dried for future use. They are high in vitamin C, beta carotene, potassium, thiamine, calcium, niacin, and phosphorus. The roots, inner bark, leaves, berries, and flowers were used medicinally. A flower tea was taken internally to treat fevers, colds, flu, asthma, and stomachaches, or used externally to soothe sunburn, as an eyewash, and to treat swellings and rashes. The berries are diuretic, detoxifying, astringent, and diaphoretic. Native peoples are reported to have made flute-like whistles from pithy twigs and branches, and arrows from aged, straight stems. *Sambucus* plants often grow in large, dense stands in moist, rich soil. They can be found in marshes, along riverbanks and streams, in thickets, moist woods, mountains, and roadside ditches (Angell 1981:210-212; Brill and Dean 1994:103-105; Hutchens 1991:114-117; Medsger 1966:82-83; Peterson 1977:18, 172).

Charcoal

Charcoal recovered from archaeological samples most often represents use of that type of wood as firewood; however, several trees and shrubs were exploited for edible, medicinal, and utilitarian resources, as well as wood for fuel. The presence of charcoal indicates that the trees and shrubs represented were present at the time of occupation. If these resources were present and collected as fuel, it also is possible that they were exploited for other purposes as well.

Pinus **(Pine)**

All species of *Pinus* (pine) produce edible nuts, although some are better than others. Pine was an important medicinal resource for American Indians. Pine pitch was used to draw out splinters, slivers, and boils, as well as treat rheumatism, broken bones, cuts, bruises, sores, and inflammations. A tea was made from pine twigs to treat kidney and lung ailments or used as an emetic. A bark and/or leaf tea was used for coughs, colds, sore throats, and lung ailments. Needles are noted to be rich in vitamins A and C. Pine wood was used for fuel and construction material. Pine was valued as a fuel source because the pitch would readily start the wood burning, even if it was wet (Angier 1978:195-196; Erichsen-Brown 1979:1-6; Gallagher 1977:113; Peterson 1977:166).

Quercus **(Oak)**

Acorns (*Quercus*) are noted to have been a food source for aboriginal groups in North America. Acorns have a high degree of tannic acid, which must be removed in order to be palatable. Acorns were parched, then immersed or buried whole, with or without the shell, for a long period of time. The moisture diluted or dissolved the tannin. Tannin also was removed by leaching, which involved pulverizing the shelled, parched acorn meats and soaking the acorn meal in running or frequently changed water, or boiling the ground meal in several changes of water. Wood ash could be added to the boiling water to help neutralize the tannin. The leached meal was most commonly baked into a cake or pancake. The meal also was made into a gruel, porridge, or soup. The ground, roasted acorn shells were used to make a beverage similar to coffee. Oil also was extracted from acorns. Acorns have a high percentage of carbohydrates and relatively low percentages of protein, fat, and fiber.

Oaks are commonly divided into the white oak group and the black or red oak group. White acorns are relatively sweeter than black oak acorns. In the eastern United States, white oak acorns are generally available from mid-September to late November. White oak acorns require less processing, but are more rapidly eaten by mammals, birds, and insects. Black oak acorns are more bitter and often are available from late September to mid-February. Black oak acorns tend to have a higher percentage of fat and a lower percentage of carbohydrates than white oak acorns. Black oak acorns also provide more calories per 100 grams. Oak wood is very hard, heavy, and strong. It was valued as firewood because the hard wood would burn slowly, and a large log could burn all night. Oaks are distinctive deciduous or evergreen, hardwood shrubs to large trees found in dry to moist ground in many different habitats (Gallagher 1977:113; Kirk 1975:104-106; Munson 1984:468; Petruso and Wickens 1984:360-378).

DISCUSSION

The Rogers Site, exhibiting evidence of Early to Late Woodland occupations, is located northwest of Sherburne in Chenango County, New York. It is situated at the edge of a gravel terrace in the Chenango River valley. Local vegetation currently consists of a hemlock (*Tsuga*) tree farm, with very little understory vegetation. Adjacent areas consist of field grasses, and a plowed cornfield is found north of the site. Macrofloral samples were recovered from seven features or possible features.

Feature 1 was discovered in the southwest corner of Unit 3 in Level 3. Only the northeast portion of the feature was present in the unit. This feature might represent a tree tip feature or a possible pit with tree and/or rodent disturbance. Sample 8 was collected from the feature fill (Table 1). This sample contained nine charred *Rubus* seeds and five charred *Rubus* seed fragments, suggesting that raspberries/blackberries might have been utilized by the site occupants (Table 2, Table 3). A few fragments of charred vitrified tissue and charred bark also were present. Vitrified material has a shiny, glassy appearance due to fusion by heat. Charred vitrified tissue might represent charcoal or other charred plant tissue too vitrified for identification. Several uncharred seeds and a few rootlets represent modern plants. The charcoal record was dominated by *Platanus*, with smaller amounts of *Acer* and *Ulmus* charcoal present. Sycamore, maple, and elm wood might have been burned as fuel by the site occupants. A few pieces of unidentified hardwood charcoal and charcoal too vitrified for identification also were present. A few lithic flakes indicate the presence of cultural material in this area and reflect tool manufacture/maintenance. In addition, the sample contained a shell fragment and numerous sclerotia. Sclerotia are commonly called "carbon balls". They are small, black, solid or hollow spheres that can be smooth or lightly sculpted. These forms range from 0.5 to 4 mm in size. Sclerotia are the resting structures of mycorrhizae fungi, such as *Cenococcum graniforme*, that have a mutualistic relationship with tree roots. Many trees are noted to depend heavily on mycorrhizae and may not be successful without them. "The mycelial strands of these fungi grow into the roots and take some of the sugary compounds produced by the tree during photosynthesis. However, mycorrhizal fungi benefit the tree because they take in minerals from the soil, which are then used by the tree" (Kricher and Morrison 1988:285). Sclerotia appear to be ubiquitous and are found with coniferous and deciduous trees including *Abies* (fir), *Juniperus communis* (common juniper), *Larix* (larch), *Picea* (spruce), *Pinus* (pine), *Pseudotsuga* (Douglas fir), *Acer pseudoplatanus* (sycamore maple), *Alnus* (alder), *Betula* (birch), *Carpinus caroliniana* (American hornbeam), *Carya* (hickory), *Castanea dentata* (American chestnut), *Corylus* (hazelnut), *Crataegus monogyna* (hawthorn), *Fagus* (beech), *Populus* (poplar, cottonwood, aspen), *Quercus* (oak), *Rhamnus fragula* (alder bush), *Salix* (willow), *Sorbus* (chokecherry), and *Tilia* (linden). These forms originally were identified by Dr. Kristiina Vogt, Professor of Ecology in the School of Forestry and Environmental Studies at Yale University (McWeeney 1989:229-230; Trappe 1962).

Feature 2 is a hearth/fire pit located in the northern half of Units 2 and 5 at a depth of 111 cm below the ground surface. This feature yielded a conventional radiocarbon date of 1950 $\pm$ 40 BP, with a calibrated age range of 990-1820 BP (Beta-221610). Sample 1 was taken from fill in the southeast portion of the feature in Unit 5. Two small charred probable *Carya* nutshell fragments suggest processing of hickory nuts. A charred Poaceae caryopsis fragment and a charred *Sambucus* seed fragment suggest that small-grained grass seeds, such as *Phalaris* (maygrass), and elderberries also were utilized. The sample also contained three charred fragments of vitrified tissue, unidentified uncharred seeds from modern plants, a moderate amount of rootlets, and sclerotia. The charcoal record consisted mainly of unidentifiable charcoal fragments. A few small fragments of *Quercus* and *Ulmus* charcoal suggest burning oak and elm wood as fuel. Numerous insect chitin fragments were present, indicating subsurface disturbance from insect activity in this area.

Macrofloral sample 2 was recovered from fill in the northern half of Feature 4, a small, truncated fire pit or possible burned tap root located in Unit 4, Level 4. A conventional radiocarbon date of 2380 ± 50 BP and a calibrated age range of 2500-2330 BP (Beta-221612) reflect an Early Woodland occupation. Sample 2 yielded a small, charred probable *Carya* nutshell fragment, again suggesting processing of hickory nuts. *Ulmus* dominated the charcoal record, with smaller amounts of *Acer*, *Platanus*, Unidentified R (a hardwood), and charcoal too vitrified for identification. The sample also contained a few lithic flakes, an insect chitin fragment, a few uncharred seeds and rootlets from modern plants, and a few sclerotia. Recovery of a charred probable hickory nutshell fragment, four different types of charcoal, and a few lithic flakes suggests that this feature contains cultural material and does not represent a burned tap root.

Feature 5 consists of the northern half of a possible storage/fire pit located in the southern portion of Unit 7, Level 4. This feature yielded a conventional radiocarbon date of 2470 ± 40 BP, with a calibrated age range of 2730-2360 BP (Beta-221613), reflecting an Early Woodland occupation. The eastern half of fill was collected as macrofloral sample 3. This sample contained several charred Juglandaceae nutshell fragments, reflecting processing of hickory nuts and/or walnuts. An uncharred *Portulaca* seed and a few uncharred rootlets represent modern plants. The charcoal record consisted of *Quercus* - *Leucobalanus* group and vitrified *Quercus*. A member or members of the white oak group appear to have been burned as fuel.

Features 6, 7, and 8 were discovered in the long Test Trench. Feature 6 is a possible storage/fire pit bisected by the backhoe located in the southern portion of the trench at N4.75/E1.85. A conventional radiocarbon date of 850 ± 40 BP and a calibrated age range of 900-810 BP (Beta-221614) indicate use during the Late Woodland period. Sample 4 represents the entire fill from Feature 6. The charcoal record consisted of *Platanus*, indicating that sycamore wood was burned. A few lithic flakes indicate tool manufacture/maintenance. Several types of uncharred seeds and a few roots and rootlets represent modern plants. Recovery of two insect chitin fragments reflects minimal subsurface disturbance from insect activity in this area.

