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# Journal of Northeast Texas Archaeology, Volume 29

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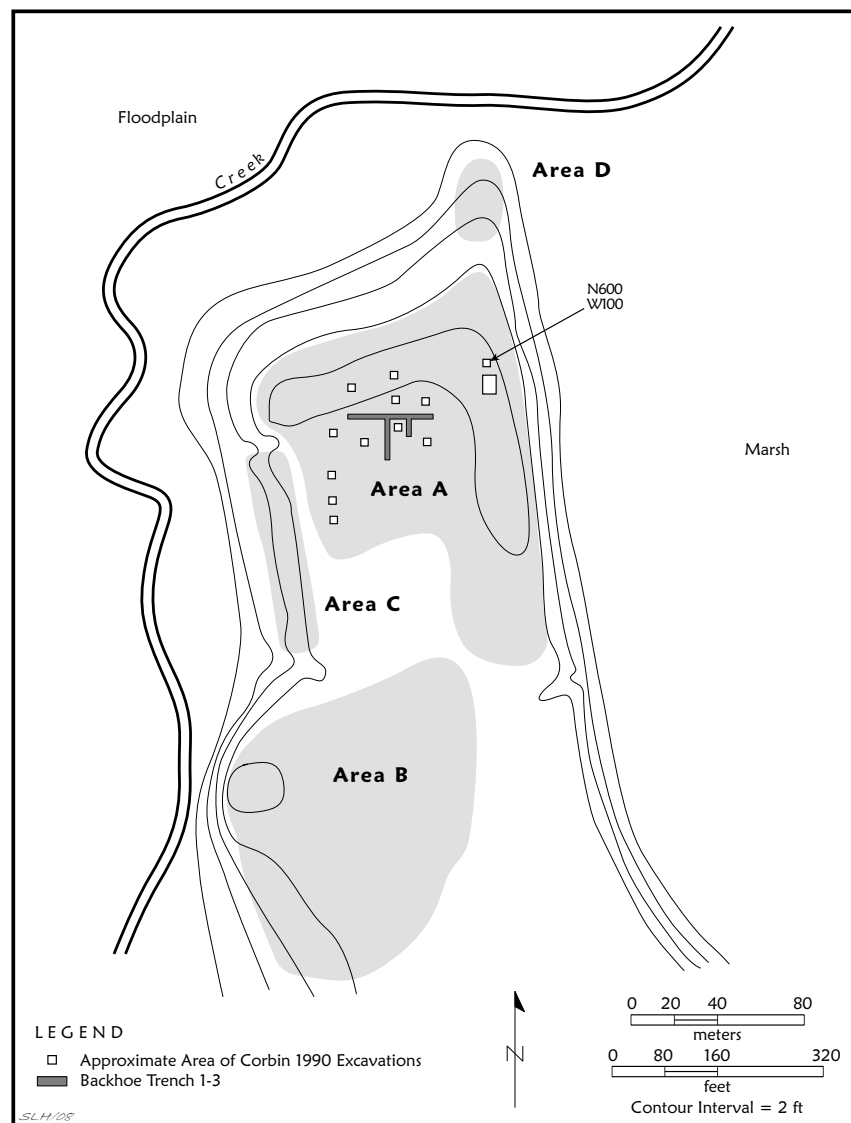
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# Journal of Northeast Texas Archaeology



Journal of Northeast Texas Archeology, Volume 29 (2009)

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## Foreword to Volume 29

*Timothy K. Perttula*

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This volume of the *Journal of Northeast Texas Archaeology* contains a series of articles on Caddo prehistoric ceramics from the Northeast Texas region: a topic near and dear to my archaeologist's heart. The ubiquity of ceramic vessel sherds from Caddo sites, as well as their diversity in decorative styles, methods of manufacture, surface treatment, firing, and chemical composition have proved useful in the acquisition of information on the stylistic and technological character of prehistoric and early historic Caddo ceramic assemblages. The study of Caddo ceramics has also provided crucial insights into chronological and temporal issues, social relationships, culinary traditions, the context of ceramic manufacture and production, and exchange/interaction between Caddo groups.

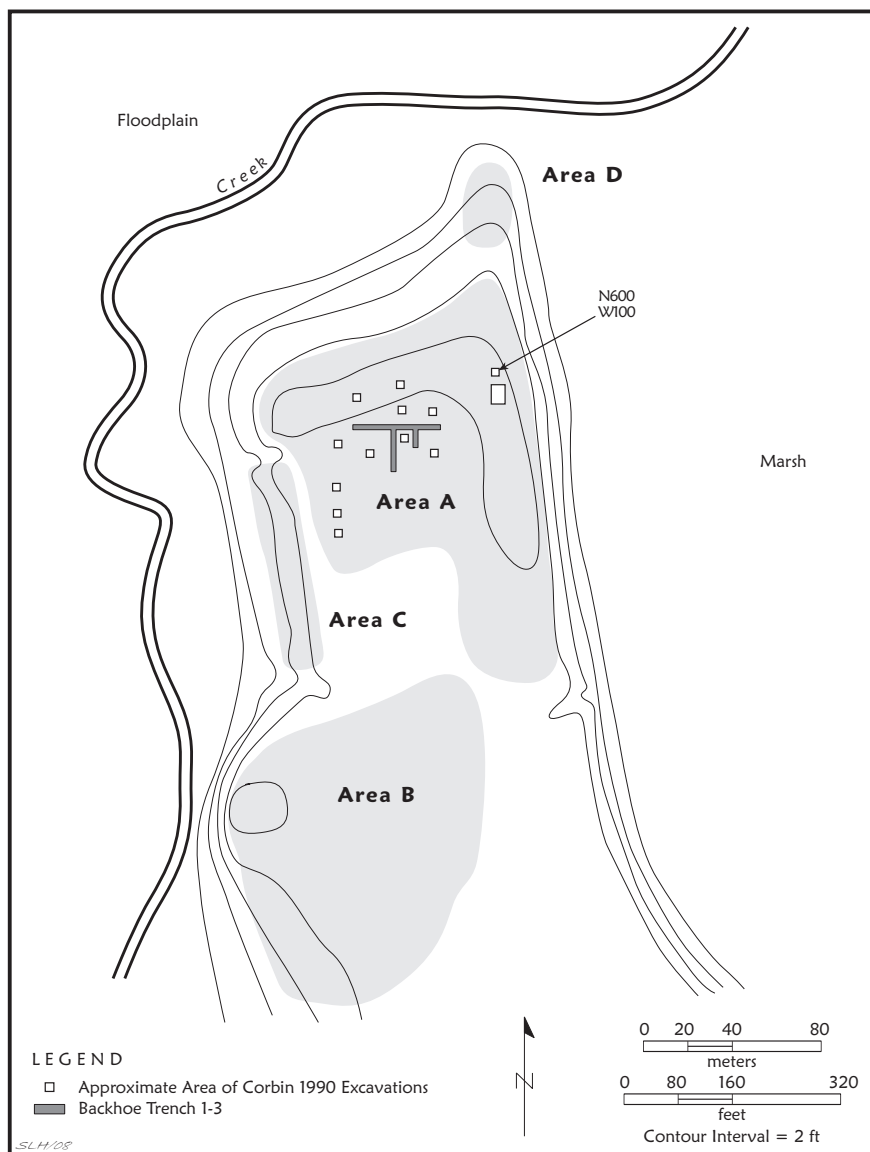
In this issue, the majority of the articles are concerned with fully describing and placing on record the assemblages of Caddo ceramics found on Late Caddo (Frankston phase) and Historic Caddo (Allen phase) sites in the upper and middle Neches and Angelina River basins in Northeast Texas. This emphasis on post-A.D. 1400 Caddo plain and decorated ceramic wares has been occasioned by the recent study of a large assemblage of sherds and vessels from TxDOT-sponsored excavations at the

Lang Pasture site (41AN38) on the upper Neches, and the opportunity as part of that study to reexamine sherd assemblages and vessels at the Texas Archeological Research Laboratory, The University of Texas at Austin, and in private collections, as part of a broader effort to define an upper Neches River Caddo ceramic tradition (Perttula 2008). The issue also includes a study of pre-A.D. 900 Woodland period ceramics from the Browning site (41SM195A) in the upper Sabine River basin, and a summary of the Nasoni Caddo ceramics from Mission San Jose de los Nasonis (1716-1719, 1721-1730). This summary is based on a detailed analysis of the extensive Bill Young collections from the site.

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# Journal of Northeast Texas Archaeology



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# Prehistoric Ceramics from the Browning Site (41SM195A)

*Mark Walters*

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Archaeological work at the Browning site (41SM195A) in eastern Smith County, Texas, has shown that it is a stratified site with two very distinct occupations: an early nineteenth century assemblage of artifacts in the upper zone overlying a buried prehistoric occupation (Walters 2004a, 2004b). This occupation appears to be confined to the Woodland time period (ca. 500 B.C. to A.D. 800) with little evidence of any earlier or later prehistoric activity. The Woodland period in East Texas is a time of important cultural changes, “the most obvious (and most important?) of which is pottery-making and the bow and arrow” (Story 1990:243-249).

The main focus of the prehistoric occupation at the Browning site occurs in an organically enriched darker soil zone that is the result of either a continuous human occupation or frequent revisiting of this location, what Waters (1996) has described as archaeo-sediments resulting from human activity. This darker soil occupies the center of the landform and covers approximately 500 m<sup>2</sup>. It contains charred wood, charred nut shell, lithic debris from stone tool manufacture/maintenance, and small amounts of burned and unburned animal bone. Other artifacts in this distinct soil zone include small dart points, mostly varieties of Gary; arrow points, mostly of the Friley and Steiner types; ground stone tools; and ceramics, primarily plain grog-tempered wares.

Early work at the site included the excavation of 6.546 m<sup>3</sup> of archaeological deposits from 10 1 x 1 m test units plus 22 shovel tests, resulting in the recovery of numerous historic and prehistoric artifacts, including eight Woodland period sherds (Walters 2004a, 2004b). To date, excavations at the Browning site have totaled 20.4 m<sup>3</sup> of archaeological deposits from 41 1 x 1m test units. The total amount of sherds associated with the Woodland occupation now totals 40 pieces. Those sherds, which are described in some detail and compared with other known sites, are the focus of this article. These

sherds are scattered evenly across the occupation area in low densities.

## STRATIGRAPHY

To shed some light on the sequence of events at the Browning site, specifically the introduction of new technology—such as the advent of the bow and arrow or the introduction of pottery—I compare the relative depth of pottery sherds, arrow points, and dart points in the archaeological deposits. To do this, I am assuming that the archaeological deposits on the landform are uniform in depth across the site, which they are not, resulting in some compression of the archaeological deposits in certain areas where the soils are thinner. However, 65% of the sherds are found from 20-40 cm bs, whereas 58% of the dart points are found at the same depths. By comparison, 57% of the arrow points also are found from 20-40 cm bs, with an additional 26% found from 40-50 cm bs. Thus, vertical stratification in the Browning site archaeological deposits indicates no significant differences in the depth of the dart points, arrow points, and ceramics, suggesting that these material remains are of the approximate same age in the Woodland period component; the number of arrow points found below 40 cm bs also suggests that at the time of the initial occupation of the site, the Woodland period group had already adopted arrow points.

## ASSOCIATED STONE TOOLS

Friley and Steiner are the most commonly recognized types of arrow points of the 35 arrow points that have been collected at the Browning site to date. Other stone tools include flake tools, seven ferruginous sandstone ground stone tools, and 12 dart points, with small Gary points the most common type (Webb et al. 1969). Dr. Harry Shafer is

conducting a detailed analysis of the lithic artifacts from the site.

The 47 arrow and dart points occur at a density of 2.3 per m<sup>3</sup>. Recent excavations (11.35 m<sup>3</sup>) at Leaning Rock (41SM325), a nearby Caddo site that dates to the mid 14<sup>th</sup> century, yielded a total of 12 arrow and dart points or only 1.06 points per m<sup>3</sup> of archaeological deposits (Shafer 2007). This difference suggests that through time in this part of East Texas, from the Woodland period through the Middle Caddo period, stone artifacts decrease as a percentage of the total artifacts in archaeological assemblages, probably because of an increased reliance by local populations on plant foods (especially maize) through time.

