

**ARCHAEOLOGICAL INVESTIGATIONS AT  
THE OAK HILL VILLAGE SITE (41RK214),  
RUSK COUNTY, TEXAS<sup>1</sup>**

by

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**Abstract:** Field investigations for archaeological data recovery on a Caddoan village in Rusk County were completed in 1995 at Texas Utilities Mining Company's Oak Hill Mine. The investigated Caddoan village dated from ca. A.D. 1100-1400 and included the remains of more than 40 prehistoric structures in approximately a 3-acre area. Various techniques were utilized to complete the data recovery effort in the field to meet scientific requirements and maintain project budgets and schedules. Much of this effort is in progress. A visual presentation showing some of the materials exposed by these techniques, after being buried for hundreds of years, will be shown and described. Data from recovered material will be reviewed and includes the results of special sampling such as radiometric dating, floral and faunal studies, and microstratigraphy. Ceramic special analysis to be highlighted includes the results of neutron activation, petrography, organic residue, and attribute studies. Assimilated data will provide an overview of the settlement with regard to probable development of the village over the lifespan of the prehistoric occupation.

**Additional Key Words:** archaeology; prehistoric; radiometric dating; floral; faunal; microstratigraphy; ceramic; petrography; Texas.

Introduction

In May 1993, the Railroad Commission of Texas (RCT) issued Permit No. 40 to Texas Utilities Mining Company (TUMCO) for the operation of the 2,280-acre Oak Hill lignite mine in Rusk County, Texas. Texas Utilities Company, through Texas Utilities Services, Inc. (TUS) and TUMCO, initiated actions to obtain this

permit in 1989. A substantial part of early permitting efforts was focused on gathering baseline data to document the existing environmental conditions at the mine. As a result of these efforts, one of the most important Caddo Indian villages in Texas, the Oak Hill Village Site (41RK214), was investigated.

The Texas Utilities Company, through its commitment to the environment, has provided the State of Texas, the Caddoan people, the local community, and the archaeological community a never before documented look into one aspect of Texas history. As a result of these efforts, in May of 1995 the Texas Historical Commission (THC) awarded Texas Utilities the *Texas Award for Historic Preservation* for exemplary efforts to preserve the state's historical past.

This paper presents an overview of the archaeological data recovery investigations at the Oak Hill Village Site. Espey, Huston & Associates, Inc. (EH&A) of Austin was contracted by TUS on behalf of TUMCO to conduct the archaeological data recovery excavations. Fieldwork at the site began in January of 1994 and was completed in September of 1995.

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The investigations were performed in compliance with the Procedures of the Advisory Council on Historic Preservation (36 CFR 800); the National Historic Preservation Act of 1966 (PL89-665), as amended in 1974, 1976, 1980 and 1992; the National Environmental Policy Act of 1969 (PL91-190, 83 Stat. 915, USC 4231, 1970); the Office of Surface Mining Regulations, as superseded by the Coal Mining Regulations of the RCT on January 1, 1981, updated 1989; the 1982 Memorandum of Agreement for the Oak Hill Mine; and other appropriate cultural resources legislation, as well as the guidelines set forth by the Council of Texas Archeologists.

The data recovery excavations at the site represent the final phase of cultural resources investigations within the Oak Hill 2,280-acre mine. These began in 1989 when EH&A conducted a survey of the mine which recorded 23 archaeological sites (Rogers et al. 1992). Several of the sites, including 41RK214, were recommended for additional testing to determine their National Register of Historic Places (NRHP) eligibility status. The THC concurred with this recommendation.

On behalf of TUS and TUMCO, EH&A performed the NRHP testing of Site 41RK214 in 1992 (Rogers et al. 1994). As a result of that study, the site was determined to be eligible for inclusion to the NRHP, and recommendations were made that a program of archaeological data recovery be implemented for the site in the event that mine-related activities precluded its preservation or avoidance. TUS and TUMCO personnel determined that mining activities would impact the site and, as a result, a data recovery plan was prepared and implemented.

#### Physical and Cultural Environments

The Oak Hill Village Site encompasses approximately 3 acres of the summit and upper backslopes of an interfluve overlooking the floodplain of Mill Creek, a tributary of the Sabine River (Figure 1). Geologically, the interfluve represents the remains of a fluvial terrace deposited during Tertiary time, and has been mapped as Carrizo Sand, the lowermost formation of the Claiborne Group. Soils which have developed on the landform are Ultisols (Plinthic Paleudults) of the Bowie Series. Soils of this series are characteristically sandy, having a dark grayish brown A horizon, underlain by a pale brown E horizon and a mottled yellowish brown to red clayey Bt horizon.