Feature 7 is a deflated hearth or fire feature found north of Feature 6 at N12.20/E0.90. A conventional radiocarbon date of 760 ± 40 BP and a calibrated age range of 740-660 BP (Beta-221615) reflect a Late Woodland occupation. Samples 5 and 6 were collected from fill in the southern half of the feature. These samples both contained an abundance of *Acer* and *Platanus* charcoal, indicating that maple and sycamore wood were burned as fuel. Sample 5 yielded a charred *Rubus* seed and seed fragment, suggesting use of raspberries/blackberries. Two charred Unidentified S seeds in sample 6 are similar to seeds from members of the Solanaceae (nightshade family). Both samples contained a few lithic flakes, a few fossil marine shells, a moderate amount of insect chitin fragments, several types of uncharred seeds from modern plants, a few rootlets, and sclerotia.

Sample 7 was recovered from fill of Feature 8, an irregular-shaped, probable non-cultural tree burn in the northern portion of the Test Trench at N69.0/E0.90. A conventional radiocarbon date of 350 ± 60 BP (Beta-221616) was returned for this feature. Sample 7 contained three charred *Rubus* seeds, a partially charred *Rubus* seed, three charred *Sambucus* seeds, and two charred unidentified seed fragments. Several types of uncharred seeds and a few rootlets represent modern plants. The charcoal record was dominated by *Pinus*, including partially charred and vitrified *Pinus*. A few fragments of *Platanus* and *Ulmus* charcoal also were present. One small lithic flake indicates that this area does contain some cultural remains. The sample also yielded fossil marine shell and shell casts, a few insect chitin fragments, a charred rodent fecal pellet, a single snail shell, and a few sclerotia. Feature 8 might represent an area where a pine tree burned; however, it also appears to contain some cultural remains. Charred *Rubus* and *Sambucus* seeds suggest that raspberries/blackberries and elderberries were processed, while *Platanus* and *Ulmus* charcoal suggest that sycamore and elm wood were burned as fuel.

SUMMARY AND CONCLUSIONS

Macrofloral analysis was conducted on the fill from seven features at the Rogers site in Chenango County, New York. Features 2, 4, and 5 yielded radiocarbon dates suggesting that these features represent the Early Woodland occupation of the site. The macrofloral record from these features reflects processing of hickory nuts and possibly walnuts. Feature 2 also yielded charred macrofloral evidence suggesting use of small-grained grass seeds and elderberries. Maple, sycamore, oak (including a member or members of the white oak group), elm, and another type of hardwood were burned as fuel. A few lithic flakes in Feature 4 suggest tool manufacture/maintenance activities.

Features 6 and 7 represent Late Woodland occupations of the site. Charred raspberry/blackberry and unidentified seeds were present in Feature 7. Sycamore wood was burned in Feature 6, while both maple and sycamore wood were burned in Feature 7. These features also contained a few lithic flakes, indicating the presence of cultural material.

The undated Feature 1 contained several charred *Rubus* seeds and seed fragments, suggesting that raspberries/blackberries were utilized. Maple, sycamore, elm, and an unidentified hardwood appear to have been burned as fuel. A few lithic flakes reflect the presence of cultural material, as well as tool manufacture/maintenance.

Feature 8 is believed to represent a non-cultural tree burn. Recovery of pine charcoal, including partially charred and vitrified charcoal, support an interpretation that a pine tree burned in this area. However, the presence of charred raspberry/blackberry and elderberry seeds, a few fragments of sycamore and elm charcoal, and a small lithic flake suggest that this area also contains cultural remains.

In general, charred macrofloral remains recovered from the Rogers site reflect occupation in the late summer/fall months, when raspberries/blackberries, elderberries, many types of grass seeds, and hickory nuts and walnuts are available. Trees growing in or near the site vicinity appear to have included maple, sycamore, oak, elm, and other types of hardwoods. The presence of pine charcoal only in Feature 8, believed to represent a tree burn, suggests that a pine tree grew in this area, while recovery of charred seeds and a lithic flake suggests that this might have been a cultural feature. Pines might have been growing in the area, but they do not appear to have been chosen as a fuel resource by the Woodland site occupants.

TABLE 1
PROVENIENCE DATA FOR SAMPLES FROM THE ROGERS SITE, NEW YORK

Sample No.	Feature No.	Unit	Depth	Feature Description	Radiocarbon Date	Analysis
8	1	3	Level 3 50-66 cmbd	Fill from a possible tree root or a pit with tree and/or rodent disturbance		Macrofloral
1	2	2/5	111 cmbgs	Fill from the southeast portion of a hearth/fire pit	1950 ± 40 BP Cal 990-1820 BP (Beta-221610)	Macrofloral
2	4	9	Level 4 34-46 cmbd	Fill from the northern portion of a small truncated fire pit or possible burned tap root	2380 ± 50 BP Cal 2500-2330 BP (Beta-221612)	Macrofloral
3	5	7	Level 4 41-48 cm	Fill from the northeast portion of a possible storage/fire pit	2470 ± 40 BP Cal 2730-2360 BP (Beta-221613)	Macrofloral
4	6		37 cmbgs	N4.75/E1.85; Entire fill from a possible storage/ fire pit in Test Trench	850 ± 40 BP Cal 900-810 BP (Beta-221614)	Macrofloral
5	7		43 cmbgs	N12.20/E0.90; Fill from the southern portion of a deflated hearth or fire feature in Test Trench	760 ± 40 BP Cal 740-660 BP (Beta-221615)	Macrofloral
6						Macrofloral
7	8		41 cmbgs	N69.0/E0.90; Fill from a probable non-cultural tree burn in Test Trench	350 ± 60 BP Cal 520- 290 BP (Beta-221616)	Macrofloral

TABLE 2 (Continued)

TABLE 2
MACROFLORAL REMAINS FROM THE ROGERS SITE, NEW YORK

Sample No.	Identification	Part	Charred W	Charred F	Uncharred W	Uncharred F	Weights/ Comments
8	Liters Floated						1.70 L
Feature 1	Light Fraction Weight						18.92 g
	FLORAL REMAINS:						
Unit 3	*Rubus*	Seed	9	5			
	Vitrified tissue ≥ 1 mm			9			0.03 g
	Vitrified tissue < 1 mm			X			Few
	Bark			X			Moderate
	Atriplex	Seed			1		
	Chenopodium	Seed			2	1	
	Oxalis	Seed			1		
	Silene	Seed			1	2	
	Stellaria	Seed			1	1	
	Trifolium	Seed			16		
	Rootlets					X	Few
	Sclerotia				X	X	Numerous
	CHARCOAL/WOOD:						
	Total charcoal ≥ 2 mm						0.33 g
	Acer	Charcoal		5			0.03 g
	Platanus	Charcoal		17			0.15 g
	Ulmus	Charcoal		1			<0.01 g
	Unidentified hardwood	Charcoal		5			0.01 g
	Unidentifiable - vitrified	Charcoal		2			0.02 g
	NON-FLORAL REMAINS:						
	Flake ≥ 2 mm					5	
	Flake < 2 mm					X	Few
	Rock/Gravel					X	Moderate
	Shell					1	
1	Liters Floated						1.50 L
Feature 2	Light Fraction Weight						18.75 g
	FLORAL REMAINS:						
Unit 2	cf. *Carya*	Nutshell		2			0.01 g
	Poaceae	Caryopsis		1			

TABLE 2 (Continued)

Sample No.	Identification	Part	Charred W	Charred F	Uncharred W	Uncharred F	Weights/ Comments
	Sambucus	Seed		1			
	Vitrified tissue			3			<0.01 g
	Unidentified P	Seed			8		
	Rootlets					X	Moderate
	Sclerotia				X	X	Moderate
	CHARCOAL/WOOD:						
	Total charcoal ≥ 2 mm						0.18 g
	Quercus	Charcoal		2			0.01 g
	Ulmus	Charcoal		2			0.01 g
	Unidentifiable - vitrified	Charcoal		1			<0.01 g
	Unidentifiable	Charcoal		15			0.08 g
	NON-FLORAL REMAINS:						
	Insect	Chitin				105	
	Rock/Gravel					X	Moderate
	Shell					1	
2	Liters Floated						1.50 L
Feature 4	Light Fraction Weight						14.73 g
	FLORAL REMAINS:						
Unit 9	cf. *Carya*	Nutshell		1			0.01 g
	Phytolacca americana	Seed				3	
	Rubus	Seed			2		
	Rootlets					X	Few
	Sclerotia				X	X	Few
	CHARCOAL/WOOD:						
	Total charcoal ≥ 2 mm						0.35 g
	Acer	Charcoal		3			0.03 g
	Platanus	Charcoal		1			0.01 g
	Ulmus	Charcoal		21			0.18 g
	Unidentified R	Charcoal		4			0.06 g
	Unidentifiable - vitrified	Charcoal		1			0.03 g
2	NON-FLORAL REMAINS:						
Feature 4	Flake ≥ 2 mm					5	
	Flake < 2 mm					X	Few
	Insect	Chitin				1	
	Rock/Gravel					X	Moderate

TABLE 2 (Continued)