#### **DATING OF THE BROWNING SITE**

A sample of charred nutshell (C13/C12=-25.3) (6.9 grams) collected from near the bottom of the archeological deposits in Unit 1 (40-50 cm bs) was submitted for radiocarbon dating by Beta Analytic, Inc. The conventional age of the sample (Beta-170727) is 1310 ± 70 B.P. The calibrated intercept is AD 685, and at two sigma, there is a 95% probability that the calibrated age of the charred nutshell falls between AD 625 to 880.

Oxidizable Carbon Ratio (OCR) samples were also collected from Unit 1. The OCR samples were collected in a column starting at 11 cm bs and continuing at 10-15 cm intervals levels to 56 cm bs. The OCR dates from the midden zone (26-46 cm bs) indicate that the sediments comprising the midden began to form after about A.D. 145, with the dates of ca. A.D. 357-815 indicating when the Browning site was most intensively occupied in prehistoric times.

A second radiocarbon sample (a charred nutshell, 13C/12C=-24.0) was submitted in 2008 to Beta Analytic (Beta-244134) for AMS dating from Unit 33, 39 cm bs. The conventional age is 830 ± 40 B.P. The calibrated intercept is AD 1220. At two sigma, there is a 95% chance that the age falls between AD 1160 to 1270. Based on the artifacts collected from the Browning site and the other supporting radiocarbon and OCR dates, this date appears to be several hundred years too young. Experience has shown that multiple dates (ca. 10 or more) are needed to accurately date prehistoric occupations. Hopefully, more dates can be obtained down the road that will form a better picture of the

age span when the Browning site was occupied by prehistoric peoples. Toward that effort a plain rim sherd from Unit 38, 28 cm bs, has been submitted in October 2008 to the University of Washington for thermoluminescence (TL) dating.

#### **PREHISTORIC CERAMICS FROM THE BROWNING SITE**

From excavations to date, a total of 40 prehistoric sherds have been collected from the Browning site. This is a density of 0.98 sherds per m<sup>2</sup> and 1.96 sherds per m<sup>3</sup>. The 40 sherds, including two rims, have an average thickness of 6.5 mm, with a range from 4.2 mm to 11.3 mm; 11 sherds are less than 5 mm thick. No recognizable bases have been collected.

#### **Surface treatment**

The sherds are well-made and 85% have exterior/interior smoothed surfaces. Three (7.5%) of the sherds are smoothed only on the exterior surface, and one (2.5%) sherd is burnished on the exterior surface. Two (5%) sherds are eroded, prohibiting any positive identification regarding surface treatment.

#### **Temper**

Twenty-eight (70%) of the sherds are grog-tempered. Another 15% have grog/hematite temper. Four (10%) have a combination of grog and bone as tempering agents; none of these sherds have an abundance of bone. Two (5%) sherds have no discernible temper.

Sixteen (40%) of the sherds have a sandy paste evidenced by the visual appearance of varying amounts of quartz grains in the clay matrix, although there is not enough sand present to make the sherds feel "gritty." Some amounts of sand are to be expected in the clay paste of local ceramics, as most clay sources in the area are primary clays derived from the sandstone parent material underlying this portion of East Texas.

#### **Firing**

Twenty-six (65%) of the sherds have been fired and cooled in a reduced oxygen atmosphere. Thirteen (32.5%) were fired in a reducing atmosphere, and then allowed to cool in the open air. One sherd (2.5%) was completely oxidized during firing.



### Hardness

Ten sherds collected at random from the Browning site collection have hardness values that range from 2.5 to just over 4.0 on the Moh scale, with a mode of 3.2. This compares to Williams Plain sherds, which tend to be soft and chalky, with a mode of 2.5. (Schambach 1998:24). Sherds from local Caddo sites average 3.3 in hardness (Walters 2008:46-48).

### Decoration

With a plain to decorated sherd ratio of 5.67, six (15%) of the sherds at the Browning site are decorated. Three body sherds have single straight incised lines, while two sherds had two parallel straight incised lines; the distance between the incised lines ranges from 12.2-13.0 mm. The decorated rim, from Unit 37, 10-20 cm bs, has a single straight horizontal incised line on it that is 8.0 mm below the lip, 1.5 mm wide, but does not overhang.

### Vessel Form

Unfortunately, the small number and size of the 40 sherds contribute little information on the types of vessels made and used at the Browning site. Nevertheless, all of the sherds indicate that the vessels were made using coil construction, and all but two sherds have evidence of smoothing on the exterior and/or interior surfaces, indicating that the sherds are from vessels that are open containers, namely jars and bowls, as opposed to bottle forms, whose walls could be readily smoothed.

No identifiable bases were recovered so it could not be determined if the vessel bases were flat or rounded. One sherd from Unit 27 (30-40 cm bs) may be a portion of a base as part of the sherd has a slight curve and thickened from 7.0 mm to 8.61 mm.

One small rim (Unit 37, 10-20 cm bs) has a direct or vertical profile with a rounded but slightly exterior folded lip. No estimate of orifice diameter was possible, although the smoothing of both interior and exterior surfaces indicate it is from an open container. Sherd thickness tapered from 3.9 mm at the lip to 4.9 mm on the vessel body wall where the break occurred. This is typical of coil construction where the vessel is built from the bottom up, resulting in vessel walls that become thinner with height.

The second rim (Unit 38, 28 cm bs) is from what appears to be a plain carinated bowl. The break occurs

just below the carination point but enough remains of the rim to indicate a sharp 30-40° angle from the rim and the remainder of the body of the vessel. The rim is direct and tapers from 3.9 mm thick at the lip to 6.0 mm at the carination point on the vessel wall. The orifice diameter of the carinated bowl is 18.0 cm. This sherd has been submitted for TL dating.

### Instrumental Neutron Activation Analysis (INAA)

Two sherds from the Browning site were submitted for INAA (Walters 2004a, 2004b) Both sherds were assigned at the time to the Titus chemical group (Descantes et al. 2003:Table 5; Perttula 2002:92-94), suggesting that the sherds were from vessels made from local clays.

### COMPARISON WITH OTHER WOODLAND SITES

The Broadway site (41SM273) is located in central Smith County, Texas, some 10 miles west of the Browning site. A late Woodland period occupation (dating after ca. A.D. 500/600) was identified from the work there (Perttula and Nelson 2004:155-161), as were later Caddo components. In this report, Perttula defines a Mill Creek Culture, in the Sabine River basin of East Texas, that is contemporaneous with the Fourche Maline and Mossy Grove cultures to the south and north (Figure 1). At the Broadway site, the few ceramics associated with the Woodland occupation were primarily grog-tempered, but with significant amounts of bone and hematite. The sherds at Broadway averaged about 7 mm in thickness, not much different from the average thickness of 6.5 mm from the Browning site. Approximately 13% of the sherds were decorated with simple incised elements and tool and fingernail punctations compared to 15% of the sherds at the Browning site that have incised decorations. Stone tools associated with the Woodland occupation at Broadway include small dart points, mostly of the Gary type, and Steiner/Friley arrow points.

The Herman Bellew site (41RK222) is located some 20 miles southeast of the Browning site. Extensive excavations there defined a Woodland occupation that dated between 200 B.C. and A.D. 800. Ceramics at the Herman Bellew site were sparse, averaging 1.3 sherds per m<sup>2</sup> compared to 0.98 sherds per m<sup>2</sup> at the Browning site. Most of

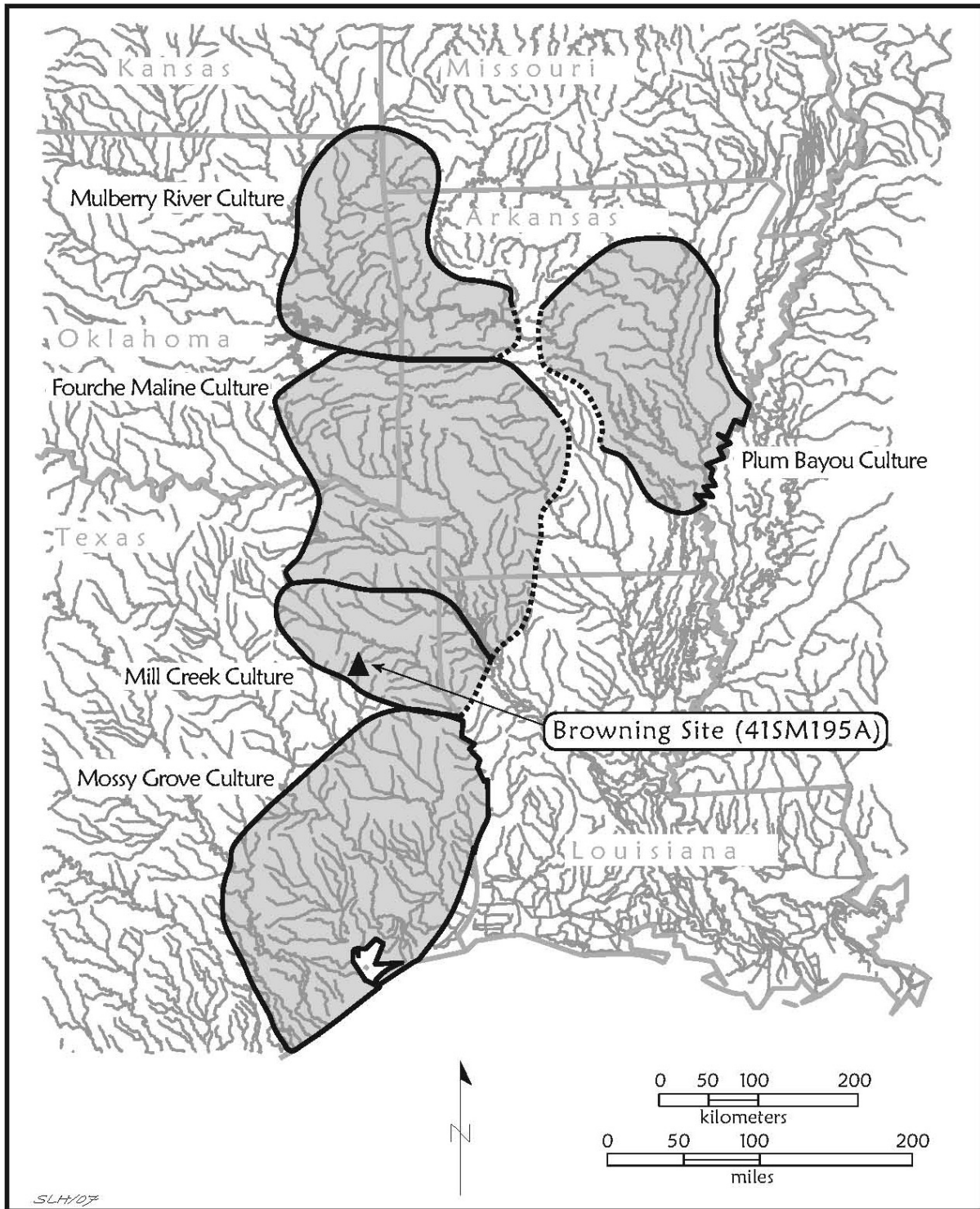


Figure 1. Map of Woodland cultures in the Caddo area, including the Mill Creek Culture, and the location of the Browning site in East Texas.

the sherds at the Herman Bellew site were plain, and with a mix of sandy paste wares, bone-tempered wares, and thinner grog-tempered wares, those being identified with the post-A.D. 400 occupation (Rogers et al. 2001). Decorations on the sherds were primarily simple punctated and incised elements. Associated stone tools included several varieties of Gary points with a few Kent and Ellis dart points, and after A.D. 600/700 there were Friley arrow points.

The Dogwood Trail No. 1 site (16BO574), some 75 miles east of the Browning site, is situated near the edge of the floodplain of a small, unnamed tributary of the Red River in northern Bossier Parish, Louisiana (Girard 2005). The site consists of a scatter of prehistoric pottery and stone artifacts from a single prehistoric component. One radiocarbon date yielded an age of  $1484 \pm 41$  B.P. (UGA00880, wood charcoal,  $\delta = -24.8$ ), with a calibrated age at two sigma of AD 531 to 650, indicating occupation early in the Late Woodland period.

Of the 1205 recovered sherds, only seven (0.6%), were decorated. The rarity of decorations on the pottery distinguishes the collection from later Caddo occupations in Northwest Louisiana and East Texas.