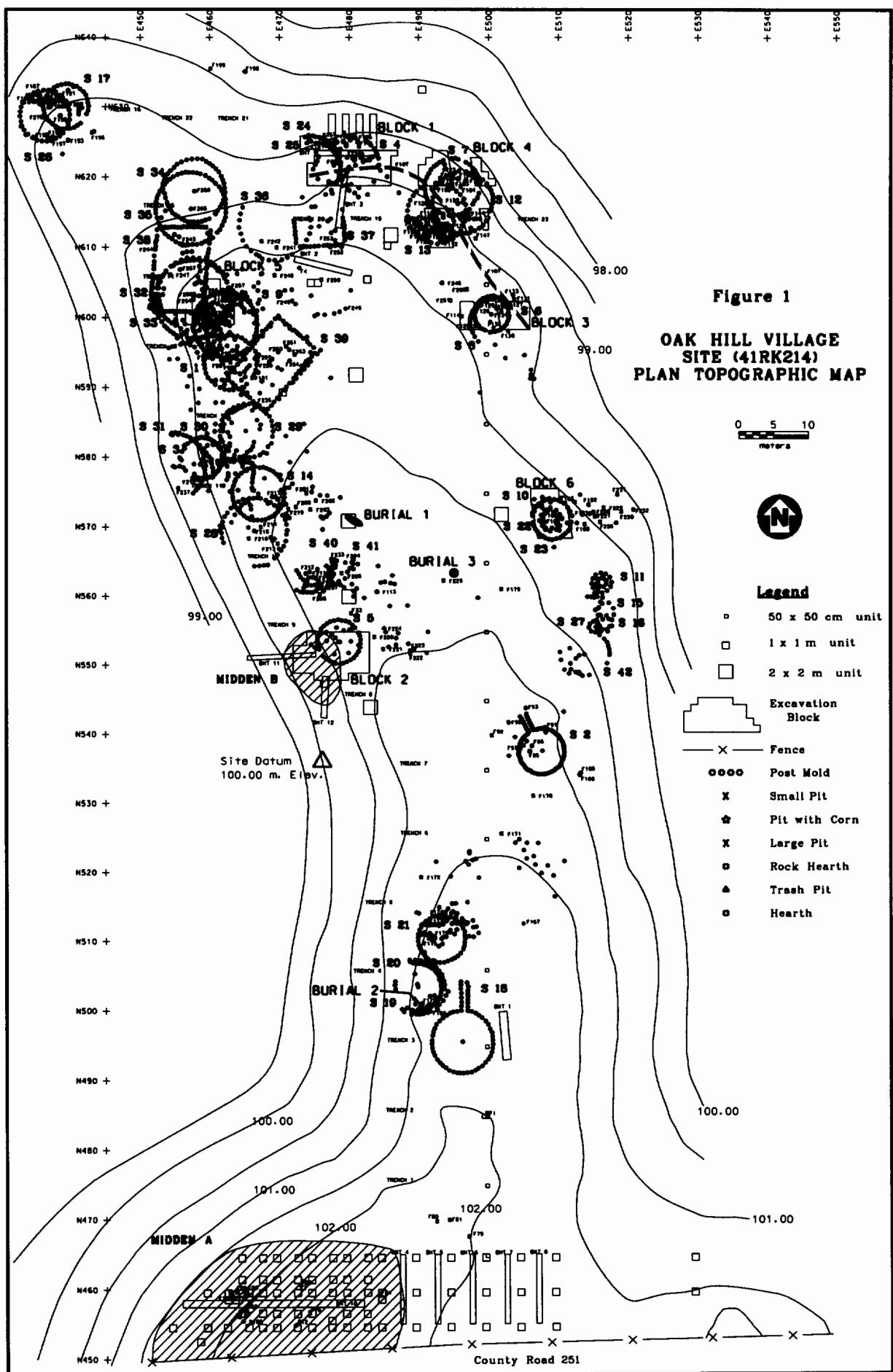
When initially recorded during the fall of 1989, the site was covered in short pasture grasses. A few hardwoods also occurred on the hilltop. While used primarily for livestock grazing during recent (post WWII) times, the location had formerly been under cultivation since the late 19th Century.

The aboriginal utilization of the location occurred during two periods in prehistory: the Archaic and Middle Caddoan. The Archaic period represents a long period of time, spanning several thousand years, and has been divided by archaeologists into three sub-periods: Early, Middle and Late. It was during the latter that the first occupations of 41RK214 occurred.

For northeast Texas and surrounding regions, there is an increase in archaeological site density for the Late Archaic period, which presumably corresponds to an increase in population and a shift from a restricted wandering communal pattern to one more centrally based. Settlements during that time were widely dispersed and founded upon hunting and gathering of local food resources (Story et al. 1990). The location of site 41RK214 probably represented a base camp from which forays into the surrounding countryside could be made to secure a wide variety of plants and animals. The residue left behind at the site was limited to dart points, grinding stones (for nut processing) and other stone items. After the dispersal of the Late Archaic folk, the site apparently remained unoccupied for several hundred years until it was visited by Caddoan peoples sometime around A.D. 1200. It is with these people that the vast majority of cultural remains at the site can be attributed, and these occupations were the focus of the archaeological investigations.