Sample No.	Identification	Part	Charred W	Charred F	Uncharred W	Uncharred F	Weights/ Comments
3	Liters Floated						0.25 L
Feature 5	Light Fraction Weight						21.72 g
	FLORAL REMAINS:						
Unit 7	Juglandaceae ≥ 2 mm	Nutshell		10			0.23 g
	Portulaca	Seed			1		
	Rootlets					X	Few
	Sclerotia				X	X	Few
	CHARCOAL/WOOD:						
	Total charcoal > 2 mm						2.36 g
	Quercus - *Leucobalanus* group	Charcoal		25			0.88 g
	Quercus - vitrified	Charcoal		15			0.36 g
	NON-FLORAL REMAINS:						
	Rock/Gravel					X	Few
4	Liters Floated						0.25 L
Feature 6	Light Fraction Weight						19.96 g
	FLORAL REMAINS:						
Test Trench	*Chenopodium*	Seed			1	1	
	Lamiaceae	Seed			1		
	Oxalis stricta	Seed			2		
	Poaceae	Floret					
	Portulaca	Seed			1		
	Rubus	Seed				1	
	Silene	Seed			1		
	Stellaria	Seed			1		
	Roots					X	Few
	Rootlets					X	Few
	Sclerotia				X	X	Few
	CHARCOAL/WOOD:						
	Total charcoal ≥ 2 mm						2.30 g
	Platanus	Charcoal		40			0.98 g
4	NON-FLORAL REMAINS:						
Feature 6	Flake ≥ 2 mm					1	
	Flake < 2 mm					X	Few
	Insect	Chitin				2	

TABLE 2 (Continued)

Sample No.	Identification	Part	Charred W	Charred F	Uncharred W	Uncharred F	Weights/ Comments
	Rock/Gravel					X	Few
5	Liters Floated						1.00 L
Feature 7	Light Fraction Weight						36.71 g
	FLORAL REMAINS:						
Test Trench	*Rubus*	Seed	1	1			
	Brassicaceae	Seed			1		
	Lamiaceae	Seed				1	
	Oxalis	Seed			2		
	Stellaria	Seed			1		
	Trifolium	Seed			6		
	Rootlets					X	Few
	Sclerotia				X	X	Moderate
	CHARCOAL/WOOD:						
	Total charcoal > 2 mm						8.17 g
	Acer	Charcoal		10			0.68 g
	Platanus	Charcoal		30			1.44 g
	NON-FLORAL REMAINS:						
	Flake ≥ 2 mm					1	
	Flake < 2 mm					X	Few
	Fossil marine shell					5	
	Insect	Chitin				89	
	Rock/Gravel					X	Moderate
6	Liters Floated						1.00 L
Feature 7	Light Fraction Weight						32.60 g
	FLORAL REMAINS:						
Test Trench	Unidentified S	Seed	2				
	Chenopodium	Seed				1	
	Phytolacca americana	Seed			1	1	
	Portulaca	Seed			2		
	Rubus	Seed			1		
	Stellaria	Seed			2		
	Rootlets					X	Few
	Sclerotia				X	X	Few
	CHARCOAL/WOOD:						
	Total charcoal > 2 mm						7.59 g

TABLE 2 (Continued)

Sample No.	Identification	Part	Charred W	Charred F	Uncharred W	Uncharred F	Weights/ Comments
	Acer	Charcoal		20			0.75 g
	Platanus	Charcoal		20			1.26 g
	NON-FLORAL REMAINS:						
	Flake ≥ 2 mm					3	
	Flake < 2 mm					X	Few
	Fossil marine shell				2	3	
	Insect	Chitin				57	
	Rock/Gravel					X	Moderate
7	Liters Floated						1.00 L
Feature 8	Light Fraction Weight						29.16 g
	FLORAL REMAINS:						
Test Trench	*Rubus*	Seed	3		12	51	
	Rubus	Seed	1 pc				
	Sambucus	Seed	3		2		
	Unidentified	Seed		2			
	Amaranthus	Seed			5	6	
	Brassicaceae	Seed			7		
	Chenopodium	Seed			4	5	
	cf. *Morus*	Seed			6	7	
	Oxalis	Seed			4		
	Phytolacca americana	Seed				1	
	Potentilla	Seed			2		
	Silene	Seed			1		
	Stellaria	Seed			1		
	Trifolium	Seed			8		
	Rootlets					X	Few
	Sclerotia				X	X	Few
	CHARCOAL/WOOD:						
	Total charcoal ≥ 2 mm						2.12 g
	Pinus	Charcoal		16			0.24 g
	Pinus	Charcoal		10 pc			0.16 g
	Pinus - vitrified	Charcoal		3			0.07 g
	Platanus	Charcoal		4			0.07 g
	Ulmus	Charcoal		7			0.13 g
	NON-FLORAL REMAINS:						

TABLE 2 (Continued)

Sample No.	Identification	Part	Charred W	Charred F	Uncharred W	Uncharred F	Weights/ Comments
	Flake					1	
	Fossil marine shell & shell casts					6	
	Insect	Chitin				11	
	Rock/Gravel					X	Moderate
	Rodent fecal pellet		1				
	Snail shell				1		

W = Whole
L = Liters
g = grams

F = Fragment
X = Presence noted in sample
pc = partially charred

TABLE 3
INDEX OF MACROFLORAL REMAINS RECOVERED FROM THE ROGERS SITE, NEW YORK

Scientific Name	Common Name
FLORAL REMAINS:	
Amaranthus	Pigweed, Amaranth
Atriplex	Saltbush, Shadscale
Brassicaceae	Mustard family
Silene	Catchfly
Chenopodium	Goosefoot
Carex	Sedge
cf. *Carya*	Hickory
Lamiaceae	Mint family
Morus	Mulberry
Oxalis	Wood sorrel
Oxalis stricta	Wood sorrel
Phytolacca americana	Pokeweed
Poaceae	Grass family
Portulaca	Purslane
Potentilla	Cinquefoil
Rubus	Raspberry, Blackberry, etc.

TABLE 3 (Continued)

Scientific Name	Common Name
Sambucus	Elderberry
Silene	Catchfly
Stellaria	Starwort
Trifolium	Clover
Vitrified tissue	Represents charred material with a shiny, glassy appearance due to fusion by heat
Sclerotia	Resting structures of mycorrhizae fungi
CHARCOAL/WOOD:	
Acer	Maple, Box elder
Pinus	Pine
Platanus	Sycamore
Quercus	Oak
Quercus - *Leucobalanus* group	White oak group - Species in the white oak group exhibit early wood vessels occluded with tyloses and longer rays than species in the red oak group
Ulmus	Elm
Unidentified hardwood	Wood from a broad-leaved flowering tree or shrub

TABLE 3 (Continued)

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Appendix F.

Geoarchaeological Report for the Rogers Prehistoric Site

Geoarchaeological Reconnaissance of the Rogers Archaeological Site, Rogers Environmental Center, near Sherburne, New York

by

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14 January 2005

for

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Problem Orientation

On 4 January 2005 I met with David Moyer to visit the Rogers Archaeological Site near Sherburne, Chenango County, New York to conduct a geoarchaeological reconnaissance of the site currently the focus of Phase III excavations by Birchwood Archaeological Services (Figure 1). The purpose of the visit was to address some of the stated research issues and goals for the excavation of this site (Moyer 2004), including placing the recovered artifacts into a broader geological context and addressing issues of archaeological site formation processes. It is the goal of all archaeological field work to ascertain whether or not the vertical and horizontal distributions of artifacts and features collected and observed during the course of the investigation still reflect the original patterns in which they were discarded and/or otherwise abandoned, or whether the distributions are in whole or in part the products of a host of post-depositional processes loosely if at all associated with prehistoric human activities. As discussed below, key issues requiring further resolution include those surrounding the nature of late Pleistocene and Holocene sedimentation and soil formation in the Chenango River valley, and recognition of the extent to which bioturbation, especially floralturbation, has impacted the soil profiles on the gravel terrace portion of the site where all of the artifacts recovered to date have been found.

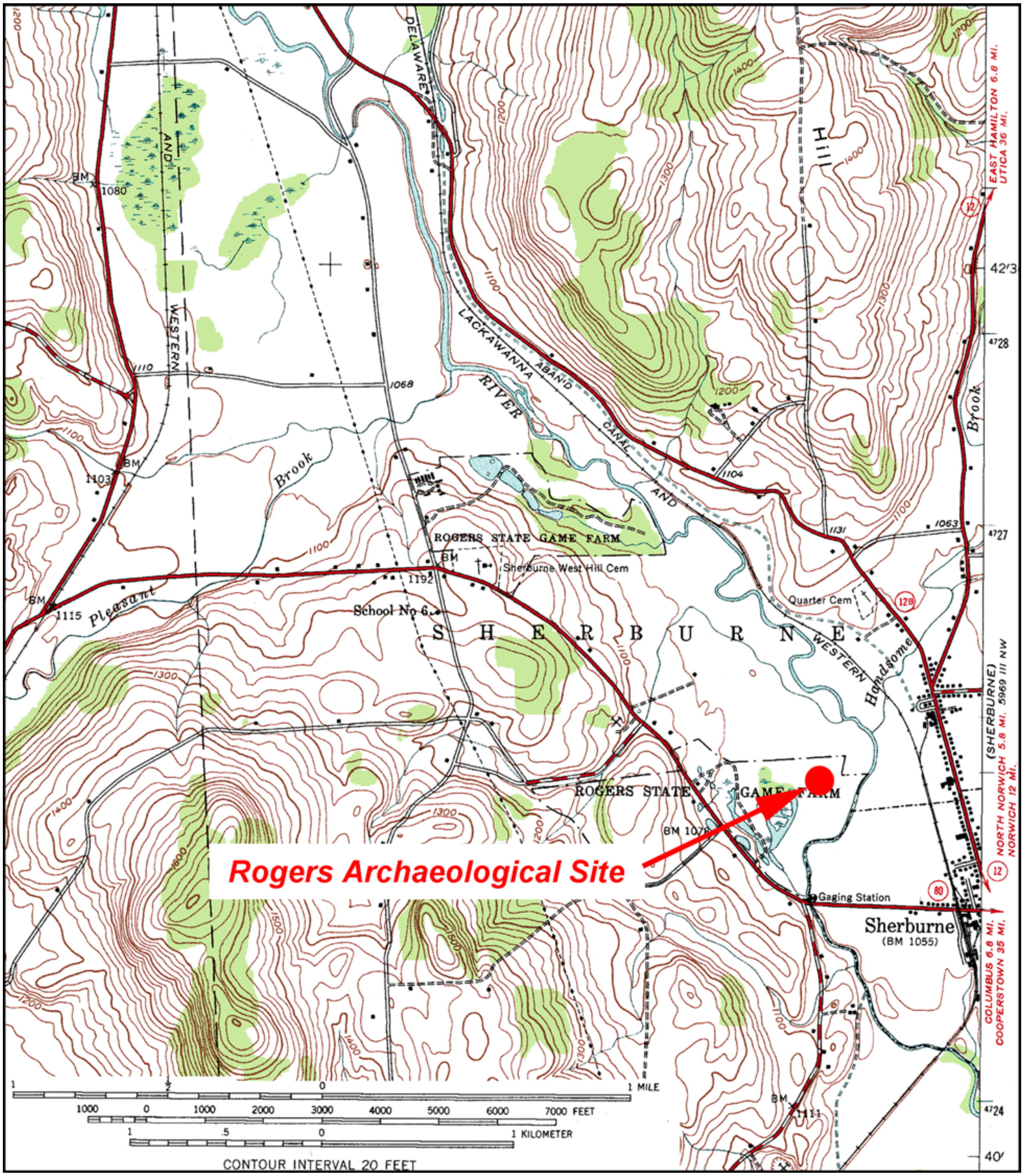

Figure 1. Portion of the Earlville (1943) USGS 7.5 minute topographic map showing the location of the Rogers archaeological site. Note also the location of the stream gauging station located just to the west of Sherburne.