Five of the decorated sherds are body sherds with incised lines that most likely are horizontal. One specimen appears to have either linear punctations beneath a horizontal line or incised lines in two directions. Another specimen has at least one horizontal incised line 7.5 mm below the lip. The sherd appears to be from a bowl and there are two lip lines on the flat vessel lip. Although the surfaces are not polished and the lines do not overhang, the sherd resembles either the *Campbellsville* or *Macedonia* varieties of the type Coles Creek Incised (Phillips 1970:71,75; Girard 2005). Two parallel curvilinear incised lines are present on one small sherd, and the decorative element cannot be ascertained. The final decorated specimen has a series of short curved incised lines or punctations just below the lip.

The mean thickness of the sherds from the Dogwood Trail No. 1 site is high (7.593 mm) relative to most later Caddo sites in the area, but within the lower range reported for the type Williams Plain (cf. Schambach 1998:Tables 4 and 10). Most of the sherds are between 6 and 9 mm thick, with a mode of 7 mm. Sherd thickness is comparable to that from the early occupation at the Festervan site (16BO327) in the Red River floodplain where a mean sherd thickness of 7.32 mm was measured on a collection of 632 sherds. A radiocarbon date from this context

calibrates at 2 sigma to the AD 657-894 interval (Girard 1994). In contrast, Early to Middle Caddo period sites generally have collections with mean sherd thickness less than 7 mm.

The sherds have grog and sand inclusions and 51 (4.2%) also have crushed bone. Three small sherds may be from vessels with relatively sharp-angled shoulders.

All of the six arrow points recovered from the Dogwood Trail No. 1 site are broken or crudely chipped. One probable Catahoula point (Webb 2000:15) has deep corner notches, barbed shoulders, and an expanding stem. Similar arrow point forms have been found in other Late Woodland period contexts at the Fredericks and Onion Island sites (Girard 1994, 2000).

## DISCUSSION

The material culture from the Woodland period component at the Browning site is characterized by a large number of stone tools, mostly small Gary dart points and numerous well-made Friley and Steiner arrow points, and only a small amount of mostly plain grog-tempered sherds. Based on only a few absolute dates, the presence of arrow points in apparent association with contracting dart points, and a limited amount of ceramics, it is difficult to accurately understand the place of the Browning site in a Woodland period culture or to determine when or how long it was occupied.

The Browning site falls within the geographic area of the Mill Creek Culture (Perttula and Nelson 2004). With the small number of sherds, and their general character, the sherds from the Browning site also has cultural traits that have been identified on other Mill Creek Culture components in East Texas. What is very evident is the meager amount of ceramics at the Browning site when compared to later Caddo sites in the area that are distinguished by their sheer volume of sherds. At the Browning site, the sherd density is only 1.96 sherds per  $m^3$ . By comparison, in excavations at the Leaning Rock (41SM325) Caddo site, the sherd density is 280.4 sherds per  $m^3$  (Walters 2008). It is uncertain why there are so few sherds represented at Mill Creek Culture sites compared to that seen on Fourche Maline (Schambach 1998) or Mossy Grove sites (Story 1990), but evidently ceramics played a minor role in the lives of the people that lived at the Browning and other Mill Creek sites.

It is noteworthy that the ceramics at the Browning site closely resemble later Caddo ceramics in thickness, surface treatment, firing, and hardness, and to some extent with respect to vessel decoration, and they would be very hard to separate from the ceramic sherds on any nearby Caddo assemblage. However, with a small amount of sherds, it might be difficult to also distinguish between the Browning site grog-tempered ware and Williams Plain, the principal pottery type in Fourche Maline culture sites, although Williams Plain is defined as having a coarse texture, a relatively soft paste, and are generally thicker (average body sherd thickness=8.0 mm), with heavy disk-shaped or square bases (Schambach 1998:24-26).

Evidence from the Browning site and the Dogwood Trail No. 1 site suggests that the carinated bowl form, usually defined as a Caddo ceramic trait, may have an earlier history than previously thought since possible carinated bowl sherds are present at both these Woodland period components. Carinated bowl sherds have also been identified in a Mossy Grove Culture component in Nacogdoches County in East Texas (Timothy K. Perttula, October 2008 personal communication).

It will be interesting to follow future work at East Texas Woodland sites and see if and/or how the diverse Woodland cultures that have been defined in the area—Fourche Maline, Mossy Grove, and Mill Creek—evolved into what we have defined archaeologically as Caddo culture.

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# Prehistoric Caddo Ceramics from the Henry Lake Site (41CE324), Cherokee County, Texas

*Timothy K. Perttula and Tom Middlebrook*

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## INTRODUCTION

This article discusses the character of the Caddo ceramics from a single component Frankston phase (ca. A.D. 1400-1650) occupation at the Henry Lake site (41CE324) in northwestern Cherokee County, Texas. This follows a brief discussion of the history of the site, and we conclude this article with a consideration of the temporal and cultural place of the site's Caddo ceramic assemblage within the upper Neches River basin.

### Discovery of the Site

A Mr. Joe Bob Staton of Jacksonville, Texas, discovered the Henry Lake site in June 1995 during the course of constructing a road on his property that ran from Cary Lake to Henry Lake, paralleling the Neches River floodplain. Caddo ceramic sherds were noted and collected by Mr. Staton's crew in the roadway (Swanson and Middlebrook 1996).

Mr. Staton contacted the chairman of the Cherokee County Historical Commission, John Allen Templeton, about the find, who subsequently notified the Office of the State Archeologist at the Texas Historical Commission. In July 1995, Gladys Swanson and Tom Middlebrook, both Stewards of the Texas Archeological Stewardship Network, visited the site with Mr. Staton, obtained a surface collection of archaeological materials (primarily Caddo ceramics, but also 14 pieces of lithic debris, five small pieces of animal bones, and five pieces of mussel shell), and officially recorded the site. There have been no archaeological investigations at the Henry Lake site since July 1995. In early 2008, the Caddo ceramics

from the site were examined in detail as part of the on-going analysis of Frankston and Allen phase ceramic assemblages in the upper Neches River basin (see Perttula 2008).

The Henry Lake site is on a wooded lower toe slope (300 ft. amsl) or natural rise landform, overlooking the Neches River floodplain about 1.25 km east of the current channel of the Neches River; it is ca. 11 km south of the Lake Palestine dam. The overall extent of the Henry Lake site is estimated at 100 x 75 m, or 1.85 acres.

There are steep uplands and small mountains paralleling the river floodplain, and these crest at 450 ft. amsl atop Cary Lake Mountain, not far south of the site. This area is part of the Boggy Creek salt dome, and the broad floodplain here is marked by several relict channels of the Neches River, including Cary Lake and Henry Lake; this natural lake is ca. 320 m northwest of the site.

### The Henry Lake Site Ceramic Assemblage

The Henry Lake site Caddo ceramic assemblage consists of 279 sherds, 188 (68 percent) of which

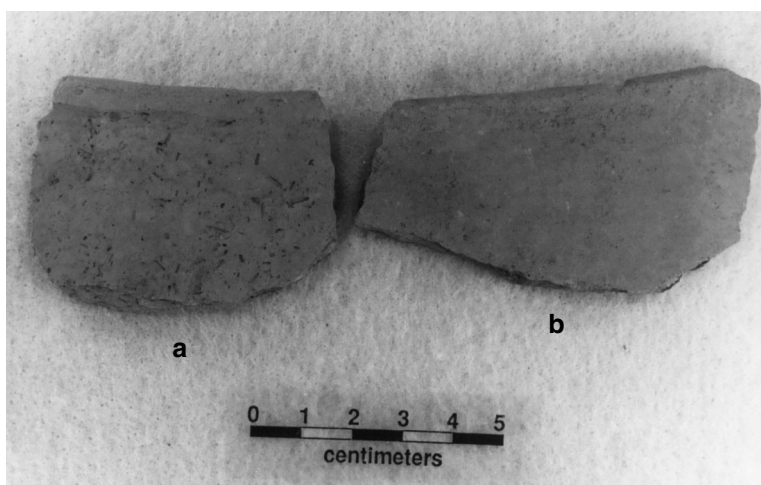


Figure 1. Plain rim sherds.

have a decorated exterior surface, and the other 91 sherds are undecorated or plain (Appendix 1). The plain sherds include four rims (Figure 1a-b), one bottle neck, 79 body sherds, and seven base sherds. The plain/decorated sherd ratio (P/DR) is a low 0.48.

The decorated sherds from Henry Lake are dominated by utility wares, coarsely-tempered and relatively thick vessels that were used for cooking and storage tasks. These utility ware vessels were decorated prior to their being fired (i.e., wet paste decorations). Utility ware decorated sherds comprise 89.4% of the decorated sherd assemblage (Table 1), but only 41.7% of the rims. Vessel sherds from decorated fine wares (i.e., thin, well-fired, and finely-tempered, with engraved decorations) account for 10.6% of the Henry Lake sherds, but 58.3% of the rims. This disparity in the proportions of total number of utility ware vs. fine ware sherds and the proportions of utility ware and fine ware rims is typical of Late Caddo ceramic assemblages. Late Caddo utility ware vessels are relatively large in size and decorated surface area, and tend to be decorated on both the rim and much of the body (but not always with the same decorative method),

and when they are fragmented, they produce sherd assemblages with high ratios of decorated utility ware body sherds to decorated rim sherds (30.6:1 at Henry Lake). The overall smaller fine ware vessels tend to be decorated only on the rim (including the lower part of the rim, here characterized as a body sherd because the lip and much of the upper part of the rim is missing), and decorated body to rim sherd ratios are correspondingly lower (1.9:1).

More specific decorative elements are recognized within each of the broad decorative method categories in the Henry Lake ceramic assemblage (Table 2). Starting with the utility wares, with the incised sherds, the decorative elements are simple straight and geometric designs (Figure 2a-c), probably from Maydelle Incised jars (Suhm and Jelks 1962:Plate 52). They include one horizontal incised jar with a 57 mm long strap handle attached on the vessel rim. Brushed sherds include vertical brushing marks on the rim and body of Bullard Brushed jars (Suhm and Jelks 1962:Plate 11) (Figure 3), along with parallel brushing marks (Figure 4a-b), although a few have overlapping brushing on vessel bodies. One carinated bowl has a horizontal brushed body; the rim on this vessel likely has an engraved

**Table 1. Henry Lake site decorated sherds.**

Decorative Method	Rim	Body	N
<b>Utility ware</b>			
Brushed	2	139	141
Brushed-incised	–	11	11
Brushed-punctated	–	2	2
Incised	1*	6	7
Tool punctated	1	–	1
Fingernail punctated	–	3	3
Pinched	1	2	3
Subtotal	5	163	168
<b>Fine ware</b>			
Engraved	7	11	18
Engraved-brushed	–	2	2
Subtotal	7	13	20
Totals	12	176	188

\*handle



**Table 2. Decorative elements in the utility ware and fine ware ceramics from the Henry Lake site.**

Decorative Method	Decorative Element	N
<b>Utility ware</b>		
Incised	horizontal incised, rim and handle	1
	single straight incised line, body	1
	opposed incised lines, body	1
	parallel incised lines, widely-spaced, body	1
	parallel incised lines, closely-spaced, body	1
	cross-hatched incised lines, body	2
	Brushed	vertical brushed, rim
vertical brushed, body of carinated bowl		1
vertical brushed, body		4
overlapping brushed, body		6
horizontal brushed, body of carinated bowl		1
parallel brushed, body		127
Brushed-Incised		parallel brushed and overlapping parallel incised lines, body
	parallel brushed-incised, body	4
	parallel brushed-curvilinear incised line, body	2
Brushed-Punctated	tool punctated row above vertical brushing, rim	1
	tool punctated row above horizontal brushing, body	1
Punctated	rows of tool punctations, body	1
	rows of fingernail punctations, body	3
Pinched	vertical pinched rows, rim	1
	vertical pinched rows, body	2
<b>Fine ware</b>		
Engraved	broad horizontal engraved line, rim (cf. Hood Engraved)	1
	single straight engraved line, body	3
	parallel engraved lines, body	1
	opposed engraved lines, body	1
	broad curvilinear engraved lines, body	1
	single curvilinear engraved line, body	2
	scroll, rim	1
	scroll, body	1
	hour glass-shaped panel divider, body	2
	horizontal engraved line and hour glass-shaped panel divider, rim	3

**Table 2.** (Continued)

Decorative Method	Decorative Element	N
<b>Fine ware</b>		
	arcs of curvilinear panel divider, rim	2
Engraved-Brushed	single horizontal engraved line above horizontal brushing, body of carinated bowl	1
	horizontal and diagonal engraved lines above opposed brushed on body	1

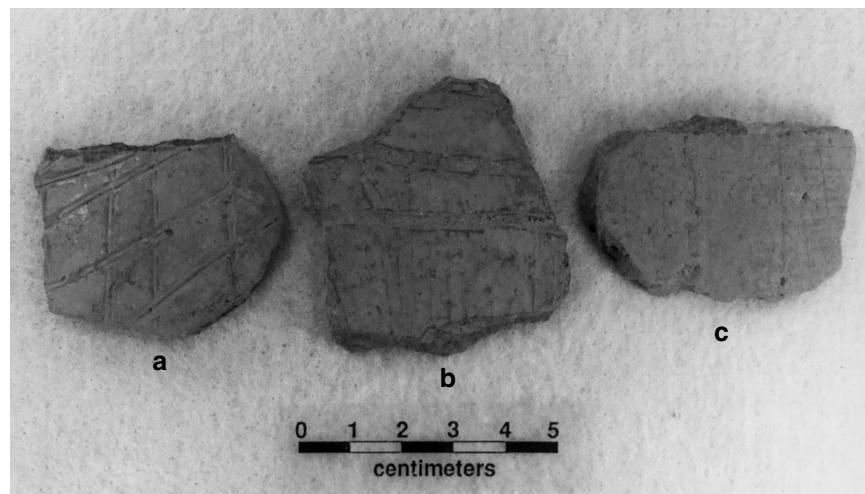


Figure 2. Incised body sherds: a-b, cross-hatched; c, parallel lines.