The Caddoan cultural sphere encompassed what is today northeast Texas, northwest Louisiana, southwest Arkansas and southeast Oklahoma. Caddoan speaking groups or tribes had occupied this area since about A.D. 800. Archaeologists have made several attempts at subdividing the approximately 1000 years of Caddoan culture, with the most recent being: Formative Caddoan (A.D. 800-1000), Early Caddoan (A.D. 1000-1200), Middle Caddoan (A.D. 1200-1400), Late Caddoan (A.D. 1400-1680) and Historic Caddoan (A.D. 1680-1860) (Story 1990). The occupations at the Oak Hill Village Site fall within the Middle Caddoan period.

While the origins of the Caddoan culture remain poorly understood, most archaeologists believe it developed from indigenous populations as a result of



cultural change. The reasons for the change in cultural practices away from the hunter gatherer tradition of the Archaic period to a more sedentary pattern may have come from within and without, and was probably influenced by the arrival of maize agriculture (Story et al. 1990). There may have been two distinct, though parallel, lines of emergence for the culture, which, because of shared adaptive strategies and interaction, appear as one. These occurred around the Big Bend of the Red River and along the Arkansas River drainages in eastern Oklahoma (Story 1985). Of the two emergent groups, it is likely that the peoples inhabiting the Oak Hill Village Site probably arrived via expansion of the Red River group.

Regardless of their origins, the Caddo developed a very complex social and political system based on authority and religion. Caddoan communities typically consisted of small villages and hamlets composed of about a dozen households. Large civic-ceremonial centers, such as the George C. Davis Site in Cherokee County and the Sanders Site in Lamar County, also occurred though infrequent. These complex sites formed the apex of the Caddoan cultural manifestation, and were distinguished by special purpose structures, mounds and mortuary areas. A stratified social system controlled by elites is apparent at these centers, which also served as major redistribution loci for local and non-local resources.

Because of the magnitude and obvious importance of these large civic-ceremonial centers, they have long been the focus of archaeological endeavors. Conversely, relatively few large scale excavations have taken place at smaller villages and hamlets. The investigations sponsored by TUMCO at the Oak Hill Village Site have been exceptionally important in this regard, and have afforded the public a glimpse into the communal organization of a Middle Caddoan village.

#### Archaeological Investigations at the Site

The Oak Hill Village Site (41RK214) was initially recorded by EH&A archaeologists on October 16, 1989, during the cultural resources survey of the 2,280 Oak Hill mine (Rogers et al. 1992). The site was located on the Montalbano property, and it, along with several other sites, was shown to the archaeologists by Mrs. Mary Montalbano. An avid artifact collector, Mrs. Montalbano had found prehistoric artifacts on the ground surface at a number of locations on and adjacent to the family's property.

In recording the site, the EH&A archaeologists made attempts to determine its spatial and vertical extent through the controlled excavation of ten shovel tests. Prehistoric lithic and ceramic artifacts, totaling 20 items, were recovered from seven of these tests, at depths of between 10 and 50 centimeters (cm) below the ground surface. In addition, 16 artifacts were collected from the ground surface where cattle trails had removed the grass cover. Based on the presence of subsurface artifacts below the plow zone, it was believed that the site could possess undisturbed cultural deposits which could further our understanding of the prehistoric occupations in the area. A program of archaeological testing was recommended to assess its eligibility status.

NRHP testing was performed at 41RK214 during 1992 and early 1993 (Rogers et al. 1994). This effort involved the hand excavation of seven 1- x 1-meter (m) units and three mechanically excavated trenches. A total of 659 prehistoric artifacts, including a *Yarbrough* dart point, two fragmented and unidentifiable dart points, an *Alba* arrow point, 5 unidentifiable projectile point fragments, 3 nutting stones, 270 pieces of unmodified lithic debitage and 377 ceramic sherds, were uncovered. A few historic artifacts, attributable to Anglo-American utilization of the area, were also found.

The four complete or nearly complete projectile points included three dart points aligned with the Archaic occupations. The *Alba* arrow point is attributed to the site's use during the Middle Caddoan period. The ceramic assemblage, also aligned with the Caddoan occupations, included the types *Holly Fine Engraved*, *Pennington Punctated-Incised*, *Dunkin Incised*, and *Kiam Incised*. A few sherds tentatively identified as *Poynor Engraved* were also recovered.

In addition to the artifacts recovered from the site, dietary evidence was also found. Plant remains identified included hickory nut shell fragments and seeds from the mustard and grass families. Faunal remains totaled 45 specimens, though all of these were fragmented and some were burned. Only white-tailed deer could be recognized in the assemblage.

Two radiocarbon dates were secured from the site during the NRHP testing. Both were derived from soil humates. One of these proved modern, while the other yielded a calibrated date of A.D. 1305-1433.

The investigations concluded that two discrete temporal components related to Archaic and Caddoan occupations exist at the site. The Archaic component was believed to represent short-term and perhaps seasonal utilizations, and did not appear to possess stratigraphic integrity. The majority of the materials recovered from the site were attributed to Caddoan occupations, which, based on ceramics and supported by the radiocarbon assay, dated to the Middle Caddoan period. The study further concluded that, while impacts related to cultivation and bioturbation had undoubtedly had an adverse effect on the site, significant archaeological deposits remained which retained a considerable amount of integrity. It was the opinion of the Principal Investigator that, because of the site's importance in terms of understanding the area's prehistory, it should be considered eligible for inclusion to the NRHP under Criterion D. Specifically, the site could contribute to resolving questions related to settlement patterns and site function. A program of data recovery was recommended for the site.