Geological Background

Cadwell (1972, 1978, 1981) has proposed a step-wise model of Late Wisconsinan ice-retreat for the Chenango valley that involves his concept of "valley ice tongue" retreat. At any given moment of retreat, thicker ice within the valleys extended farther south than the equivalent retreatal line of the thinner upland ice (see model illustrated in Cadwell 1972:20 and 1981:Figure 5). Several retreatal ice marginal positions have been identified and mapped, all of them Late Wisconsinan and pre-dating the Valley Heads readvance. Some of the unique landform assemblages resultant from this kind of retreat that seem especially prominent in the Chenango (and other similarly orientated Susquehanna Basin valleys) include kames, kame terraces, and kamefields, built up against the valley ice tongues and the bedrock valley walls. Melting of the ice as it retreated, and the concomitant release of very large volumes of water with very high sediment yields, produced a chaotic stratigraphic situation involving gravels, sands and muds, and a flight of terrace surfaces as the river cut down and reworked and resorted the glacial deposits. Cadwell (1981:103) has also suggested that valley ice plugs stranded downstream may have acted as the dams behind which lacustrine clay and silt accumulated. The specific example given is a boring record for a well at the Norwich Pharmaceutical Company, where very thick deposits of silt and clay are overlain by gravel. This comment is made in reference to the mention in the field to the effect that the boring record for the well involved in this project (a record that I have not yet seen), indicates that clay is found at some distance below the surficial gravels at the site. Cadwell's model suggests that most if not all of the Pleistocene deposits in the Chenango Valley are Late Wisconsinan in age, with differences in lithologies reflecting stratigraphically complex relationships between different sedimentary facies and depositional environments.

During the initial wasting away of the ice, some of the ice blocks detached from the main body of ice would have been entrained as part of the transported load in the glaciofluvial sedimentary regime. Those blocks that became partially buried by sediment, and hence insulated from more rapid melting, probably took many hundreds if not thousands of years after their deposition to melt, creating surface depressions (kettle holes) and other topographic irregularities characteristic of some of the kamic surfaces. Many of these still retaining their surficial depressions have been only partially filled in with postglacial sediment. A radiocarbon date of 16,650 ± 180 RCYBP (BGS-86) on "organic material from a depth of 31 feet in kettle hole bog, 5 feet above gravel" in an upland setting near Chenango Forks, indicates that the ice (involved in one of the earlier retreatal positions) must have retreated to the north of this locale by this time (Cadwell 1972, 1978; Muller and Cadwell 1986).

Concentrations of clast-supported gravel now in terraced landforms are widely targeted for mining in the Chenango valley. These probably involve a number of different geomorphic surfaces, related to both the valley ice-tongue kinds of retreatal positions, as well as to the more continuous, lower elevation valley-train outwash deposits that later emanated from the Valley Heads moraine to the north. As long as water volumes and sediment loads remained very high, the Chenango was a large braided river system, composed of many actively moving bars and channels, with a broad bedload comprised predominantly of gravel and sand, with much of the mud being more effectively transported down basin. Eventually, when the water and sediment from the glacial ice system was shut off (by retreat to the north beyond the basin, and beyond the

Valley Heads), the Chenango likely would have undergone major river metamorphosis to a non-braided, more “modern” Holocene regime (meandering and anastomosed systems). The timing of this transformation is open to speculation. Cadwell (1978:278) cites a radiocarbon date of 10,990 ± 970 RCYBP (GX-2717) on “a mastodon jawbone found in Valley Heads valley train near Hamilton, New York”, but assignment of this date to deposits of Valley Heads outwash (and not to younger alluvial deposits) now seems problematical, given that ice had retreated far to the north by this time, as did most if not all of proglacial lake drainage. The date does suggest, however, that it may be possible to work out in greater detail the terminal Pleistocene and early Holocene sequence of river evolution for the upper reaches of the Chenango Valley.

Little is known about the timing and nature of latest Pleistocene and early Holocene river history in the Susquehanna Basin. There are two areas that are relatively close to the Rogers Site that have received intensive study: the lower Unadilla and adjoining Susquehanna Rivers (Scully 1977, Scully and Arnold 1979, 1981), and a bit farther away, the Susquehanna River sites studied over the course of a number of years by Funk (1993, 1998; Kirkland and Funk 1979). Of the 22 radiocarbon dates from alluvial contexts reported by Scully (1977:Table 3), only 2 are early Holocene or older in age (>7,000 RCYBP). Likewise, only 21 of the 144 radiocarbon dates listed by Funk (1993:158–171) are this old, with a full 15 of these recovered from the Russ Locus 2 and Johnsen No. 3 sites (Dineen 1993:Figure 11). That most of the floodplain areas of these two studied reaches are late Holocene in age is probably related to the size of the rivers involved; other things being equal, relatively large rivers have greater capacity to remove the sediments they are temporarily storing, and consequently have eroded away more of the older sediments. Recent work in the Schoharie Basin suggests that earlier sediments are more likely to be found along the lower gradient reaches of the smaller tributary streams within the basins drained by mid- to large-sized rivers (Basa and Van Nest 2004).

The Upper Susquehanna geoarchaeological data set is undoubtedly the largest set for New York and therefore it is of great value, but unfortunately these sites lack observations on soils. Scully’s exemplary study provides a working soil-geomorphological model for floodplain evolution (Figure 2) that, if not in exact details, is likely to be broadly applicable to the situation at the Rogers Site. It is noteworthy that the Rogers Site is situated relatively high up in the drainage network, and that known late Pleistocene deposits dating to ca. 11,000 RCYBP occur in a relatively low-lying landscape position just to the north, near Hamilton (the mastodon date mentioned above). These facts alone strongly suggest that deposits of this poorly known time period (late Pleistocene / early Holocene) have a high probability of existing at or near the Rogers Site, and elsewhere along this portion of the Chenango valley.

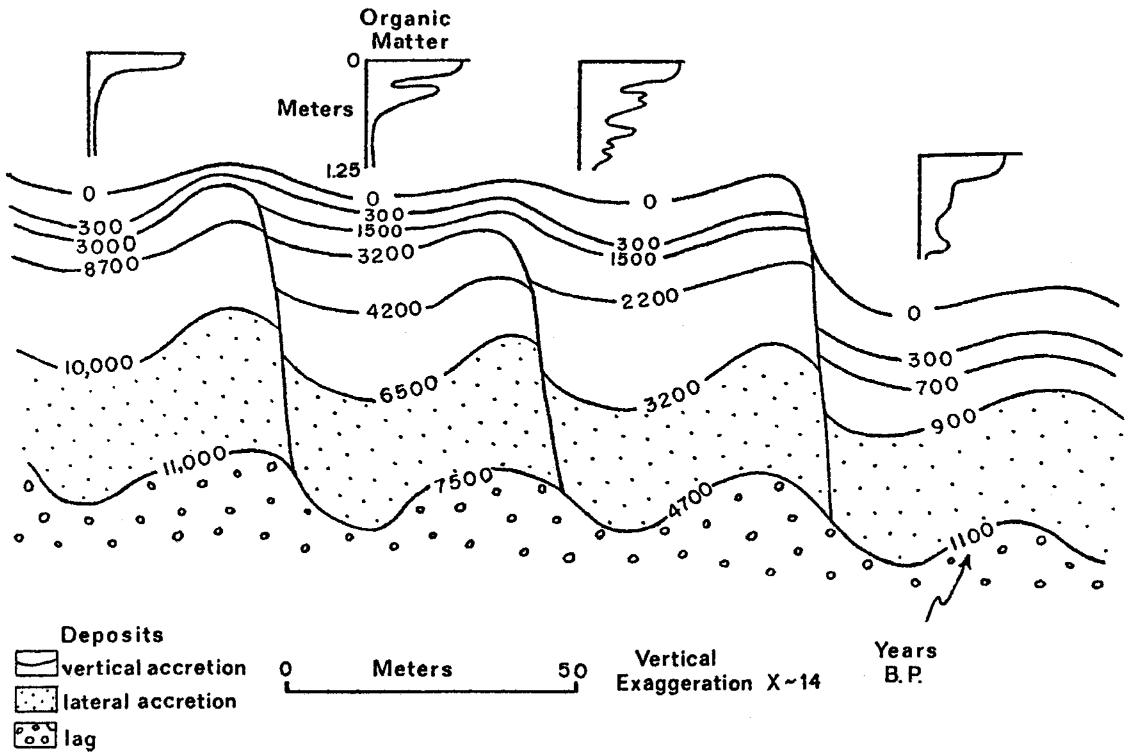

Figure 3. Model of formation of a floodplain of nearly constant height but of varying age, with recent accelerated deposition, and the resultant distributions of organic matter in the top 1.25 m.