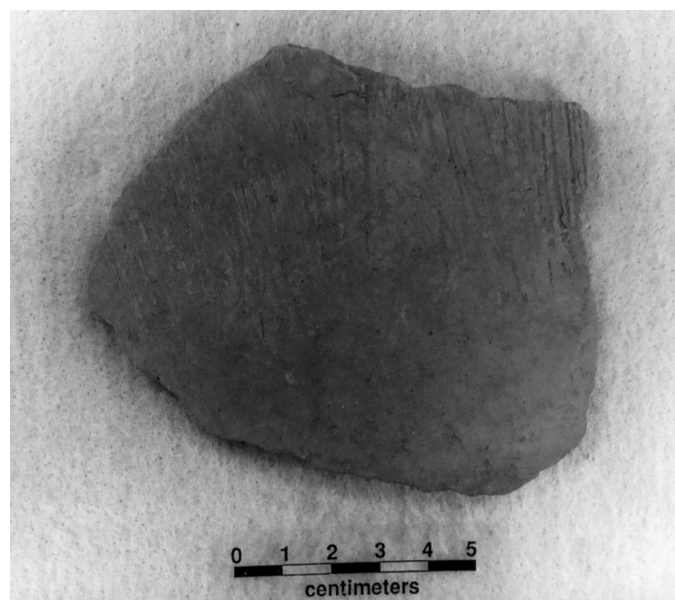


Figure 3. Vertical brushed body sherd.

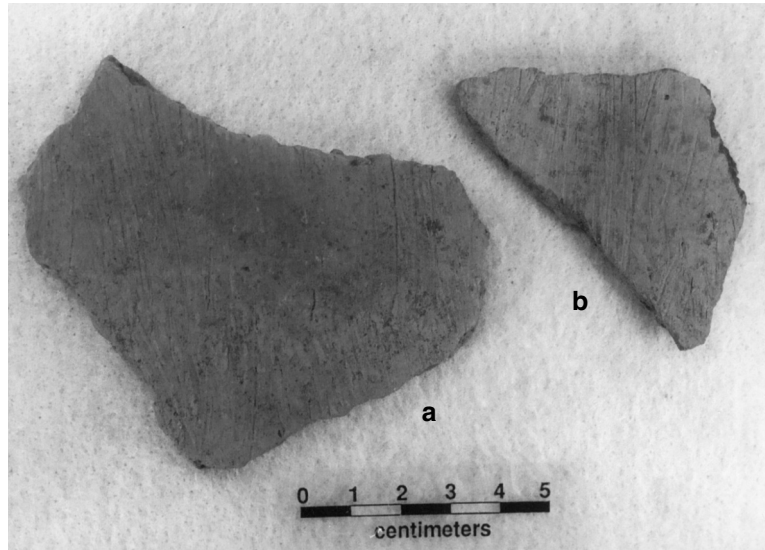


Figure 4. Parallel brushed body sherds.

motif (see below). Brushed-incised decorations at the Henry Lake site appear to be confined only to the body of utility ware vessels. In the case of the brushed-punctated sherds, they are from Bullard Brushed vessels (see Suhm and Jelks 1962:Plate 11a-b) with horizontal or vertical brushing marks on the vessel body and at least one row of tool punctations on the rim, beginning at the rim-body juncture (Table 2).

Tool and fingernail punctated sherds appear to be from vessels where rows of punctations covered the vessel body (see Table 2), but it is likely the case that rows of punctations occur on vessel rims as well, either as the sole decoration (Figure 5b-d), or in conjunction with brushed or brushed-incised vessel bodies. There are three Killough Pinched rim and body sherds in the Henry Lake decorated sherds (Figure 5a, e); rows of pinching typically covered the entirety of the exterior vessel surface of Killough Pinched jars (Suhm and Jelks 1962:Plate 46f-g, h, j).

A few of the engraved fine ware sherds have simple straight, geometric, or curvilinear elements, including one rim with a broad horizontal engraved line that is probably from a Hood Engraved effigy vessel (cf. Pertula 2008). The other engraved sherds are from Poynor Engraved bowls and carinated bowls (Suhm and Jelks 1962:Plate 62). Two have portions of engraved scrolls (Poynor Engraved, *var. unspecified*) (Figure 6b-d), two others have finely executed arcs of engraved lines forming ovals on a rim panel (Poynor Engraved, *var. Cook*) (Figure

7b), and five have hour glass-shaped engraved and excised panel dividers that form negative ovals on a rim panel (Poynor Engraved, *var. Hood*) (cf. Pertula 2008) (Figures 6a, c and 7a).

The Caddo ceramics from the Henry Lake site are almost exclusively tempered with grog (99%), namely crushed sherds and pieces of fired clay. Some 22.1% of the sherds also have pieces of crushed hematite or ferruginous sandstone that have been added to the paste, and another 3.2% have burned bone temper (see Appendix 1). The vessels from the site typically have a clay or silty paste, and only 6.3% of the sherds (primarily from plain body sherds or brushed vessel sherds) are from vessels with a sandy paste; these sherds likely came from vessels made with a naturally sandy clay. Another four sherds (4.2% of the detailed sherd sample) have a notable reddish-pink paste color, dubbed “pinkware” in the 41AN38 ceramic analysis; “pinkware” has been identified in a few other upper Neches River basin sites (Shawn Marceaux, personal communication, 2008). These particular “pinkware” sherds—three brushed sherds and a plain rim from the Henry Lake site—must be from vessels made from a distinctive but localized upper Neches River basin clay source.

The Henry Lake ceramic sherds are from vessels fired primarily in a reducing or low oxygen environment, particularly the fine wares (92.8%). Among the plain sherds, 75% were fired in this manner, compared to 64.2% of the decorated utility wares (see Appendix 1). The utility ware

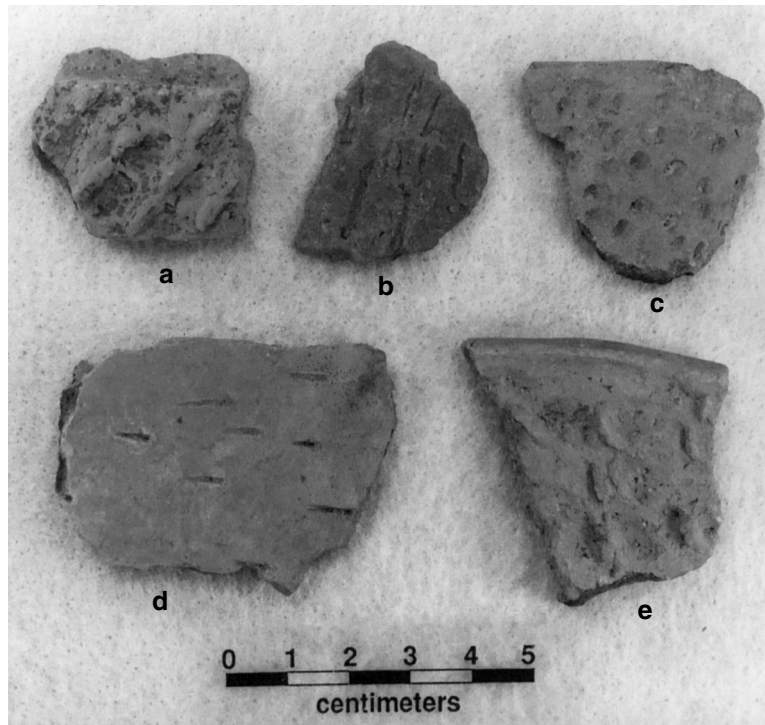


Figure 5. Punctated and pinched sherds: a, e, Killough Pinched; b, d, fingernail punctated; c, tool punctated.

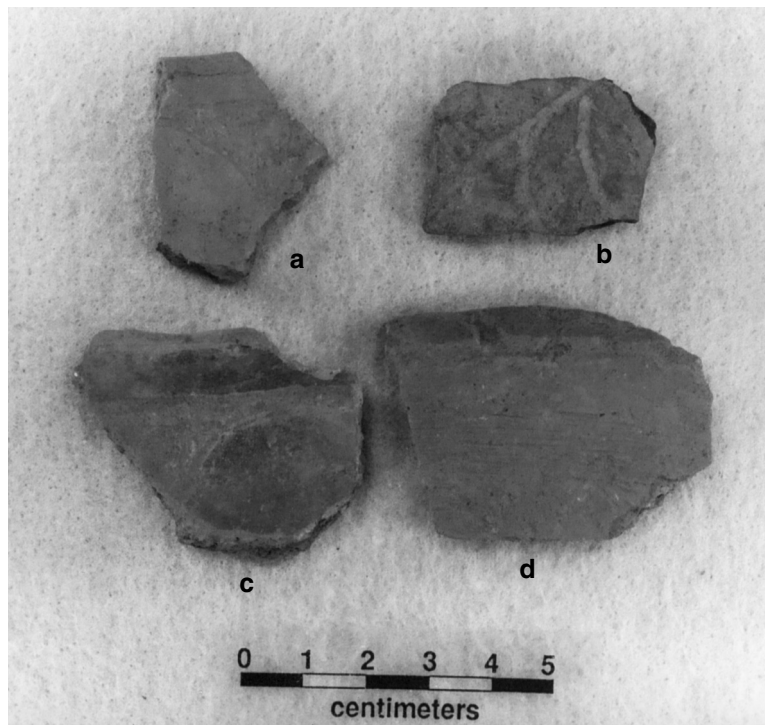


Figure 6. Engraved sherds: a, c, Poynor Engraved, *var. Hood*; b, d, engraved scrolls.

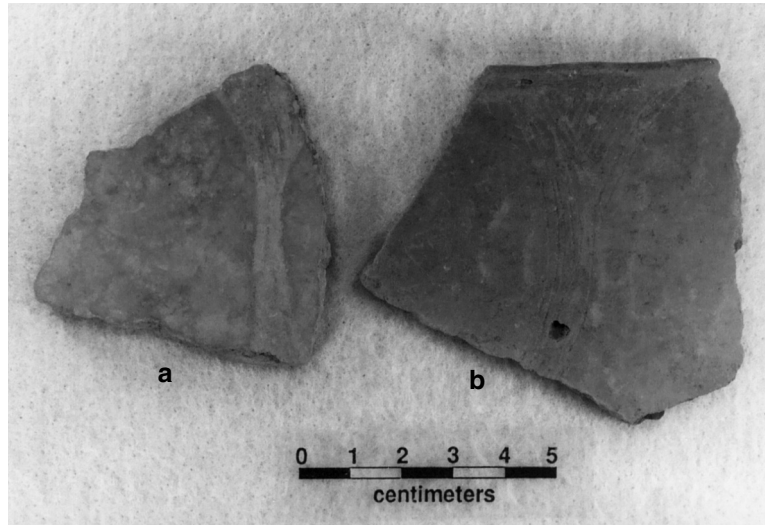


Figure 7. Poynor Engraved: a, Poynor Engraved, *var. Hood*; b, Poynor Engraved, *var. Cook*.

sherds were from vessels that were also commonly fired in a high oxygen or oxidizing environment (9.4%) or were incompletely oxidized during firing (26.4%).