Based on the results of the NRHP testing program, a research design was developed to guide the data recovery investigations. Briefly, the research design stated that the data recovery investigations would address topics concerned with chronology, cultural affiliation, site function and organization, subsistence, material culture, landform development, and paleoenvironmental reconstruction. As the data recovery investigations proceeded, the research design was augmented to accommodate new findings in the field.

A two-phase approach for the data recovery investigations was developed to retrieve the data necessary to address the research topics (EH&A 1993). Phase I was to consist of the hand excavation of up to 30 1-m<sup>2</sup> units in the southwestern portion of the site defined during the testing investigations as a possible midden (Midden A). In addition, machine excavated trenches were to be dug at 10-m intervals for the length of the ridge top to search for features. Data gathered from the trenches was to be augmented by judgmentally placed 50 cm<sup>2</sup> units and by other 1 m<sup>2</sup> units if deemed necessary. At the conclusion of the Phase I investigations the THC was to be consulted to review the results of the excavations and determine if additional work was needed for Phase II.

The Phase I data recovery investigations were initiated in January of 1994. These investigations proceeded by sampling Midden A with 30 1-m<sup>2</sup> units spaced at 5-m intervals. In addition, 16 50-cm<sup>2</sup> units

were excavated at 10-m intervals in a north-south orientation along the E500 grid line to determine the depth of the cultural deposits across the site. Systematic machine testing was also conducted and consisted of 16 motor grader blade cuts. The blade cuts measured approximately 3 m wide and were excavated at 10-m intervals in east-west orientation across the site. Each blade cut trench was excavated to the top of the basal clay. The purpose of the trenches was to attempt to locate post holes, cultural features, and artifact concentrations that would then guide additional hand excavations. All soil discolorations in the trenches were marked and then excavated to determine if they were natural occurrences or cultural features. If cultural, the area around the feature was shovel skimmed and troweled to determine if other features were present.

The Phase I data recovery investigations resulted in the identification of a number of cultural features including hearths, charcoal filled pits, and, most importantly, post hole stains representing perhaps as many as six structures. Because of these significant discoveries, additional investigations were deemed necessary. In consultation with the THC, the Phase II data recovery investigations were formulated and implemented.

During the Phase II investigations, an additional 35 units were excavated in the midden area for a total sample of approximately 17 percent of the midden being hand excavated. In addition, six hand excavated blocks were established in those areas where structures were suspected, as indicated by the presence of post hole stains. The hand-excavated blocks ranged in size from 28 m<sup>2</sup> for Block 6 to 84 m<sup>2</sup> for Block 1. Also during Phase II, 7 additional trenches were machine excavated perpendicular to the Phase I trenches to search for additional structures and features. Once all the hand excavations were complete, the remaining areas of the site that had not been hand or machine excavated were then machine excavated to expose all remaining cultural features. By the time the site was fully excavated, the remains of 42 structures had been exposed, 158 cultural features and 3 burials had been identified, and more than 35,000 artifacts had been recovered.

### Village Organization

The most obvious characteristic of the Oak Hill Village Site is the presence of structural remains. At least 42 structures were uncovered during the excavations, occurring as circular-shaped stains seen at the top of the Argillic (Bt) soil horizon, and were

largely uncovered by mechanical excavation. They represent the remnants of holes excavated by the Caddo for post placement in house construction, though some of the smaller examples probably served for purposes other than habitation.

Ethnographic descriptions of Caddoan houses were provided by both Spanish and French visitors (Swanton 1942; Bolton 1987). They are described as being in the form of beehives or large haystacks and were covered with grass from top to bottom. There were typically eight to ten families residing in each house, which were up to 60 feet in diameter. There was a centrally located hearth, the smoke from which rose and exited the structure through the grass. The houses were communally constructed, under the direction of the village leader or *caddi*, who instructed a runner or *tammas* to inform all of the villagers to come and help with the construction. The messenger gave a member of each household instructions to cut a pole, trim it, and bring it to the appointed place and set it in the hole assigned to him. Others were ordered to bring smaller poles for the crosspieces and bark thongs to tie them in place. One or two women from each house were instructed to bring a bundle of long grass to use for covering. At dawn on the selected day of construction, the villagers assembled and the poles were inserted into their respective holes. A larger post was inserted in the center of the structure and two men climbed it and tied the ribs together. The cross laths were then put in place and the grass thatch was applied, beginning at the bottom. Soon after midday the structure would be completed.