Figure 2. Scully's (1977:11) model of floodplain evolution for the lower Unadilla and adjoining Susquehanna Rivers in Chenango County, New York. Note how there is little or no surficial expression of sedimentary packages with widely varying ages. Note also the presence of veneer deposits. The age of the alluvium, of course, is a major factor in the kinds of soils encountered, as is the style of floodplain sedimentation. Uncarbonized plant macrofossil materials are common in the basal sandy and gravelly bar facies that have become buried beneath overbank muds, and provide a means of dating the floodplain sediments.

Rogers Site Reconnaissance

Brief field reconnaissance shows that late Pleistocene Chenango River incision has left former braided floodplain surfaces elevated as terraces. Minimally there is at least one, and perhaps more, gravel-rich terrace(s) positioned at elevations below the kame terraces and other glaciogenic surfaces. As a specifically good example of a “kame terrace”, Cadwell (1972:36) lists the landform stretching from “1 mile south of Smyrna southward to Sherburne Corners”, on the Earlville sheet just to the west of the project area covered in Figure 1. A gravel pit on this surface lies at an elevation of about 1250 feet, while the Rogers site lies between the 1040–1060 foot topographic lines (USGS Earlville 7.5-minute topographic quadrangle). My field visit shows that the Rogers Site is clearly situated on a the edge of a gravel terrace with a well-defined scarp measuring (as a guess) 5–15 feet. The scarp is fairly steep and well-defined at the site, but in the field to the north it is more gently sloping and may involve a series of lowering levels, the lowest of which now evidently lies buried beneath Holocene muds. That this terrace could be so well-defined on the ground, but not show up at all on topographic maps, is a common situation everywhere, even on maps with 10-foot contours. Because of the short day light hours, there was little time left for a broader reconnaissance, but it does appear that the terrace upon which the Rogers site sits (or a closely related one) will be readily traceable northward as least as far as Randallsville, near Hamilton in Madison County.

In the valley segments adjoining the Rogers Site, the gravel terrace is readily separable from the Holocene floodplain on the basis of distinctive geomorphological expressions (Figure 3), and on the basis of existing soils data found in the County Soil Survey (Crandall 1986). The surface of the Rogers terrace is considerably more irregular than the flatter, lower lying floodplain. The terrace surface contains a number of large, linear to slightly curved topographically positive features (probably ancient bars) accentuated by intervening swales, typical of the surface of a braided system. In contrast, the Holocene surface has become increasingly flatter due to incremental mud deposition. Sedimentation rates of fine-grained overbank deposits are higher in the paleotopographic lows, and over the course of time, the whole floodplain surface aggrades upward to ultimately approximate a planar surface. The surficial features on the terrace were best seen from the ground, and are not particularly well-expressed in the presently available color infrared imagery (Figure 3), hence the recommendation below to obtain as much historical and current imagery as possible. However, this image does do a pretty good job in showing that the Holocene floodplain is comprised of multiple geomorphic surfaces that suggest the river has functioned both as a meandering and an anastomosed system. Probably the stream undergoes modest meandering during low flows, while changing to an anastomosed system during higher flows, with multiple channels operating in order to accommodate larger discharges. Geomorphic cross cutting relationships initially suggest that the particular meander bend that cuts the terrace at the Rogers site is probably older than much of the rest of the floodplain visible in Figure 3.

The gravel terrace(s) at and near the Rogers Site are also relatively well-defined by Soil Survey maps when the series are grouped by parent material (Figure 4, adapted from Crandall 1986). Gravelly soils are more-or-less confined to the geomorphologically defined terrace surfaces, while the Holocene floodplain contains parent materials comprised of muds (in this case, silt loams). The soil map of course reflects the very different sedimentary compositions of the different landforms (terrace and floodplain, and perhaps in the case of the village of

Figure 3. Portion of a color infrared image of the Chenango Valley near Sherburne, showing the location of the Rogers site. Image captured from the web site “New York State Interactive Mapping Gateway” at www1.nygis.state.ny.us).

Sherburne, a probable fluvial fan). Modern gravels in the current bedload of the stream are likely to be inherited from the older deposits, are confined more or less to the channel areas, and don’t appear on the soil maps because areally their spatial extent was not considered significant for mapping purposes. Gravel does comprise the bedload at the closest approach of the river to the site. All of the Holocene floodplain is almost certainly underlain by gravels of varying ages, as suggested by Scully’s model. The soil map is a particularly useful tool that shows the overall distribution of relatively thick Holocene overbank deposits, in this case, thicknesses great enough to result in soils whose sola are mostly if not entirely composed of silt loams. Like all remotely viewed data, the soil survey information always needs to be field-checked, especially at the small spatial scales at which archaeologists typically work, because studies have shown that at any given point within the map unit, there is only roughly about a 50-50 chance that the soil is in fact the named soil series (Wilding et al. 1994). None-the-less, the soil surveys are very useful for early phase investigations, and to provide initial coverage for relatively large areas. As an initial guess, it is suggested here that the Holocene floodplain is probably closely mapped in this case by the distribution of the soils with fine-grained parent materials (the shades of green in Figure 4). If this proves to be true, then the Rogers site is seen to straddle both Pleistocene and Holocene deposits, another clue that early Holocene deposits may be present in the site vicinity.

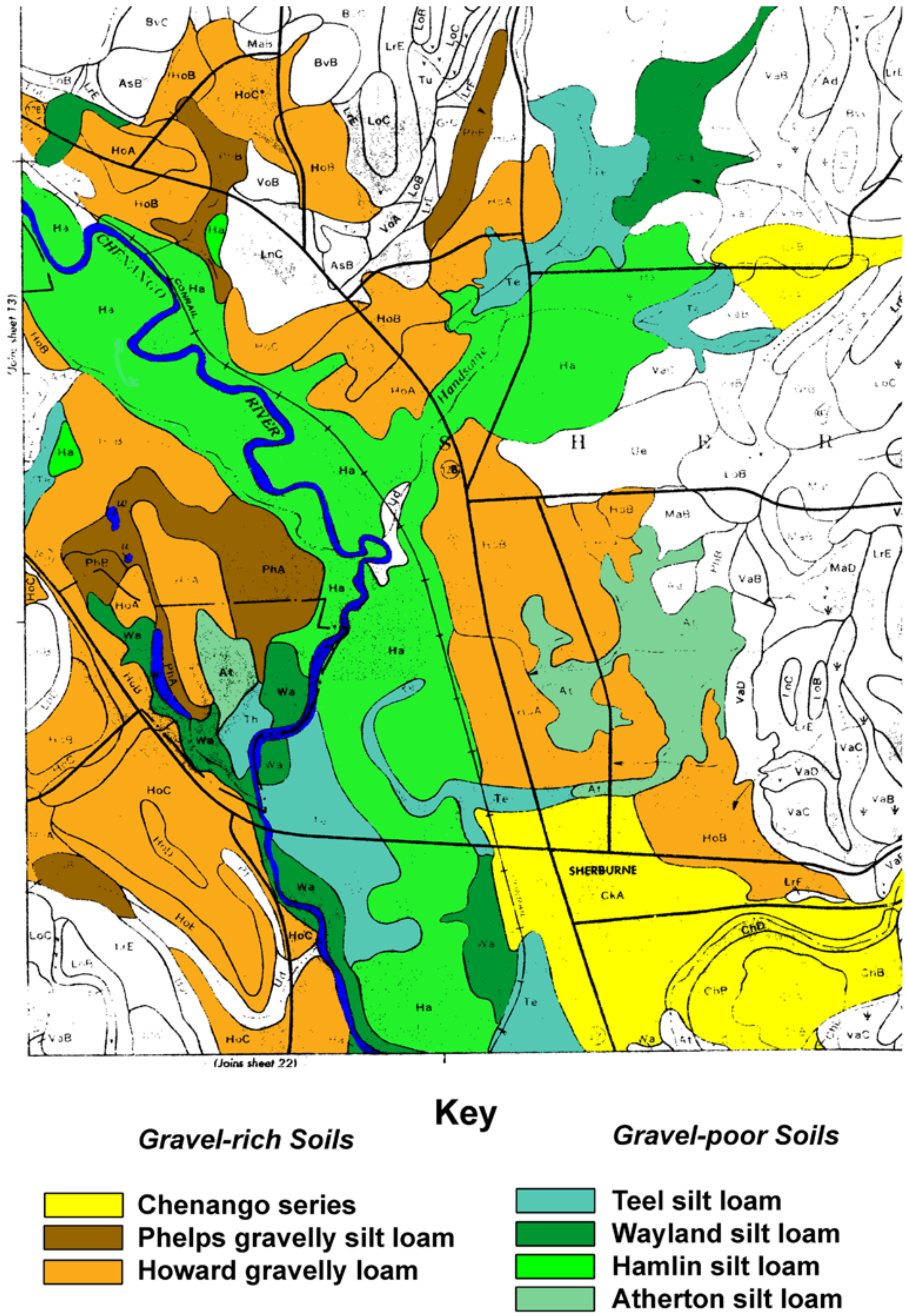

Figure 4. Portion of Sheet 14 of the Chenango County Soil Survey (Crandall 1986) with soil series grouped according to general parent materials. As a first approximation, it is suggested that the Holocene floodplains are largely represented by the silt loams. Whether or not some of the gravelly soils are also Holocene in age is a question that needs to be addressed by further field work; one obvious candidate is the Sherburne fan.