Many of the plain and decorated sherds from the Henry Lake site have smoothed or burnished interior and/or exterior vessel surfaces (see Appendix I). In part, this is likely the product of the context in which the sherds had accumulated—a midden deposit that would have lessened the degradation of the surface condition of buried sherds—as well as the fact that most fine wares have interior and exterior smoothed or burnished surfaces and many of the utility ware vessels were smoothed on their interior vessel surfaces.

#### UPPER NECHES RIVER BASIN CERAMIC TRADITIONS

The Henry Lake site ceramics are from a Late Caddo Frankston phase (ca. A.D. 1400-1650) occupation. They include several varieties of Poynor Engraved, the principal fine ware of the Frankston phase (Suhm and Jelks 1962:123), a Hood Engraved or effigy vessel sherd, and sherds from several vessels of Maydelle Incised, Bullard Brushed, and Killough Pinched (see Table 2).

How does the decorated sherd assemblage from the Henry Lake site compare with other upper Neches River basin Caddo sites, and can that comparison provide more specific hints about when

the site was occupied within the 250 year span of the Frankston phase? Comparisons of the composition of upper Neches River basin Caddo decorated sherd assemblages—and the temporal orderings and cultural affiliations they imply—are based on a mix of stylistic and technological attributes. These attributes include the percentage of brushed sherds in the decorated sherd sample from each site, the percentage of bone temper in the assemblages, the percentage of wet-paste decorations other than brushing (i.e., incised, punctated, appliqued, neck-banded, etc.), the plain/decorated sherd ratio (P/DR), and the brushed sherd/wet paste decorated sherd ratio (Table 3).

From these comparisons, five different groups of assemblages have been defined in a seriation of Lake Palestine sites (Anderson et al. 1974; Gilmore 1983) as well as other nearby and recently studied Caddo sites (i.e., 41AN38 and 41CE354) with large decorated sherd ceramic assemblages (Perttula and Nelson 2007; Perttula et al. 2007) (see Table 3). These five groups seem to reflect temporal changes due to the high frequency of Late Caddo Frankston phase decorated types, such as Poynor Engraved, Maydelle Incised, Bullard Brushed, Hume Engraved, and engraved effigy vessels, that are found in the Groups I-III sites—which includes the Henry Lake site—and the occurrence of Early and Middle Caddo types such as Canton Incised, Dunkin Incised, Holly Fine Engraved, Pennington Punctated-Incised in the Group IV and V sites; no Sanders phase pottery types (i.e., Sanders Engraved, Monkstown

**Table 3. Comparative sherd assemblage data from selected upper Neches River basin Caddo sites.**

Site	No. of Dec. Sherds	% Brushed*	% bone-temper	% Wet-paste decorations	P/DR	Brushed/Wet paste ratio
<b>GROUP I</b>						
41CE354	474	82.7	3.1	8.9	0.20	8.14
<b>Henry Lake</b>	<b>188</b>	<b>81.9</b>	<b>3.2</b>	<b>7.3</b>	<b>0.48</b>	<b>11.0</b>
Debro	311	80.0	?	10.3	0.14	7.75
William						
Sherman	525	75.8	?	16.2	0.44	4.68
<b>GROUP II</b>						
Forest						
Drive	1693	68.6	?	21.9	0.56	3.12
Halbert	1757	65.8	2.6	26.3	0.70	2.51
Woldert	1730	62.7	0.0	28.8	0.72	2.19
Ferguson	4116	60.8	<1.0	27.9	0.61	2.17
<b>GROUP III</b>						
Tomato						
Patch	912	49.2	?	41.7	1.50	1.21
41AN38	2435	35.9	6.7	38.0	1.40	0.91
Mitchell, D	54	32.1	0.0	33.3	1.37	1.50
<b>GROUP IV</b>						
White Mule	1404	18.5	1.5	63.7	2.61	0.29
41HE139	40	17.5	8.1	65.0	2.51	0.33
<b>GROUP V</b>						
Mitchell, A-C	56	1.3	12.0	65.7	1.71	0.03

P/DR=plain/decorated sherd ratio

\*% brushed represents the percentage of brushed sherds among all the decorated sherds.

Fingernail Impressed, Maxey Noded Redware) were recovered in any of these sites. Furthermore, it has been shown in several other ceramic studies in northeastern Texas that the proportion of brushed sherds in decorated sherd assemblages steadily increases through time, beginning after ca. A.D. 1250 (and after the principal Early Caddo occupation at the George C. Davis site), and by the late 17th and early 18th centuries Caddo sites are known in the Neches and Angelina river basins where brushed sherds account for more than 50% and as much as 90% of all the decorated pottery.

Of note is the generally low use of bone-tempered pottery in upper Neches River basin Caddo

pottery in each of the five site/assemblage groupings (see Table 3). The tradition of manufacturing grog-tempered vessels is a strong and long-lasting one in this region, and the ceramic assemblage from the Henry Lake site is certainly part of that same tradition.

If the sherd assemblage data from the Lake Palestine area sites have chronological significance, and it is suspected they do given the discussion above regarding the kinds of engraved fine wares that are present at each of the sites as well as the changing proportions of brushed pottery (see Table 3), then it is possible to seriate the decorated ceramic sherd assemblage from the Henry Lake site,

and establish its age. Key in this respect is the very high proportion of brushed pottery (81.9%) in the Henry Lake site ceramic assemblage (see Table 3). This points to the likelihood that the Caddo occupation at Henry Lake was one of the youngest components in the Group I Frankston phase sites. The absence of any Patton Engraved pottery, the principal fine ware in post-A.D. 1650 Allen phase sites in the upper Neches River basin, in the engraved fine wares from the Henry Lake site, may provide an upper limit to the age of the Caddo occupation here; Patton Engraved pottery is present, and relatively abundant, only in the youngest Group I site: 41CE354 (Perttula and Nelson 2007). Taken together, the very high proportions of brushed utility wares at the Henry Lake site, the dominance of Poynor Engraved sherds in the fine wares, and the absence of post-A.D. 1650 Patton Engraved sherds, suggest that this Caddo occupation probably took place from ca. A.D. 1600-1650, near the end of the Frankston phase, well prior to any sustained contact between the upper Neches River basin Caddo groups and Europeans.

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## APPENDIX 1

## Attribute Analysis of a Sample of Plain and Decorated Sherds from the Henry Lake Site (41CE324)

Lot No.	Sherd Type	Temper	Paste	FC	ST	Th	Decoration
1	rim	g-h	c	F	I/E SM	6.7	plain, Bottle
1	rim	g-h	c	F	–	6.4	plain, D-FL
1	rim	g	c	G	I/E SM	8.2	plain, D-FL
1	rim	g-h	c	A	I/E SM	6.5	plain, D-RO, ext f
2	rim	g	c	A	I B	7.7	plain, D-FL; pinkware
1	body	g	c	G	I SM	5.6	plain
1	body	g	c	F	I SM	6.5	plain
1	body	g-h	c	E	–	7.7	plain
1	body	g	c	C	I/E SM	6.5	plain
1	body	g	c	F	E SM	5.2	plain
1	body	g	c	G	I/E SM	7.4	plain
1	body	g	c	H	I SM	7.1	plain
1	body	g	c	E	I SM	6.5	plain
1	body	g	c	G	I/E SM	6.3	plain
1	body	g-h	c	G	I/E SM	7.0	plain
1	body	g	c	G	I/E SM	6.9	plain
1	body	g	c	H	E B/ I SM	5.6	plain
1	body	g	c	G	I/E B	8.0	plain
1	body	g	c	G	E B	7.9	plain
1	body	g	SP	E	I/E SM	8.0	plain
1	body	g	c	F	I/E SM	6.9	plain
2	body	g	c	G	I SM	6.5	plain
2	body	g-o	c	F	E SM	6.0	plain
2	body	g	c	G	I SM	10.7	plain
1	base	g	c	B	E SM	11.6	plain
1	base	g-h	SP	K	E SM	14.0	plain
1	base	g	c	G	–	12.5	plain
2	base	g	c	B	–	9.6	plain
1	strap handle	g-h	c	B	–	8.4	horizontal incised line below handle attachment; handle is plain
1	body	g	c	B	I SM	7.5	single straight incised line
1	body	g	c	F	–	7.1	opposed incised lines
1	body	g-b-h	c	B	–	9.6	parallel incised lines, widely-spaced
1	body	g	c	C	I SM	7.0	cross-hatched incised lines
1	body	g	c	B	I SM	7.6	cross-hatched incised lines
1	rim	g	c	E	I SM	6.5	6+ rows of tool punctations; EV-RO
1	body	g	c	G	I SM	7.3	3+ fingernail punctated rows



Lot No.	Sherd Type	Temper	Paste	FC	ST	Th	Decoration
1	rim	g	c	H	–	10.9	vertical pinched rows; EV-RO
1	body	g	c	F	I SM	8.7	vertical pinched rows
1	rim	g	c	B	–	7.6	vertical brushed; D-RO
1	rim	g	c	B	–	7.9	vertical brushed; EV-RO
1	body	g	c	G	I SM	8.9	vertical brushed
1	body	g	c	K	I/E SM	8.0	vertical brushed
1	body	g-h	c	A	I SM	8.2	overlapping brushed; pinkware
1	body	g	c	F	–	6.2	overlapping brushed
1	body	g-h	c	D	I SM	7.0	overlapping brushed
1	body	g	c	E	I SM	6.3	parallel brushed
1	body	g	c	B	–	9.1	parallel brushed
1	body	g	c	E	I SM	6.6	parallel brushed
1	body	g-h	c	C	I SM	8.7	parallel brushed
1	body	g	c	B	–	7.2	parallel brushed
1	body	g	c	G	I SM	9.1	parallel brushed
1	body	g	c	F	I SM	7.5	parallel brushed
1	body	g	c	F	I SM	7.0	parallel brushed
1	body	g	c	A	I SM	8.9	parallel brushed; pinkware
1	body	g	c	F	–	9.0	parallel brushed
1	body	g	c	F	–	7.9	parallel brushed
1	body	g-h	c	C	–	6.3	parallel brushed
1	body	g	c	B	I SM	9.2	parallel brushed
1	body	b	c	B	–	6.2	parallel brushed
1	body	g	SP	B	I SM	6.9	parallel brushed
1	body	g	c	B	I SM	9.0	parallel brushed
1	body	g	c	B	I SM	9.2	parallel brushed
1	body	g	c	A	–	10.2	parallel brushed
1	body	g	c	E	–	5.8	parallel brushed
1	body	g	c	G	I SM	6.9	parallel brushed
1	body	g	c	F	–	11.2	parallel brushed
1	body	g-h	SP	G	I SM	9.3	parallel brushed
1	body	g	c	E	I SM	9.3	parallel brushed
1	body	g-h	c	A	–	8.4	parallel brushed
1	body	g	c	A	–	7.6	parallel brushed; pinkware
2	body	g	c	K	–	7.5	parallel brushed
2	body	g-h-b	SP	F	I SM	7.1	vertical brushing on body; CB
1	body	g	c	B	I SM	9.7	parallel brushed-overlapping incised lines
1	body	g	c	L	I SM	7.4	parallel brushed-overlapping parallel incised lines
1	body	g	c	F	–	7.6	parallel brushed-overlapping parallel incised lines

Lot No.	Sherd Type	Temper	Paste	FC	ST	Th	Decoration
1	body	g	c	I	I SM	9.0	parallel brushed-incised
1	body	g	c	F	I SM	7.5	parallel brushed-incised
1	body	g	c	D	–	6.8	parallel brushed-curvilinear incised line
1	body	g	c	H	I SM	6.9	parallel brushed-curvilinear incised line
1	body	g	c	B	I SM	5.7	tool punctated row above vertical brushing
1	body	g	c	G	–	7.6	tool punctated row above horizontal brushing
1	rim	g	c	F	I/E SM	6.5	horizontal engraved line; D-FL; effigy vessel
1	rim	g-h	c	F	I/E SM	7.2	engraved scroll element; Poynor Engraved, D-RO
1	rim	g-h	c	F	I/E B	7.4	oval-shaped engraved arc; Poynor Engraved, <i>var. Cook</i> , D-RO, ext f
1	rim	g-h	c	F	I/E SM	6.8	oval-shaped engraved arcs; Poynor Engraved, <i>var. Cook</i> ; D-RO
1	rim	g	c	A	I/E SM	3.3	horizontal engraved and hour glass-shaped column; Poynor Engraved, <i>var. Hood</i> , D-RO
1	rim	g	c	F	I/E SM	5.7	horizontal engraved line and hour glass-shaped column; Poynor Engraved, <i>var. Hood</i> , D-RO, ext f
2	rim	g	c	F	I/E SM	7.2	engraved hour glass-shaped column; Poynor Engraved, <i>var. Hood</i> ; D-RO, ext f
1	body	g	c	H	I/E SM	7.9	2+ broad curvilinear engraved lines
1	body	g	SP	F	I/E SM	6.6	single curvilinear engraved line
1	body	g	c	B	I/E SM	5.7	engraved scroll element; Poynor Engraved
1	body	g	c	H	E SM	7.6	excised hour glass-shaped column; Poynor Engraved, <i>var. Hood</i>
1	body	g-h	c	F	I/E SM	7.9	excised hour glass-shaped column; Poynor Engraved, <i>var. Hood</i>

Lot No.	Sherd Type	Temper	Paste	FC	ST	Th	Decoration
1	body	g-h	c	G	I/E SM	7.4	single horizontal engraved line above horizontal brushing on body; CB
1	body	g-h-o	c	F	E B	6.6	horizontal and diagonal engraved lines and opposed brushing on body; Poynor Engraved, CB

\*ST=surface treatment; I/E=interior/exterior; SM=smoothed; B=burnished

FC=firing condition (see Teltser 1993:Figure 2; Perttula 2005:Figure 5-30).