Four types of structures were uncovered at the Oak Hill Village Site. The predominant form is circular-shaped and ranges in size between 6 and 10 m in diameter, considerably smaller than those referred to in the above-mentioned ethnographic accounts. These structures probably represent the houses of the common people. A second type is also circular-shaped, but has an extended entrance way constructed by digging two parallel trenches into which posts were set. Examples of this type are Structures 2 (Figure 2) and 18, which are likely the remains of the houses of important religious and/or political leaders in the community. A third type of structure is rectangular shaped, of which two complete (Structures 38 and 39) and one partial (Structure 37) structure were uncovered. The final type is circular-shaped and small, and also contains an inner series of post holes. Two of these (Structures 10 and 11) were found at the site, and they may have served as granaries or other non-habitation purposes.

Several of the structures exhibit evidence of having been repaired or reconstructed. This evidence occurs in the form of additional post holes dug around an existing structure. One of the best examples of this can be seen for Structures 19 and 20, in the southern portion of the site.

Several of the structures were built over former habitations, as witnessed by the presence of intersecting post holes. This is valuable data for reconstructing the sequence of house construction at the site. Another important means of assessing the duration of a structure, and in turn the site itself, is through the identification of the specific type of wood represented in the post molds. Good (1982), by analyzing the longevity of various wood types used in modern posts, was able to discern differences in longevity based on preservational characteristics. That study identified oak as having the shortest lifespan of approximately 10 years. Evidence collected to date for the Oak Hill Village Site indicates that this was the preferred constructional material. By inference then, we can assume a structural duration of approximately 10 years.

As can be seen in Figure 1, most of the structures occupy the northern portion of the site. An open area, perhaps used as a plaza, separates the communal area from the more elaborate structures (Numbers 2 and 18), presumably belonging to elite members of the community, to the south. Interestingly, two of the three human burials were found during mechanical excavations in the plaza. Burial 1 was that of an adult and was the only burial which had skeletal remains. These remains were very poorly preserved, consisting of approximately 100 fragments no larger than 1 cm in diameter. The grave did contain 15 arrow points, however, suggesting that the individual was an adult male.

Excavations in the northern part of the Oak Hill Village Site uncovered evidence for a mound having been built over one or perhaps two structures, a practice known from excavations at other Caddoan habitation sites (Newell and Krieger 1949). The expenditure of labor required to construct such a feature would seemingly indicate that a person or persons of stature in the community had occupied this part of the site.

#### Artifacts

Over 35,000 prehistoric artifacts were recovered during the excavations at the Oak Hill Village Site. This total includes 99 arrow points, 356 dart points,