Site Formation Processes at the Rogers Site

A better understanding of how the Chenango River has responded to historic and prehistoric flood events will be critical to a full understanding of the site formation processes at the Rogers Site. In addition to more geological field work, this will require detailed topographic mapping of the site and some adjoining non-site areas with elevations accurate to at least to 5–10 cm. Data found on the web for the USGS stream gauge located just to the south of the Rogers Site (Chenango River at Sherburne) is available for the period of record 18 March 1936 to present. The web site lists a gage datum of 1,037 feet (to the nearest foot), with flood stage defined at 8.0 feet (or 1,045 feet; note also that the benchmark shown for Sherburne on Figure 1 is given as 1,055 feet). The highest discharge and stage records are given for 18 March 1936 (gauge height 10.60 feet, discharge of 12,500 cfs); because this is the very first record, there may be some problems with measurement compatibilities. Even so, this historic high is closely followed by the flood of January 19–20, 1996 (gauge height 10.47 feet; 8,000 cfs), and the flood of 6 March 1979 (gauge height 9.94 feet; discharge 10,400 cfs) (Lumia 1998:54).

It will be of further interest to see how the largest historic floods impacted the terrace surface at the Rogers site. Particularly useful information would be aerial coverage and other specific information, including any historic stage records (in addition to the discharge records available on the web), and oral accounts concerning the 1996 (and earlier) floods. While it seems quite likely that the Rogers Site surface was occasionally inundated, it still remains a stratigraphic question as to just how geologically significant these relatively rare events would have been at this particular locale. As described below, the soil profile suggests that at most only a very modest amount of mud may have been incorporated into the soils on the gravel surface, while nearly a meter of mud has accumulated in the adjoining Holocene floodplain.

<u>The Holocene Floodplain</u>. We explored the small portion of Holocene floodplain that lies within the project area by using a 2-inch diameter hand auger. From top to bottom, we found about 55 cm of brown mud (silty clay loam or silt loam), brown loam or sandy loam from 55–60 cm, more brown mud from 60–100 cm that grading with depth to gray sandy loam, which in turn abruptly overlay clast-supported gravel at about 125 cm. There were few or no granule or larger-sized clasts in the upper 125 cm.

Abundant uncarbonized plant macrofossil remains were found in the gray sandy loam just above the basal gravel at a surface depth of 120-125 cm. These detrital plant materials likely accumulated in the fine-grained facies of an otherwise coarse-grained bar. One of the best depositional models illustrating how and where alluvial plant macrofossils tend to accumulate was provided by Bluck (1971); also see Van Nest (1997) for Illinois examples from streams carrying cobble bedloads. Although the use of the auger destroyed important soil structural information, it seems likely that these deposits are prehistoric, and not historic, because this is a fair amount of fine overbank sediment lacking the well-defined strata one would expect if the sediment accumulated more rapidly, in a stream that is clearly generating a mixed sediment load (gravel, sand, and mud). But how old they are is open to speculation. It is recommended that the plant materials recovered be dated as soon as feasible. The date should closely approximate the time when the channel actively moving bedload was abandoned to another position.

The Gravel Terrace. In contrast to the modestly thick deposits of mud in the floodplain, the surface of the terrace at the Rogers site contains no obvious overbank deposits, and any muds that may have draped over this surface during large flood events has been completely incorporated into the soil solum, by the process of soil upbuilding (Riecken and Poetsch 1960) (Figure 6a). The profiles of two completed excavation units were available for examination during the field visit, while a third but very similar unit was still in progress. All the profiles are similar in containing clast-supported gravel deposits extending from the surface to the depth of excavation (at about 80 cm), and in containing relatively well-developed soil profiles with Ap-Bw (or possibly Bt)-B/C horizonation, broadly compatible with the mapping of the Phelps series at this locale (Crandall 1986).

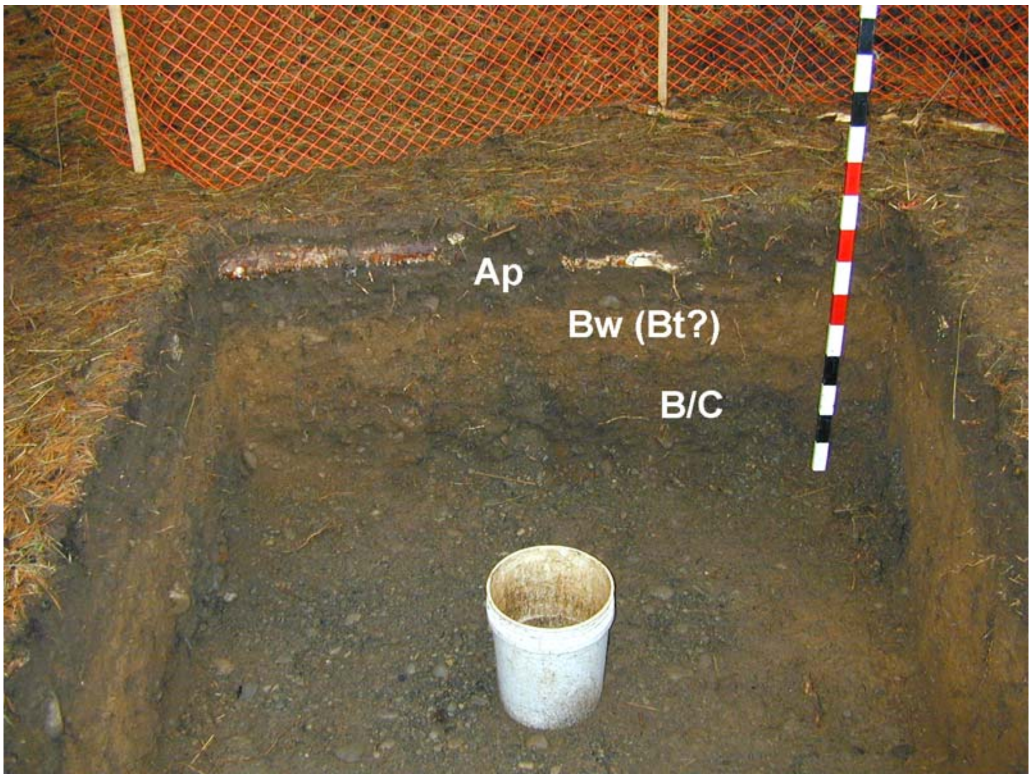

Figure 5. Soil profile exposed in one of the test excavation units at the Rogers archaeological site.

Initial examination suggested that the B horizon in these profiles is somewhat more finer-grained than deposits in the lower horizons. More detailed examination and acquisition of particle size data would help to elucidate the origin of the fine-grained fraction in the B horizon. This is of some importance, in as much as the presence of a Bt horizon suggests that the soil has minimally been forming several thousands of years (Bettis 1992), if not all of postglacial time. An alternative source for some or all of the fine-grained sediment is prehistoric overbank sedimentation, with pedogenic redistribution downward of the fine-grained fraction, potentially without the temporal inferences. Also, an additional complicating factor is the possibility that the original sedimentary sequence may have been one which fined upward. How sediment is added to soil profiles in alluvial settings, how artifacts become buried or commingled, how long these ephemeral surfaces are surfaces per se, are difficult-to-answer questions arising from a dynamic situation involving the interplay of relative rates of sedimentation and ongoing processes of soil formation (see for geoarchaeological examples, Ferring 1986, 1992). Figures 6b and 6c below are end-member situations; some of these or any of a number of possible intermediate situations may be applicable to the interpretation of the two landform areas of the Rogers site. Stratigraphic fieldwork is needed to understand the particular situation at the site.

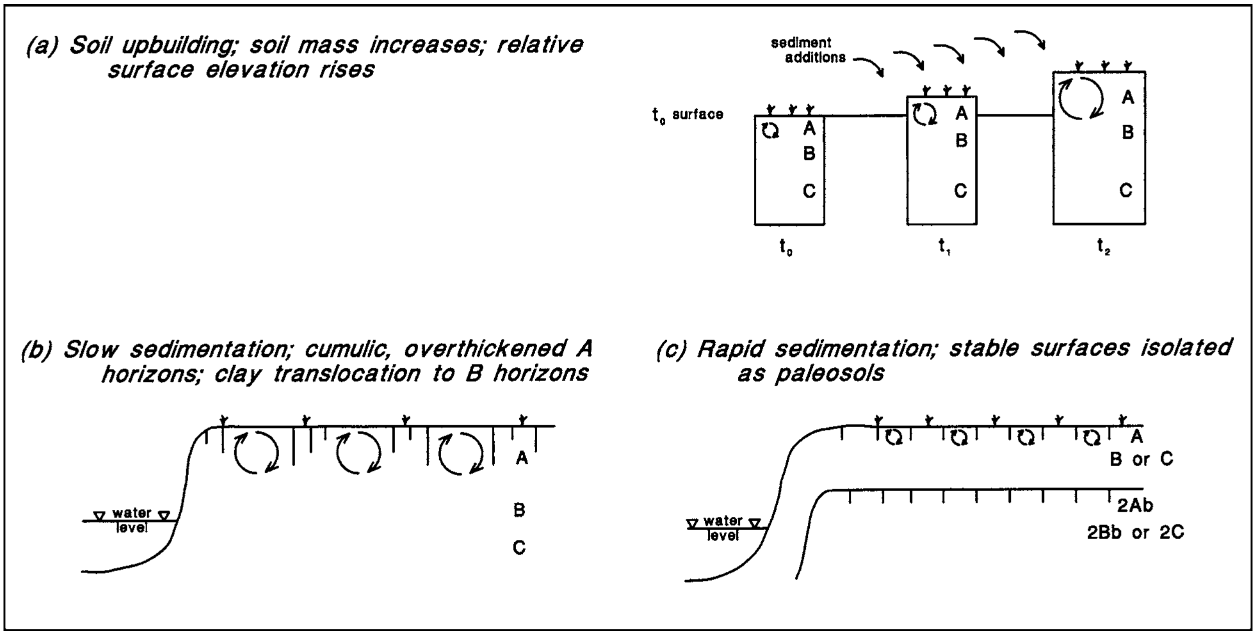

Figure 6. Sediment additions to soil profiles in floodplain settings. (a) The process of soil upbuilding. (b) Veneer sedimentation onto older surfaces results in upbuilt soil profiles. (c) Veneer sedimentation in thicknesses great enough to isolate soils as paleosols. Adapted from Van Nest (1997:Figure 23).