Th=thickness, in mm

D=direct rim; EV=everted; INV=inverted; RO=rounded lip; FL=flat lip; ext f=exterior folded lip

CB=carinated bowl

g=grog; h=hematite; b=bone; o=charred organic material; SP=sandy paste



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# Frankston Phase Ceramics from the Alcoa #1 (41AN87) Site, Mound Prairie Creek, Anderson County, Texas

*Timothy K. Perttula*

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## INTRODUCTION

In 1990, Amick et al. (1991) investigated a well-preserved Late Caddo Frankston phase midden deposit at the ALCOA #1 (41AN87) site on Mound Prairie Creek, about 7 km northeast of Palestine, Texas. During the course of that work, more than 900 Caddo ceramic vessel sherds and a few pipe sherds were recovered, but they were only cursorily described by Amick et al. (1991). That was unfortunate at the time because it appeared then, and is still evident now, that the ALCOA #1 site was a single component 15<sup>th</sup> century A.D. Frankston phase settlement, and detailed study of the recovered ceramic assemblage would have provided unique insights into the stylistic and technological character of the ceramic vessels being made and used for culinary purposes by the prehistoric Caddo in this part of the Neches River basin.

With the renewed study of the archaeology of the Frankston phase occasioned by the Texas Department of Transportation-sponsored excavations at the Lang Pasture site (41AN38, Perttula et al. 2007)—and the recovery there of a substantial ceramic sherd assemblage—and the reexamination of sherd and vessel collections from Frankston phase collections at the Texas Archeological Research Laboratory, The University of Texas at Austin, I returned to the detailed study of the ALCOA #1 ceramic assemblage. The assemblage of ceramic vessel sherds from the Amick et al. (1991) work is sufficiently robust that it is possible to characterize with some precision the use of fine wares, utility wares, and plain wares by the 15<sup>th</sup> century A.D. Caddo that lived at the site.

## SITE INVESTIGATIONS

The ALCOA #1 site covers no more than 0.5-1 acres in size, with a ca. 100 m<sup>2</sup> trash midden deposit that is 60-70 cm in thickness. In 1990, Amick et al. (1991:Figure 1) excavated a single 1 x 1 m unit

(Unit 1), excavated in 10 cm arbitrary levels, in the heart of the midden deposits. A large quantity of ceramic vessels (to be described below), animal bones (n=799), and charred hickory nutshells were recovered in the midden excavations. Calibrated radiocarbon dates obtained from charred nutshells in level 4 (30-40 cm bs) and level 6 (50-60 cm bs) in Unit 1 were: AD 1380-1514 (2 sigma, 0.75 relative area under probability distribution) and AD 1294-1437 (2 sigma, 1.00 relative area under probability distribution), respectively. Calibrated intercepts of the two radiocarbon age ranges were AD 1426 (level 4) and AD 1407 (level 6), suggesting an occupation that began in the early 15<sup>th</sup> century A.D.

## THE CERAMIC ASSEMBLAGE

The ceramic assemblage from the ALCOA #1 site includes 913 vessel sherds (Table 1) and seven elbow pipe sherds (Table 2). This is a very high density of more than 1300 vessel sherds and 10 pipe sherds per m<sup>3</sup> of midden archaeological deposits, and this density suggests that there is an estimated midden content of ca. 91,000 vessel sherds from hundreds of different vessels and ca. 700 pipe sherds from at least 25-50 different pipes. The highest densities of sherds occur at the top and bottom of the midden deposits (see Table 1), but the densities remain quite high throughout the midden deposits, suggesting a continuous accumulation of broken vessels and vessel fragments during the course of the Frankston phase Caddo occupation.

Of the 913 vessel sherds from the ALCOA #1 site, 335 are decorated. The plain to decorated sherd ratio in this Unit 1 assemblage is 1.73.

## Methods of Analysis

Detailed analysis of the ceramic sherds (about a 33% sample) from the ALCOA #1 site (Appendix

**Table 1. Provenience of Ceramic Sherds from the ALCOA #1 (41AN87) Site.**

Provenience	Plain wares	Utility wares	Fine wares	N
Unit 1, lv. 1	143	52	9	204
Unit 1, lv. 2	73	43	7	123
Unit 1, lv. 3	68	41	8	117
Unit 1, lv. 4	73	36	10	119
Unit 1, lv. 5	61	38	12	111
Unit 1, lv. 6	136	50	12	198
Unit 1, lv. 7	24	15	2	41
Totals	578	275	60	913

**Table 2. Provenience of Pipe Sherds from the ALCOA #1 Site.**

Provenience	Pipe bowl sherds	Pipe stem sherds	N
Unit 1, lv. 2	2	–	2
Unit 1, lv. 3	3	–	3
Unit 1, lv. 6	2	–	2

1) is based on differences in temper, type of sherd (i.e., rim, body, or base), rim and lip form (cf. Brown 1996:Figure 2-12), decoration (if present), surface treatment (smoothing, burnishing, or polishing; see Rice 1987), and firing conditions (cf. Teltser 1993). Sherd cross-sections were inspected macroscopically and with a 10X hand lens to determine the character of the paste and its inclusions. Determining the firing conditions is based on the identification of the firing core in the sherd cross-sections and the identification of oxidation patterns as defined in Teltser (1993:535-536 and Figure 2a-h) and Pertulla (2005:Figure 5-30i-l).

More specifically, the following attributes were employed in the analysis of the vessel ceramics: (a) temper, the deliberate and indeterminate materials found in the paste (Rice 1987:411), including a variety of tempers (grog or crushed sherds, grit or crushed quartz pebbles, and burned mussel shell) and “particulate matters of some size;” (b) although most of the sherds are small and thus from indeterminate vessel forms, where sherds were large enough, vessel form categories include open containers (bowls) and restricted containers, including jars and bottles. Other form attributes include rim profile (direct or vertical, and inverted) and lip profile (rounded, flat,

or folded to the exterior). In a few cases, base shape could also be recorded. Observations on ceramic sherd cross-sections permit consideration of oxidation patterns (Teltser 1993:Figure 2), namely the conditions under which a vessel was fired and then cooled after firing. Finally, wall thickness was recorded in millimeters (mm), using a vernier caliper, along the mid-section of the sherd.

With respect to interior and exterior surface treatment on the sherds, the primary methods of finishing the surface of the vessels includes smoothing and burnishing, and polishing. Smoothing creates “a finer and more regular surface...[and] has a matte rather than a lustrous surface” (Rice 1987:138). Burnishing creates an irregular lustrous finish marked by parallel facets left by the burnishing tool (perhaps a smoothed pebble or bone). A polished surface treatment is marked by a uniform and highly lustrous surface finish, done when the vessel is dry, but without “the pronounced parallel facets produced by burnishing leather-hard clay” (Rice 1987:138).

Decorative techniques present in the ALCOA #1 site ceramic sherd collection include engraving and engraving-punctation in the fine wares, and incising, incising-punctated, punctated, brushing, applied, and pinching in the utility wares.

Engraving was done with a sharp tool when the vessel was either leather-hard or after it was fired, while the other decorative techniques were executed with tools (incising and punctation with wood or bone sticks or dowels and brushing with frayed sticks or grass bundles), with finger impressions (pinching) when the vessel was wet or still plastic, and by adding strips and nodes of clay to the vessel body (applied).

The 335 decorated sherds from the site (see Table 1) are readily separated into fine wares (n=60) or utility wares (n=275), following the distinctions discussed by Schambach and Miller (1984) at the Cedar Grove site in the Great Bend area in southwestern Arkansas. These distinctions include apparent differences in temper, surface treatment, vessel forms, and decorative methods. Utility wares generally are jars and simple bowls used for the cooking and storage of foods, have a coarse temper, and lack burnishing, polishing, or slipping on interior and exterior vessel sherd surfaces. Such vessel sherds are decorated with brushing, incising, punctations (tool, cane, or fingernail), and applied elements, either by themselves or in combination with one or more of these decorative methods (see Perttula et al. 1995; Schambach and Miller 1984; Suhm and Jelks 1962). Fine wares, on the other hand, consist principally of engraved and slipped vessel sherds from carinated bowls, some simple bowls, and bottles. The fine ware vessel sherds more frequently are smoothed or burnished on the exterior vessel surface, and as will be discussed in more detail below, the fine ware vessels from the ALCOA #1 site were made, fired, and used in different ways than were the utility ware vessels.

### Fine Ware Sherds

The fine ware sherds from the ALCOA #1 site include 15 rims and 45 body sherds with either engraved (n=57, 14 rims) or engraved-punctated (n=3, 1 rim) elements; they comprise 17.9% of all the decorated sherds from the site. More than 27% of the rims from the site are from fine ware vessels. It is likely that with the exception of bottles, which were engraved on the bottle body, the other engraved sherds were from vessels (i.e., carinated bowls) that were decorated only on the rim panel. About 8% of the engraved fine ware sherds have had a hematite-rich red clay pigment smeared into the engraved design (see Appendix 1); there are no red-slipped fine ware sherds in the assemblage. All

of the engraved sherds appear to be from Poynor Engraved vessels.

The 14 engraved rim sherds include six with a single horizontal engraved line on it, probably either the top or bottom of the rim panels that encircle the engraved carinated bowls. One other has closely-spaced diagonal engraved lines, probably part of a scroll, as is a second rim with horizontal and diagonal lines. A third miscellaneous engraved rim has horizontal, diagonal, and vertical lines that form part of a hatched triangle attached to a larger, but unidentifiable, Poynor Engraved motif. Three rims are from Poynor Engraved, *var. Hood* carinated bowls (Perttula 2008) in that they have horizontal engraved lines under the lip as well as portions of hour glass-shaped columns that extend from near the rim to the vessel carination (Figure 1d, l). The remaining two rims with engraved decorations from the ALCOA #1 site are from Poynor Engraved, *var. Lang* carinated bowls (see Perttula 2008). These have hatched or cross-hatched central circles (see Figure 1e, h) with a larger engraved motif (ovals or triangles) on the rim panel.

Eleven body sherds with engraving have portions of hatched elements and motifs commonly found on Poynor Engraved vessels. Among these are six with hatched triangles (see Figure 1f-g) at the corners of larger but unidentifiable motifs, three with curvilinear hatched areas, probably also forming triangular elements attached to a larger motif (see Figure 1a-b), probably oval-shaped areas on a rim panel. Another body sherd—of uncertain orientation—has curvilinear hatched triangles in one area and a set of closely-spaced parallel engraved lines in an adjacent area (see Figure 1i).