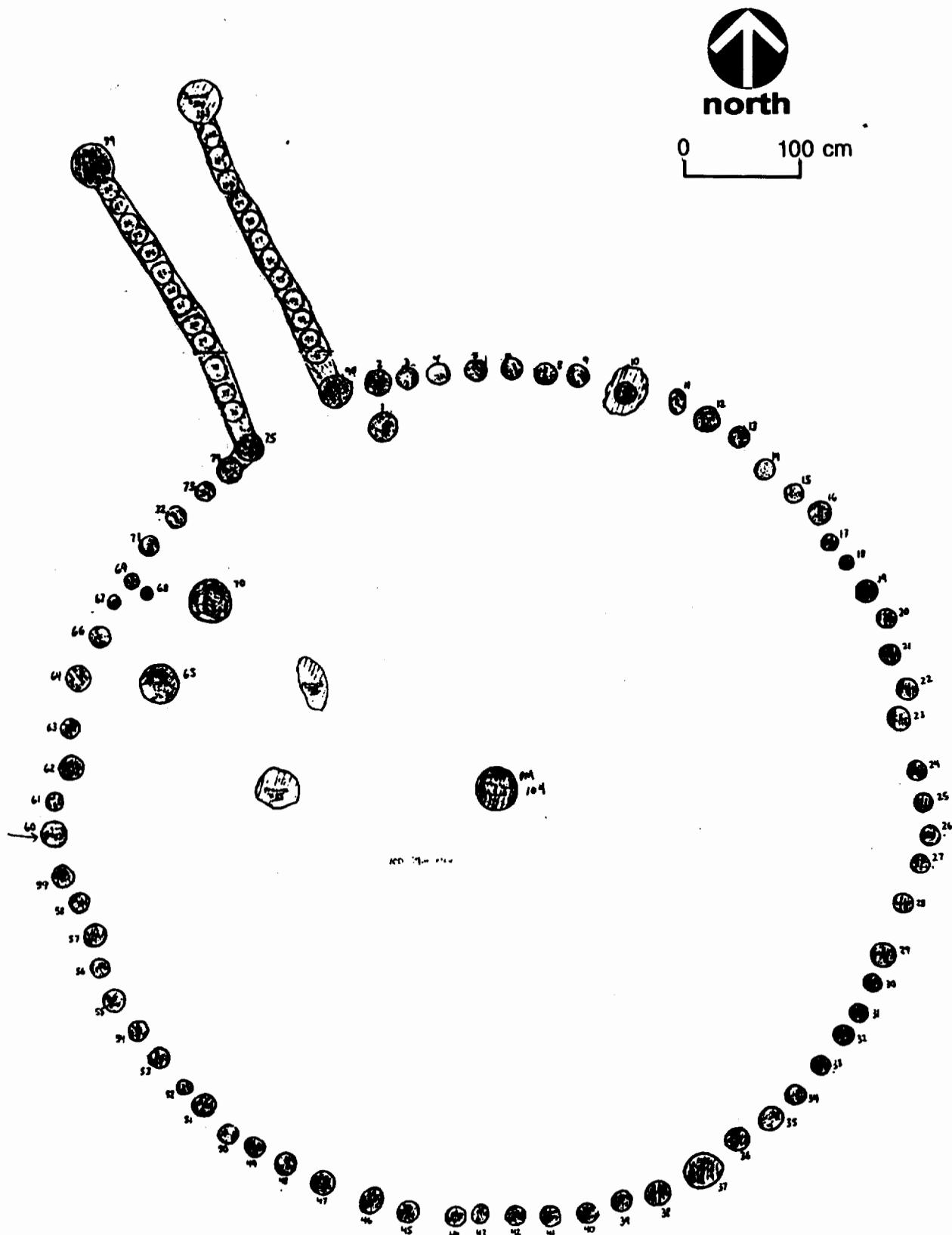


Figure 2. Structure 2, Site 41RK214.

127 non-projectile point bifaces, 17 unifacial tools, approximately 10,000 pieces of unmodified lithic debitage and over 25,000 ceramic artifacts.

The arrow points include 60 complete or nearly complete specimens and 39 fragments. Recognizable types within the assemblage include *Perdiz*, *Friley*, *Bonham*, and *Alba*. These artifacts can be attributed to the Caddoan occupations. Most are made from chert, though a few are made from quartzite and petrified wood. Fifteen of the *Perdiz* arrow points were recovered from Burial 1, indicating the individual interred in the grave may have been buried with a quiver and was likely an adult male. Additional distribution of these artifacts is as follows: Block 1 ( $n = 9$ ), Block 2 ( $n = 5$ ), Block 3 ( $n = 3$ ), Block 4 ( $n = 10$ ), Block 5 ( $n = 15$ ), Midden A ( $n = 12$ ), Midden B ( $n = 4$ ). The remainder were found during mechanical trenching or on the site's surface. Vertically, of the 59 arrow points having recorded depths (and excluding the 15 specimens found in Burial 1), 47, or approximately 80 percent, were recovered from the upper 30 cm of the site.

The dart point assemblage includes 178 complete or nearly complete specimens, with the remainder being fragments. While many of these artifacts undoubtedly served as projectile points for atlatls, some may have been used as knives. Use wear analysis, to be preformed on these artifacts, may help resolve this issue. Preliminary analysis of these artifacts has tentatively identified the following types: *Gary*, *Kent*, *Yarbrough*, *Edgewood*, *Darl*, *Godley*, *Ellis*, *Edgewood*, *Pontchartrain*, *Ensor*, *Elam*, *Delhi* and *Motley*. In general, these artifacts have a lengthy temporal span, and are somewhat limited as time indicators. While most are probably associated with the Archaic occupations at the site, some may also have been utilized by the Caddoans. Vertically, of the specimens which have recorded depths, there is a nearly equal distribution between those found in levels 1 through 3 and those found at deeper depths. Perhaps more importantly, less than one-third of the dart points were recovered from excavations conducted at the locations of identified structures.

Lithic tools other than projectile points include unifacially and bifacially worked objects. These items were used in cutting, sawing, scraping, gouging and perforating materials such as hides and wood. Some were likely hafted, though no evidence of the hafting material remains. Unifacial tools total 17 specimens, while 127 bifacially worked tools were recovered. Most

of these artifacts were made from chert cobbles, though quartzite and petrified wood are also represented in the assemblage.

Over 150 pieces of utilized debitage were also found at the site. These items represent expedient tools requiring no preparation for cutting, scraping and perforating. They were probably discarded shortly after use.

Fifteen core or core fragments were found at the site, attesting to the early stage of tool manufacturing. Eleven of these items originated as chert cobbles.

The waste product of lithic tool production, primarily in the form of debitage, is often one of the most abundant artifact type at prehistoric sites, and the Oak Hill Village Site is no exception. Approximately 10,000 pieces of unmodified debitage were recovered from the excavations.

Ground stone artifacts found at the Oak Hill Village Site totaled 233 specimens. Many of these are so-called "nutting stones", which were presumably used for crushing hardwood nuts such as hickory and pecan. The majority are made from locally procured hematite. One exception is an elongated artifact made of non-local chlorite schist, probably derived either from the Llano Uplift area of central Texas or the Ouachita Mountains of Arkansas or Oklahoma. The item may have been reserved for ceremonial use. Other types of ground stone implements recovered from the site include manos, metate fragments, pestles, a full-grooved axe head and celts. Only 35 of these objects can be associated with structures. Most ( $n = 171$ ) were found during the mechanical stripping or during the trench excavations. The remainder were unearthed in Midden A ( $n = 11$ ), Midden B ( $n = 1$ ) and in miscellaneous units ( $n = 15$ ).