Soil Evolution at the Rogers Site. All soils are polygenetic, the relative importance of the many soil-forming processes having varied through time. Following the model of soil evolution proposed by Johnson and Watson-Stegner (1987), soils have formed via both progressive (P) and regressive (R) pathways, that is, S=f(P,R). Progressive pathways promote increased horizonation and chemical stability, while regressive pathways promote simplified profiles with less well-differentiated horizons; in general both are operating simultaneously, but with relative importances potentially if not probably changing with time. The soil evolution model is a great step forward in helping to think about and sort out the many post-depositional events that effect archaeological remains in and on the earth's surface (Johnson and Watson-Stegner 1990).

At the Rogers site, mechanical destruction of the upper portions of the soil has been accomplished by plowing during the Historic period. Both excavation units had well-defined plow zones characterized by a sharp, relatively planar lower boundary. The plow zone is also relatively dark-colored, suggesting that there has been substantial additions of agricultural amendments to the soil (fertilizers, manure, etc.). It seems likely that the plow zone A horizon is much thicker than the original A horizon would have been, so that the nature of the original A-

(E)-B soil horizons has been mechanically destroyed completely. Although we are left only with guesswork, it seems reasonable to suppose at this time that the original forest profile would have had A-E-B horizonation.

Floralturbation. Beneath the plow zone of the Rogers Site is ample evidence that the site has undergone extensive floralturbation, with what seem to be particularly well-expressed examples of tree-tip features in both of the examined units (Figure 7). A great deal has been written about how floralturbation influences soil formation, how it acts to “reset” the pedogenic clock, and how it otherwise disrupts other processes that result in the layered appearances of soil horizons (see for examples, Shaler 1892; Wood and Johnson 1978; Johnson and Watson-Stegner 1990; Schaetzl et al. 1990).

Figure 7. Two of the walls exposed in the southern test pit excavation at the Rogers Site. Note the highly irregular boundary between the B and C horizons, compared to the relatively planar lower surface of the Ap horizon. Note also that C horizon gravels extend almost to the surface just to the left of the scale bar. Scale bar divisions are 10 cm.

In the limited exposures available at the Rogers site, it was noted that upward extensions of C horizon materials are always coupled with downward extensions of B horizon materials, imparting a highly irregularly and wavy boundary between the B and C horizons. An important question is whether or not the features we can see now represent just one or a few events, or whether or not there have been many such events, and this just happens to be the one(s) most readily detectible. In Michigan, cradle-and-knoll microtopography produced by tree throw is known to persist for more than 1,000 years in at least one case (Schaetzl and Follmer 1990). At the Rogers Site, it is clear from stratigraphic relationships that the ones seen must be relatively young, post-dating the formation of A-(E)-Bw(t) soil horizonation, in order to so clearly show the displacements of the horizons. Likewise, the features must also predate the last episode of plowing, as the plow zone itself is not disrupted. Obviously the existing lines of evidence do not provide much aid in determining their age.

Presently a pine tree farm occupies the site. Ascertaining the pre-plow forest composition might be of considerable interest, in as much as certain edaphic conditions control the distribution of trees likely to produce tree-tip upon death of the individual (trees with shallow root systems, for example). Large storms, of course, can cause tree-tips in any species, and some trees whose roots might otherwise rot in place (rather than tip) might be more susceptible to catastrophic tips during periods of inundation when soil profiles are saturated and loose structural strength.

Though rarely addressed formally, the archaeological implications of the processes and products produced by tree throw seem pretty straightforward (Figure 8). Shaler (1892) was perhaps one of the earliest writers to bring attention to the role that tree roots play in soil formation. Even in the cases where relatively catastrophic tree throw is not involved, the sheer mass involved in root growth must displace large volumes of soil, and otherwise act to disrupt the soil in what Shaler (1898:317) likened to a “kind of ploughing”. The passage of time and the growth of many generations of trees, with each succeeding generation spatially distributed away from the existing individuals, would seemingly insure that all of the soil has been thoroughly churned, whether or not the evidence is obvious. This is because there has been ca. 10,000 years or more of postglacial time, while most soil formation processes involve only 1,000s of years.

FIG. 8.—First effect of overturned trees in introducing vegetable matter in soils. a, leaf mold accumulated in pit. (Shaler 1892)

Upon excavation, the pits produced by tree throw look a lot like many of the pits thought to have been dug by prehistoric peoples. When they happen to contain dark soil (derived from the A horizon) and artifacts (also likely derived from the A horizon), they are probably unwittingly classified as having an anthropogenic (or "cultural") origin. This represents a classic example of the troublesome problem of equifinality (Schumm 1991), that similar looking end products may have come about by very different processes. Aside from the obvious similarities in form, one of the main reasons to be concerned about this problem lies in the way that archaeologists search for prehistoric features. Usually this is done by digging or scraping away levels of soil in a horizontal fashion, using hand tools like shovels or trowels, or by using mechanical earthmoving equipment. When for example the plow zones or A horizons are removed, all the areas of dark-colored soil become suspect. The underlying assumption is that the lower boundaries of soil horizons should approximate a planar surface. This is an odd and probably erroneous assumption to make for all soils.

It was briefly mentioned in the field that most but not all of the artifacts have been recovered from the plow zone, with the exception of one pit feature. Perhaps this would be a good site to address some of the issues surrounding the recognition of anthropogenic pit features. Likewise the issues surrounding how the many processes involved in Shaler's "tree ploughing" affect artifact distributions might also be addressed, while simultaneously acquiring the data to used to evaluate the distribution of activity areas at the site (Moyer 2004).

It is not hard to imagine how tree throw disrupts the original patterns of discard. Not so obvious are other non-anthropogenic factors that act to change vertical and horizontal distribution of artifacts. As I have tried to emphasize elsewhere (Van Nest 2002) some of these processes have positively helped to preserve prehistoric discard patterns that otherwise would have been more severely disrupted if left at the surface, or later, to be plowed up mechanically. Foremost among these processes is the burial of artifacts in soil biomantles (Darwin 1882; Shaler 1892; Johnson 1989, 1990, 2002; also see the other articles in special issue of *Geoarchaeology*, volume 17, no. 1, 2002) (Figure 9).

Without belaboring the point here, there is a body of scientific literature that is helpful in guiding what kinds of data can be collected during archaeological investigations that can be brought to bear on some of the site formation issues briefly discussed here. Biomantle formation results in ordered soil profiles with subsurface stone zones comprised of items too large to be moved by the animals involved in biomechanical redistribution of soil materials (a progressive process in the soil evolution model). Tree throw is one prominent process that acts to counter the tendency to produce these layers (a regressive process).

For biomantles produced by worms, ants, and other small organisms, recovery of sizes less than the typical ¼-inch screen recovery is required. Items this small can be gained from the heavy fractions of flotation samples, and the needs to the two (geoarchaeology and archaeobotany) can be integrated into a single sampling design for flotation recovery. Elsewhere I have addressed in greater detail the sampling needs required to characterize these processes quantitatively (Van Nest 1997, 2002). With regards to vertical artifact distributions, the idealized end members are reproduced below (Figure 10). The extent to which real distributions approach these may be a clue to the effective relative importance of the countervailing processes.

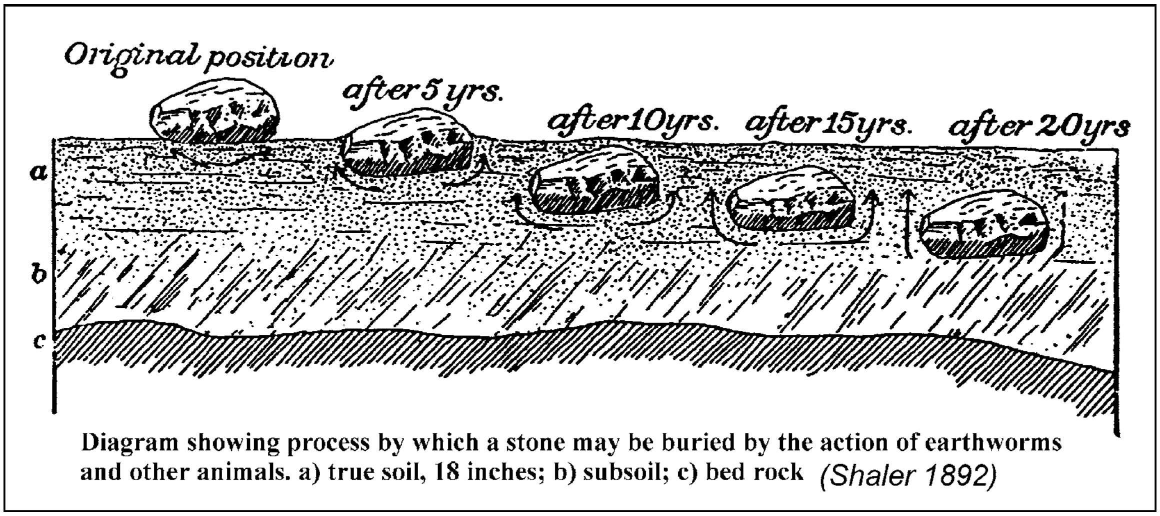

Figure 9. As noted by Johnson and Watson-Stegner (1990), Shaler (1892) may have been the first to try to illustrate the process described in great detail in Charles Darwin's last book (1882). Darwin gave many instructive examples that involved archaeological materials.