The remaining engraved sherds include seven with a single straight line, three with sets of curvilinear lines (see Figure 1j, on a carinated bowl), six with opposed sets of lines, and eight with closely-spaced parallel engraved lines.

There are several engraved bottle sherds (n=7, see Appendix 1) in the fine ware assemblage. With two exceptions, these have sets of curvilinear lines on the vessel body, but the overall motif is unidentifiable. The other two have either closely-spaced parallel or horizontal-diagonal engraved lines on the bottle body.

The first of the engraved-punctated sherds is a body sherd from a bottle. The small piece has a straight engraved line adjacent to a zone filled with small etched tool punctates. The two others are from one version of decorated Poynor Engraved, *var. Lang*

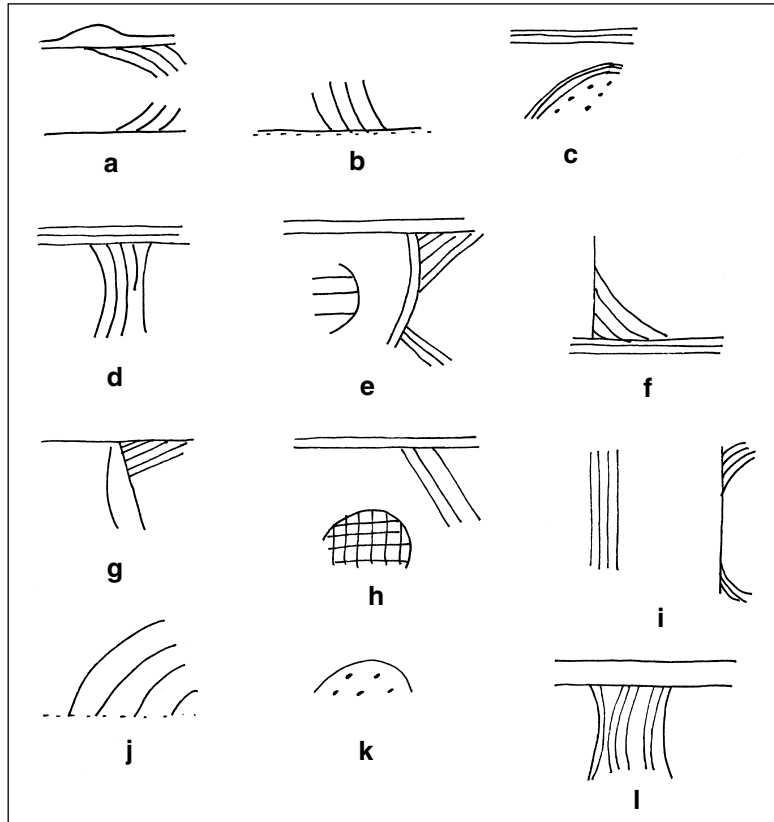


Figure 1. Drawings of selected Poynor Engraved rim and body sherds from the ALCOA #1 site: a-b, d-j, l, engraved; c, k, engraved-punctated.

carinated bowls (Perttula 2008). Both have small engraved circles filled with etched tool punctations (see Figure 1c, k), and these punctated-filled circles are centered within large ovals repeated on the rim panel.

### Utility Ware Sherds

The utility ware sherds appear to be from the decorated portions of jars, probably used for cooking and/or food storage. These include 26 rim sherds (mainly from vessels decorated with incised or fingernail punctated elements) and 249 body sherds, or 82.1% of all the decorated sherds from the ALCOA #1 site. Many of the decorated utility ware sherds have brushing marks (Table 3), particularly on body sherds. Approximately 70% of the utility ware body sherds have brushing marks on them, but only 15% of the utility ware rim sherds, indicating that brushed decorations were confined primarily to the bodies of jars. Other important decorated utility wares include sherds from vessels with incised designs (15.6% of all the sherds and 50% of the rims), fingernail punctated sherds (8.7% of all the utility ware sherds and 19.2% of the rims), and incised-punctated vessel

sherds (3.6% of all the utility ware sherds and 11.5% of the rims) (Table 3).

The three brushed rims from the ALCOA #1 site have either vertical (n=1) or horizontal (n=2) brushing marks on them. Jar vessel bodies have primarily parallel (or vertical) brushing (89% of the brushed body sherds, n=150), with overlapping brushing (9.5%, n=16) or opposed brushing (1.2%, n=2) elements decidedly less well represented.

A few other sherds (see Table 3) have brushing in combination with other decorative methods. Four have brushed-incised elements, including one rim with vertical brushing-incising, one body with parallel brushed-incised lines, and two other body sherds with parallel brushing marks with overlapping incised lines. One body sherd has a single vertical row of pinching adjacent to a panel filled with diagonal brushing (Figure 2o). Another body sherd has a row of tool punctates above an area with vertical brushing marks; the tool punctated row is probably at the rim-body juncture. The last such body sherd has overlapping brushing marks and a straight incised line, with fingernail punctates pushed through the brushing.



**Table 3. Decorated Utility Ware Sherds.**

Decorative method	Rim sherd	Body sherd	N
Brushed	3	168	171
Brushed-incised	1	3	4
Brushed-punctated	–	1	1
Brushed-pinched	–	1	1
Brushed-incised-punctated	–	1	1
Fingernail punctated	5	19	24
Tool punctated	1	8	9
Linear punctated	–	1	1
Pinched-punctated	–	1	1
Incised	13	30	43
Incised-punctated	3	7	10
Appliqued	–	5	5
Appliqued-punctated	–	3	3
Appliqued-incised	–	1	1
Total	26	249	275

Vessel sherds with incised line decorations are an important part of the decorated utility wares at the ALCOA #1 site. As previously mentioned, more than 15.6% of all the utility ware sherds are incised, as well as 50% of all the utility ware rim sherds (see Table 3).

The incised rim sherds are dominated by those that have sets of diagonal incised lines (n=7 or 54% of the incised rims), usually widely-spaced around the rim. Other rims with incised line decorations include one with cross-hatched incised lines, another with horizontal incised lines, one with horizontal and diagonal lines, and a fourth with vertical and diagonal incised lines. Two more distinctive incised rims include: one with large alternating and hatched incised triangles (see Figure 2b) that extend from the rim to a set of horizontal incised lines farther down the vessel body, and another with large alternating triangles and triangular incised corners where the hatched lines are pitched in different directions (see Figure 2c); this rim also has pinched strap handles that apparently served to divide the incised rim panel.

Incised body sherds have almost exclusively simple straight or geometric designs; one incised body sherd has a series of curvilinear lines. This includes 12 with a single straight incised line, 13 with parallel sets of lines (orientation on the vessel is uncertain), and three with opposed incised lines

(see Figure 2d). Of those with parallel incised lines, 85% have widely-spaced and parallel lines; the others are closely-spaced.

Including one pinched-punctated sherd, 12% of the utility ware sherds (and 23.1% of the rim sherds) from the ALCOA #1 site have punctated decorative elements (n=35 sherds). Most of these are fingernail punctated, either in vertical panels (n=5) on rims (see Figure 2a) or in rows (n=18) on the vessel rim or body. One body sherd has free or randomly placed large fingernail punctates. One tool punctated rim has sets of vertical panels, but the eight body sherds have one or more rows of tool punctations. Another body sherd has rows of closely-spaced linear punctations. Finally, one body sherd has a rectilinear row of pinching that encloses a zone filled with fingernail punctations (see Figure 2n).

Incised-punctated sherds (n=10) comprise 3.6% of all the utility ware sherds, and 11.5% (n=3) of the utility ware rim sherds. In eight of the 10 sherds, the decoration consists of either straight, diagonal, or opposed incised line elements that have been employed to create zones filled with tool punctations (n=7) or fingernail punctations (n=1). These incised and punctated-filled zones may be triangular (see Figure 2g) or rectangular panels (see Figure 2h), or sherds with combinations of different-sized triangles (see Figure 2i) on a vessel rim. Two sherds have

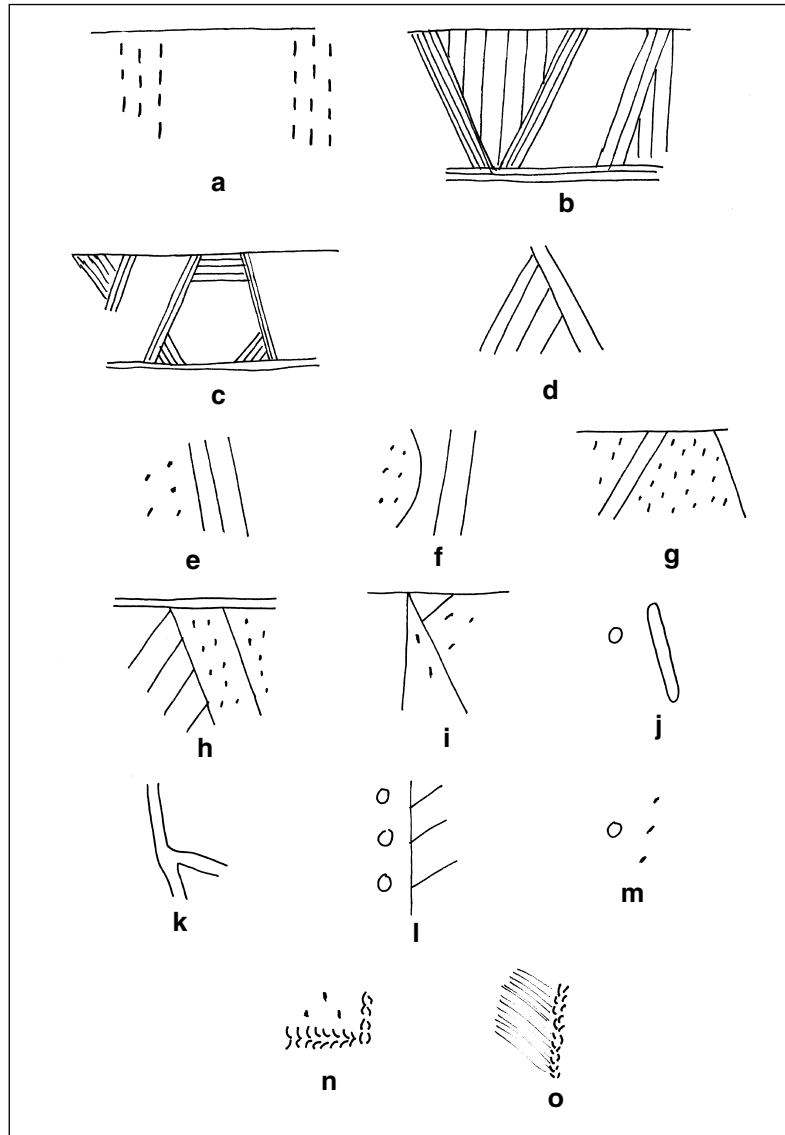


Figure 2. Utility ware decorated sherds from the ALCOA #1 site: a, fingernail punctated panel; b-d, incised; e-i, incised-punctated; j-k, applied; l, applied-incised; m, applied-punctated; n, pinched-fingernail punctated; o, pinched-diagonal brushed.

circular or curvilinear incised elements, one an incised circle filled with tool punctations (see Figure 2f) and the other with sets of curvilinear incised lines and a tool-punctated zone of uncertain form.

Nine body sherds have applied decorations (see Table 3), 3.3% of all the utility ware sherds. The most common include applied nodes (n=1), ridges (n=3, see Figure 2k), or ridges and nodes (n=1, Figure 2j). One jar handle has three vertical applied ridges on it. Three other body sherds have either ridges (n=2) or nodes (n=1) on the vessel body, with fingernail punctated (n=2) or tool punctated (n=1,

see Figure 2m) rows or zones adjacent to the applied elements. Finally, another sherd—possibly part of a jar handle—has a broad applied ridge with three applied nodes on it; adjacent to the broad applied ridge are several diagonal incised lines (see Figure 2l).

### Plain Ware Sherds

The 578 plain ware sherds include 14 rims, 554 body sherds, and 10 base sherds. While many of the plain sherds in the ALCOA #1 assemblage

are undoubtedly from the undecorated portions of decorated fine ware and utility ware vessels, the proportion of plain rims among all the rims in the assemblage (25.4%) and the ratio of plain to decorated rims (1:2.9) indicates that plain vessels (probably bowls, carinated bowls, and an occasional bottle, see Appendix 1) comprise a substantial part of the vessels made and used by the Caddo during the occupation.