In addition to the above described stone artifacts, a relatively large number of ceramics were found. The Oak Hill Village Site ceramic assemblage consists of 25,476 ceramic artifacts, including seven whole or partial vessels, 98 pipe bowls, stems, and fragments, 9,731 sherds over 1 inch in diameter, and 15,640 ceramic sherds smaller than 1 inch in diameter (sherdlets). A complete analysis was conducted on all portions of the assemblage except for the sherdlets. The analysis included the documentation of attributes such as surface treatment, decorative treatment, motif, and vessel form, when possible. In addition, the Munsell color of the interior, exterior and core was noted, and paste attributes, including porosity, non-plastic

inclusions present, percentage of non-plastics present, and firing characteristics, were identified on approximately 50 percent of the ceramics. The following section presents preliminary observations concerning the character and distribution of the ceramic sherds throughout the settlement.

Identifying types within a ceramic assemblage is difficult at best, even when large portions of a design motif are present and vessel form can be determined; identifying types when only small portions of a motif remain and vessel form cannot be conclusively determined is impossible. Nevertheless, within the Oak Hill Village Site collection three major motif types could be identified: *Pease Brushed-Incised*, *Canton Incised*, and *Maddox Engraved*. *Pease Brushed-Incised* and *Canton Incised* were recognized based on large portions of vessels which allowed identification of vessel form and diagnostic decorative treatments. The single *Maddox Engraved* specimen in the collection was recognized based on the presence of a distinctive decorative element, a snake head. Several sherds within the collection also display decorative treatments and styles that could classify them as either a *Pennington Punctated-Incised* or a *Crockett Curvilinear Incised* type.

Within the excavated areas, ceramic sherd density per cubic meter is quite low with one exception. Overall density of ceramic accumulations, including sherdlets, is 177.5 ceramic sherds per cubic meter. All excavated blocks and the Midden A area densities fall below 177.5, with the exception of Block 2, which contains Midden B. The density in Midden B is 760.9 sherds per cubic meter. The cause for the low volume has not been determined conclusively; however, the low densities and the construction sequence of the structures may suggest a short-term occupation (less than 50 years) of the settlement.

Regardless of the length of site occupation, the distribution of ceramics in the excavated areas has produced some provocative results. The distribution of decorative treatments throughout the excavation areas is fairly uniform. However, one small correlation is worth noting. Typically, when brushed sherds exceed 10 percent, engraved sherds are consistently below 15 percent, and when engraved sherds are at least 15 percent, brushed sherds drop to below 10 percent. Although not a strong correlation, this pattern suggests that a temporal or functional distinction may be present within the Oak Hill Village Site assemblage.

The paste analysis has also produced interesting results. Two types of clay resources have been identified within the collection: a hematite poor clay and a hematite rich clay. Petrographic analysis conducted on ceramic thin sections from the testing phase support this distinction. Based on the petrography and the recent macroscopic examination of over 4,000 sherds, two groupings are proposed: clay group 1 with less than 10 percent hematite present and clay group 2 with substantially more than 10 percent hematite present.

Initial study of the clay groups reveal a distinct pattern of distribution throughout the settlement. While Blocks 1 through 4 and Block 6 have approximately equal frequencies of clay group 1 and clay group 2, Midden A and Block 5 have substantially lesser numbers of ceramics produced from clay group 2. Chi-square analysis of the data indicates that the differences noted in both Midden A and Block 5 are non-random at a 0.001 level of significance. Furthermore, a correlation analysis shows that, while the two clay groups have a strong positive correlation of 0.91 throughout the settlement, Blocks 1 through 4 and Block 6 have a 0.99 positive correlation and Midden A and Block 5 have a correlation of -1.0.

Although the analysis of the Oak Hill Village Site ceramic assemblage is ongoing, these preliminary results indicate that there are distinctions in the patterns of distribution throughout the site. At this time, we cannot determine conclusively whether or not the distinctions are solely a result of temporal variation; however, we do suggest that temporal variation may have played a part in the patterns of distribution discerned.

### Chronology

To date, 24 radiometric dates have been obtained for the site. Two of these collected during the NRHP testing program at the site were derived from soil humates. Because dates derived from this material are reflective of the mean residence time of carbon contained in the soil, they are not considered as accurate measurements of time. The other 22 dates were derived from wood charcoal and charred corn cobs taken from post-hole fill and pit features at the site. The assays are listed in Table 1.