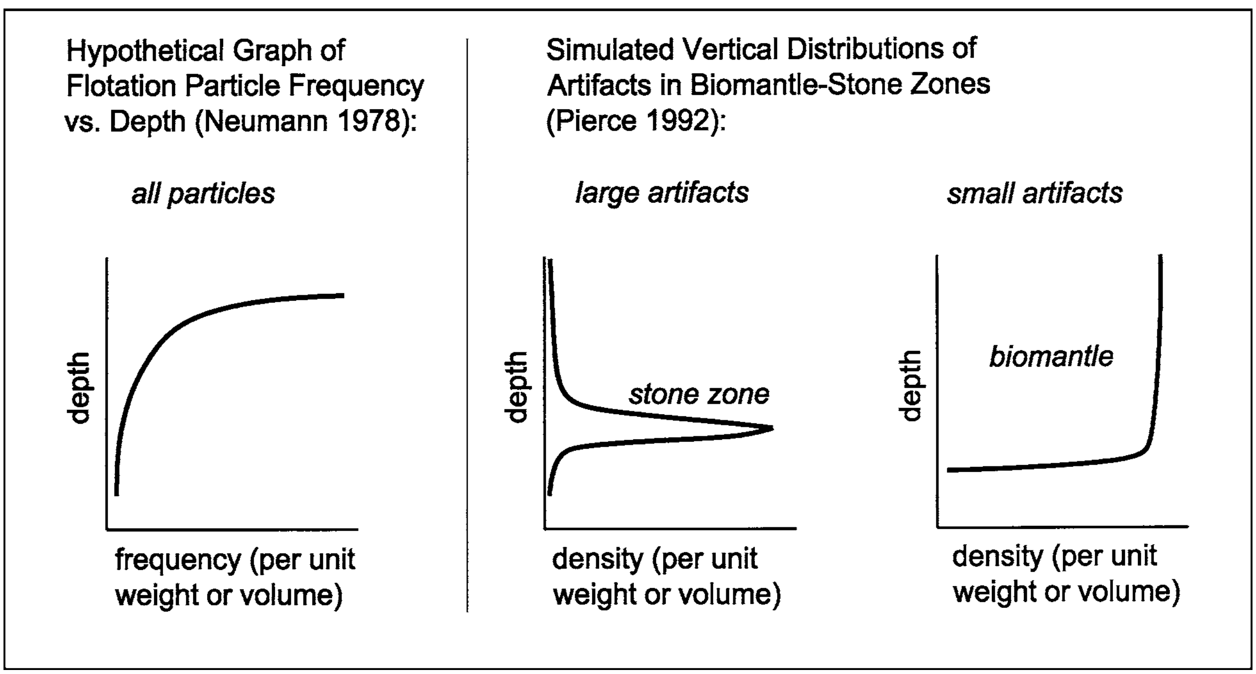

Figure 10. Hypothetical end members of models showing the expected vertical distribution of artifacts in soils (reproduced from Van Nest 2002:Figure 3). The data modeled by Neumann (1978) is from a Woodland period site in Minnesota. The data modeled by Pierce (1992) is for biomantles produced by gophers in California. The distinction between "large" and "small" is one made upon evaluation of which organisms are responsible for turbation at any given site or region.

Summary and Recommendations

A geoarchaeological reconnaissance for the Rogers Site has been conducted relatively late in the stages of investigation of this site. To the extent possible, it is recommended that further fieldwork and data acquisition be made to address the following outstanding questions surrounding the nature of site formation processes at the site.

- How old are the Holocene alluvial deposits adjoining the Rogers Site?
- Are any buried soils present?
- Are there any buried archaeological remains in the floodplain?
- What is the detailed topographic situation of the site? Presently, and how has this changed through time?
- Where was the river when the site(s) were occupied?
- What is the depth, nature and origin of the deeper clay that lies beneath the gravel, evidenced in the well boring?
- How old are the terrace gravels?
- What did the original surface soil on the gravel terrace look like before it was plowed? Are any fragments of these original soil horizons included in subsurface features?
- What is the nature and origin of the fine-grained fraction of the B horizon in the terrace soils?
- How did the sub-plow zone artifacts come to be buried? Do they belong with the plow zone assemblage, or are they on average older than the materials in the plow zone?
- How extensive has bioturbation been at the site? Are the visible tree-tip features a one-time event, or has the profile been churned by this process many times?
- Does the one feature found (along with the others likely to be found) have an anthropogenic or a non-anthropogenic origin?
- Is there any evidence for burial of artifacts beneath a biomantle?
- What are the horizontal and vertical distribution of artifactual remains? Are the vertical curves the same for all size fractions? What do these distributions tell us about site formation processes?

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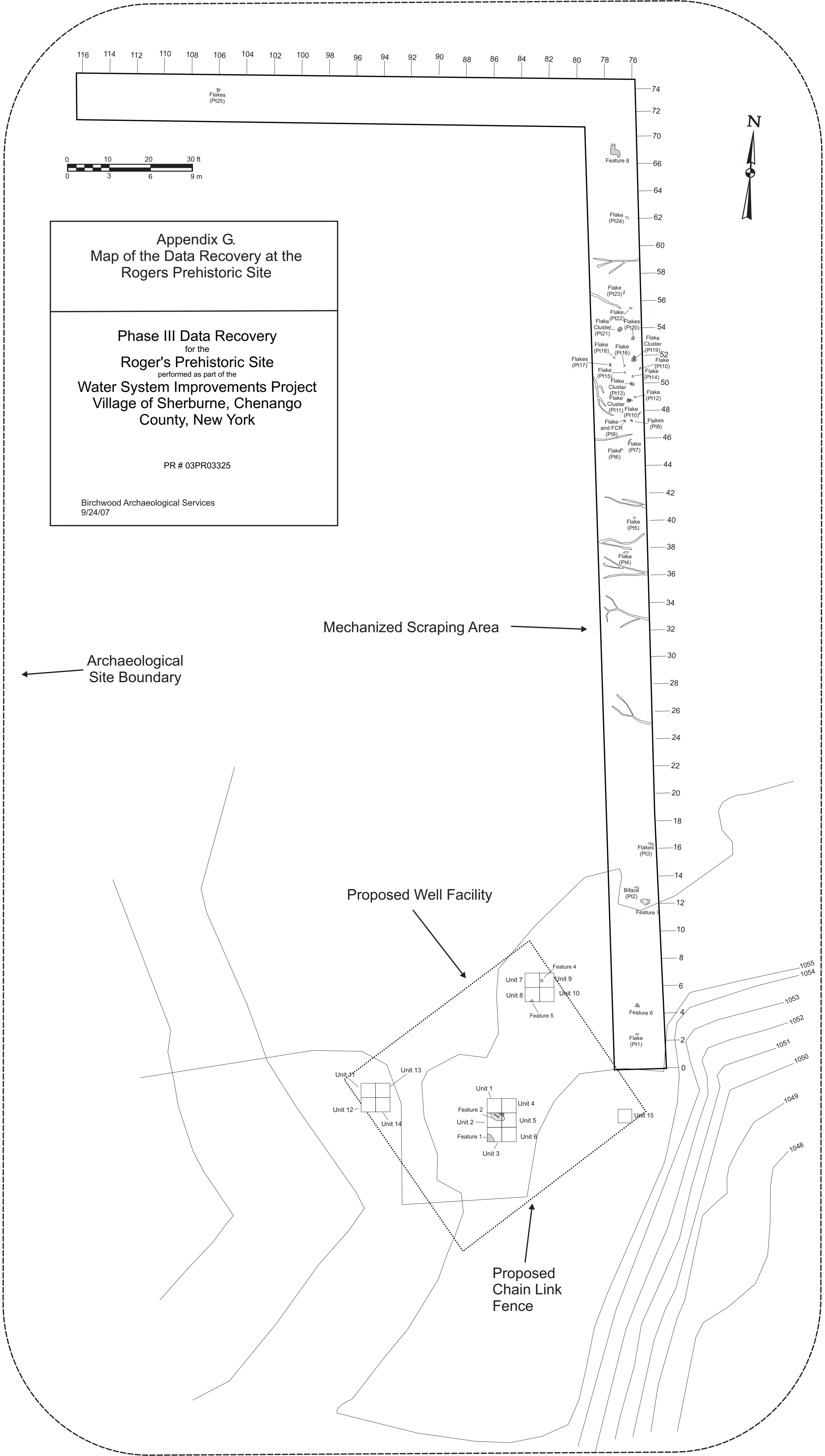
Appendix G.

Project Map


Appendix G.
Map of the Data Recovery at the
Rogers Prehistoric Site
Phase III Data Recovery
for the
Roger's Prehistoric Site
performed as part of the
Water System Improvements Project
Village of Sherburne, Chenango
County, New York
PR # 03PR03325
Birchwood Archaeological Services
9/24/07
N
0 10 20 30 ft
0 3 6 9 m
Mechanized Scraping Area
Archaeological
Site Boundary
Proposed Well Facility
Proposed
Chain Link
Fence
Flakes (Pt25)
Feature 8
Flake (Pt24)
Flake (Pt23)
Flake (Pt22)
Flake Cluster (Pt21)
Flakes (Pt20)
Flake Cluster (Pt19)
Flake (Pt18)
Flake (Pt16)
Flakes (Pt17)
Flake (Pt10)
Flake (Pt15)
Flake (Pt14)
Flake Cluster (Pt13)
Flake (Pt12)
Flake Cluster (Pt11)
Flake (Pt10)
Flake and FCR (Pt9)
Flakes (Pt8)
Flake (Pt7)
Flake (Pt6)
Flake (Pt5)
Flake (Pt4)
Flakes (Pt3)
Biface (Pt2)
Feature 7
Feature 6
Flake (Pt1)
Feature 4
Feature 5
Feature 2
Feature 1
Unit 1
Unit 2
Unit 3
Unit 4
Unit 5
Unit 6
Unit 7
Unit 8
Unit 9
Unit 10
Unit 11
Unit 12
Unit 13
Unit 14
Unit 15
1055
1054
1053
1052
1051
1050
1049
1048