The dating of the charcoal from post holes represents an attempt to secure an age for a given structure. In order to determine whether or not the charcoal represents the remains of the original post or

TABLE 1  
RADIOCARBON ASSAYS

Assay No. Provenience and Raw Age	Delta 13C (per mill) and Material Dated	Corrected Age (years B.P.)		Calibrated 1 Sigma Age (20 year scale)	Relative Area under Probability Distribution
Beta 73941 (AMS) Structure 1 Feature 95	-26.1 corn	560±60	AD	1310-1350 1390-1440	.38 .62
Beta 96915 (AMS) Structure 2 Post Hole 72	-22.5 wood charcoal (elm)	630±50	AD	1304-1324 1337-1394	.27 .73
Beta 96920 (AMS) Structure 2 Post Hole 115	-20.9 wood charcoal (oak)	740±60	AD	1230-1300	.99
Beta 96910 (AMS) Structure 2 Post Hole 145	-24.5 wood channel (oak)	720±60	AD	1250-1310 1360-1380	.80 .20
Beta 73939 Structure 2 Feature 85	-12.8 corn	810±100	AD	1060-1080 1120-1140 1160-1290	.08 .08 .84
Beta 73940 Structure 2 Feature 86	-12.3 corn	610±80	AD	1300-1400	1.00
Beta 96916 (AMS) Structure 5 Post Hole 17	-24.7 wood charcoal (oak)	660±50	AD	1292-1317 1345-1391	.35 .65
Beta 96919 (AMS) Structure 5 Post Hole 18	-22.3 wood charcoal (oak)	730±50	AD	1243-1305 1368-1372	.96 .04
Beta 96914 (AMS) Structure 5 Post Hole 19	-23.6 wood charcoal (oak)	730±60	AD	1230-1310 1360-1380	.86 .14
Beta 96918 (AMS) Structure 5 Post Hole 43	-17.1 wood charcoal (oak)	730±50	AD	1243-1305 1368-1372	.96 .04
Beta 96912 (AMS) Structure 5 Post Hole 45	-24.9 wood charcoal (oak)	670±50	AD	1230-1310 1360-1380	.86 .14
Beta 96908 (AMS) Structure 5 Post Hole 46	-22.3 wood charcoal (oak)	660±50	AD	1292-1317 1345-1391	.35 .65
Beta 96909 (AMS) Structure 7 Post Hole 1	-27.0 wood charcoal (pine)	700±50	AD	1276-1311 1351-1387	.58 .42

TABLE 1 (Concluded)

Assay No. Provenience and Raw Age	Delta 13C (per mill) and Material Dated	Corrected Age (years B.P.)	Calibrated 1 Sigma Age (20 year scale)	Relative Area under Probability Distribution
Beta 96911 (AMS) Structure 7 Post Hole 3	-24.1 wood charcoal (hickory)	720±50	AD 1250-1310	.80
Beta 96913 (AMS) Structure 7 Post Hole 15	-24.5 wood charcoal (oak)	850±60	AD 1040-1280	.99
Beta 96917 (AMS) Structure 7 Post Hole 38	-25.2 wood charcoal (maple)	180±50	AD 1663-1694 1726-1816 1922-1955	.20 .59 .21
Beta 81680 (AMS) Structure 37 Post Hole 11	-23.4 wood charcoal	1830±60	AD 120-250 300-320	.90 .10
Beta 81681 (AMS) Structure 39 Post Hole 1	-25.8 wood charcoal	880±60	AD 1050-1090 1120-1140 1150-1230	.26 .14 .60
Beta 71486 (AMS) Structure 39 Post Hole 3	-26.2 wood charcoal	800±60	AD 1200-1290	1.00
Beta 73936 (AMS) Feature 65	-27.9 wood charcoal	560±60	AD 1310-1350 1390-1430	.45 .55
Beta 73937 (AMS) Feature 71	-28.5 tree root	220±50	AD 1648-1683 1745-1807 1933-1955	.31 .50 .18
Beta 73938 Feature 81	-28.3 wood charcoal	570±140	AD 1280-1480	1.00

whether it merely represents detrital material that may have washed into the post hole, the following methodology was employed. First, the fill excavated from the post hole was subjected to flotation. Next, the charcoal recovered from the flotation was submitted to the Paleoethnobotanical Laboratory at Texas A&M University for species identification. In cases where the majority of the charcoal from a given post hole could be identified as belonging to a single species, it was presumed to represent the remains of the original post, and was then submitted for radiocarbon dating.

The radiocarbon dating was performed by Beta Analytic, Inc. Most of the assays were derived using the accelerator mass spectrometer method, which allows smaller amounts (less than 0.1 gram) to be dated, and generally provides a more accurate age by achieving a smaller standard deviation. The raw age obtained from the procedure is corrected for isotopic fractionation using the delta  $^{13}\text{C}$  value. Finally, in order to convert the corrected age, expressed in years Before Present (actually years before 1950), to a calendrical date, the samples were calibrated using the CALIB computer program of Stuvier and Reimer (1993). Because the regression line between tree-ring ages and uncalibrated radiocarbon dates fluctuates through time, there is often more than one intercept for a given date. By using Method B, with the 20-year interval regression scale relative areas under the probability distribution are calculated to be within a 1 sigma (68 percent probability) error range for each assay.

### Summary

The archaeological excavations at Site 41RK214 have yielded important information concerning village organization and life ways of the Caddoan people living in northeast Texas during the 13th and 14th centuries. By combining systematic machine testing and controlled hand excavations, a wealth of information was retrieved in a timely and cost-efficient manner. The ongoing analysis and interpretation of these materials will afford the archaeological community and the general public a rare look into the essence of a prehistoric community.

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