**Assemblage Characterization of the Vessel Sherds**

In this section, I discuss the character of the ALCOA #1 vessel sherd assemblage with respect to the use of different kinds of temper and the apparent use of a naturally sandy clay for vessel manufacture, firing conditions, vessel wall thickness, and rim and lip form. These comparisons provide a good sense of the various technological attributes that characterize prehistoric Caddo pottery manufacture in the upper Neches River basin.

**Temper and Paste**

The ALCOA #1 ceramic sherds from the plain wares, utility wares, and fine wares are tempered with grog or crushed sherds (Table 4). Between 90.7-93.9% of the sherds from the site have grog temper, which is consistent with other upper Neches River Frankston and Allen phase sites (Perttula 2007:80 and Table 1).

A notable feature of the ALCOA #1 sherd assemblage, however, is the regular use of crushed hematite as a temper, particularly in the plain wares and utility wares (54.4-55.4%), but even abundant in the fine wares (45.4%). Crushed and burned bone was a decidedly secondary choice as a temper additive by Caddo potters at the site, comprising only 2.2-11.4% of the sherds in the three wares. Less than 10% of the sherds have charred organic materials preserved in the paste, and this material is less a deliberate temper than an accidental organic inclusion in the clay paste that was not completely combusted (probably due to a short firing episode) during firing.

**Table 4. Temper.**

Temper Category	Plain ware	Utility ware	Fine ware
grog	34.2*	40.0	43.4
grog-bone	6.1	0.0	3.8
grog-hematite	45.6	44.4	32.1
grog-hematite-organics	0.9	2.2	1.9
grog-organics	5.3	4.4	5.7
grog-hematite-bone	1.8	2.2	1.9
bone-grog	0.0	0.0	1.9
bone-hematite	3.5	1.5	1.9
bone-hematite-organics	0.0	0.7	0.0
hematite	2.6	4.4	5.7
hematite-organics	0.0	0.0	1.9
% grog	93.9	93.2	90.7
% bone	11.4	2.2	9.5
% hematite	54.4	55.4	45.4
% organics	6.2	7.3	9.5
% Sandy paste	8.8	23.7	11.3
Totals	114	135	53

\*percentage

The addition of coarse fragments of crushed hematite and bone, either separately or together, found in 54.9-65.8% of the sherds (see Table 4), would have made the clay selected for vessel manufacture more plastic and increased its strength and use-life. These were properties that were important in the successful manufacture of durable pottery vessels, along with the use of grog. The selection of grog—sometimes finely crushed—as the primary temper by the Frankston phase potters may have been for both technological and stylistic properties. The addition of grog in the paste would slow the oxidation process, creating darker-colored vessels in reducing environments, while allowing them to be fired longer, with more control, and producing a harder ceramic (Rice 1987:354; Teltser 1993:532, 540). Furthermore, because grog would have comparable expansion coefficients to that of the clay paste, this would contribute to the ability of a fired vessel to withstand heat-related stresses, increase its flexural strength (O'Brien et al. 1994:281; Rice 1987:362), and have better thermal conductivity.

Sherds with a sandy paste account for between 8.8% and 23.7% of the ALCOA #1 sherds (see Table 4). Most of these are among the utility ware sherds (23.7%), with lesser but comparable amounts among the plain wares and fine wares (8.8-11.3%). It is likely that these differences are apparent because Caddo potters recognized that sandy clays held up better to heat-related stresses and helped with vessel porosity and thermal conductivity, all beneficial in vessels designed to receive repeated use for cooking and heating foods and liquids, such as the utility ware cooking jars, while vessels designed for different purposes (i.e., the plain wares and fine wares) have different paste compositions (see Rice 1996:139).

### Firing

The Caddo vessel sherds from the ALCOA #1 site were fired under a variety of conditions (Table 5), primarily in a reducing or low oxygen environment, probably because of the smothering of the vessel in a bed of coals from a wood fire. This method of firing is typical of Caddo ceramic assemblages throughout East Texas. After firing, most of the vessels were apparently cooled in a high oxygen environment (especially the plain wares and the fine wares), meaning that the fire-hardened vessels were probably removed from the fire to cool, producing a thin oxidized or lighter surface on either one (i.e., firing conditions G and H) or both (i.e., firing condi-

tion F) vessel surfaces.

About 69% of the fine wares were fired in a reducing environment, compared to 48.1-55.7% in the utility wares and plain wares, respectively (see Table 5). The fine ware vessel sherds are from vessels that were better made and better fired (in terms of regulating the firing temperature), as well as probably fired longer in a low oxygen environment. This produced fine ware vessels that were harder and more durable than the other two ceramic wares from the site.

Between 30.8-45.2% of the vessel sherds are from vessels that were fired in either a high oxygen environment or they were not completely oxidized during firing; the highest proportion of sherds fired in this manner occur among the utility wares (see Table 5). In the latter case, this probably represents a situation where it was not necessary, provided that their porosity was not excessive, for utility vessels to be fired for as long a time as the harder fine wares, but still remained serviceable over time without being subject to diminished strength from cumulative thermal fatigue as well as cracks and fractures.

There are significant differences in how utility wares and fine ware vessels were fired at the ALCOA #1 site, with the plain wares intermediate in firing conditions, indicating its more diverse formal and functional character. Nevertheless, the relative consistency in how the vessels at the ALCOA #1 site were fired indicates that the Caddo potters who made those vessels were well-versed in regulating firing and cooling temperatures as well as maintaining control over the final finished end product, namely the manufacture of durable and relatively hard vessels with different forms and functions.

### Vessel Wall Thickness

The fine ware vessel sherds from the ALCOA #1 site are thinner than the decorated utility ware or plain ware sherds, particularly along the rim (Table 6). These variations in vessel wall thickness are likely related to functional and technological differences in how these different wares were intended to be used by Caddo potters. The more substantial vessel walls in the utility wares would be well suited to the cooking and heating of foods and liquids and would have contributed to their ability to withstand heat-related stresses. Fine wares were probably intended for use in the serving of foods and liquids, while the plain wares were probably used for both cooking and food serving.

**Table 5. Firing Conditions.**

Firing Condition	Plain ware	Utility ware	Fine ware
A	21.2*	25.9	17.3
B	11.5	11.1	13.5
C	8.8	5.2	13.5
D	2.7	0.7	0.0
E	8.8	13.4	0.0
F	22.1	14.8	34.6
G	15.9	14.1	9.6
H	6.2	8.1	11.5
I	0.0	2.2	0.0
J	0.0	0.7	0.0
K	2.7	3.7	0.0
Oxidizing	21.2	25.9	17.3
Incompletely Oxidized	20.3	19.3	13.5
Reducing	11.5	11.1	13.5
Reducing, cooled in the open air	44.2	37.0	55.7
Possible smudged or refired	2.7	6.6	0.0
Totals	113	135	52

\*percentage

Another factor that would influence vessel body wall thickness would be the sequence in which a vessel was constructed (Krause 2007:35). Vessels constructed from the bottom up, as these Late Caddo Frankston phase vessels likely were, would tend to have thinner walls moving up the vessel body towards the rim, with the lower portion of the vessel—especially the base—usually significantly thicker than the upper portions of the vessel.

### Rim and Lip Forms

The plain ware vessels primarily have direct or vertical rims and rounded lip (Table 7), with an occasional vessel (probably a plain carinated bowl) having a rounded and exterior folded lip. Utility

wares, almost all from wide-mouthed jars, have both direct and everted rims, with proportionally more of the latter, with rounded and flat lips.

Rims of the fine ware vessels from the ALCOA #1 site are almost exclusively direct or vertical in orientation (see Table 7), with the exception of a single inverted rim vessel; inverted rim fine ware vessels are present in both Frankston phase and later Allen phase ceramic assemblages in the upper Neches River basin (cf. Suhm and Jelks 1962). Lips on fine wares are proportionally more common to be either flat (as seen in bottles and some bowl forms) or rounded and exterior folded (as noted on carinated bowls).

Only a few rims were large enough, or had sufficient curvature, to measure their orifice diameter.

**Table 6. Mean Vessel wall thickness.**

Ware	Rim (in mm)	Body (in mm)	Base (in mm)
Plain ware	7.26	7.04	10.50
Utility ware	7.28	7.42	–
Fine ware	6.16	6.54	–

**Table 7. Rim and lip forms in the ceramic assemblage from the ALCOA #1 site.**

Rim and Lip form	Plain ware	Utility ware	Fine ware	N
Direct rim	16.1*	38.7	45.2	31
Everted rim	12.5	87.5	–	8
Inverted rim	–	–	100.0	1
Rounded lip	17.9	57.1	25.0	28
Rounded, exterior folded lip	20.0	40.0	40.0	10
Flat lip	12.5	50.0	37.5	8
Flat, exterior folded lip	–	–	100.0	1
Total percentage	17.0	51.1	31.9	47

\*percentage of analyzed rims

The fine wares range from 16-32 cm in orifice diameter, with a mean of 22.8 cm, indicating that large fine ware vessels were in use at the ALCOA #1 site. Utility ware vessels have a similar range in orifice diameter (18-30 cm), with a mean orifice diameter of 22.9 cm. None of the plain ware rim sherds could be measured for orifice diameter.

### Pipe Sherds

The seven clay pipe sherds (see Table 2) are from at least five different Late Caddo style elbow pipes with short and rounded stems as well as squat but broad bowls. Orifice diameters on two of the pipes range from 3.0-4.0 cm. One of the elbow pipes has a row of tool punctations below the lip of the bowl, while the other pipe sherds are undecorated.

Bowl rims are direct to inverted in profile, with either rounded (n=1) or flat (n=2) lips. The pipes are tempered with grog (57%), bone-hematite (14%), bone (14%), and grog-bone (14%). The pipes are commonly smoothed or burnished on their exterior surfaces, although none of them are slipped. More than 70% of the pipe sherds are from pipes

that have been fired in a reducing environment, but then cooled in the open air. The varying thickness of the pipe bowls (ranging from 1.8-7.4 mm) from the ALCOA #1 site indicate that the elbow pipes were made in at least three sizes, the first with a thin-walled bowl (1.8 mm), another with a large and thick-walled bowl (7.4 mm), and an intermediate but more common group with a mean bowl thickness of  $3.84 \pm 0.46$  mm.

### SUMMARY

Prehistoric Frankston phase Caddo ceramic vessel sherds and pipe sherds dating to the early 15<sup>th</sup> century A.D. are abundant at the ALCOA #1 site in the upper Neches River basin. These remains, comprising the fragments of whole vessels and ceramic pipes used either for the producing, storage, preparing, serving, consuming, and disposal of foods or—in the case of the clay pipes—the consumption of smoking products. Based on the archaeological context of the recovered vessel and pipe sherds, these remains were discarded at a small habitation site, probably that of

one or two households, that most likely was not occupied for more than 1-2 generations. As such, the ceramic vessel and pipe sherd assemblage from the ALCOA #1 site provide a glimpse of this aspect of the material culture of a small group of Caddo families living along Mound Prairie Creek.

The ceramic vessel sherds from the ALCOA #1 site fall readily into three distinct wares: plain wares, decorated utility wares, and decorated fine wares. Based on the proportion of rim sherds for each of the wares, utility ware vessels used for cooking/food preparation and storage comprise 47% of the vessels used at the site, followed by fine wares (27%) and plain wares (25%); the fine wares and plain wares (including bottles and carinated bowls) were used primarily for food serving and the containment of liquids. When compared, each ware is slightly different in temper and paste composition from the other, although grog and hematite were the principal tempers (much like other upper Neches River Caddo households, at least in the case of the use of grog temper), firing conditions, rim and lip form, and vessel wall thickness. These differences appear to be related to the different forms and functions of the three wares made and used at the site.

The Frankston phase utility ware ceramic sherds are from vessels that were most commonly decorated on the rim with (a) diagonal or opposed incised lines (Maydelle Incised, see Suhm and Jelks 1962:Plate 52), (b) rows of tool or fingernail punctates (see Suhm and Jelks 1962:Plate 79a-b), or (c) horizontal or vertical brushing marks (Bullard Brushed, see Suhm and Jelks 1962:Plate 11). These vessels—probably cooking jars for the most part—tend to have vertical brushing marks on the vessel bodies, regardless of the rim decorative treatment.

Fine wares from the ALCOA #1 site, on the other hand, are from bottles and carinated bowls decorated with engraved motifs; a small percentage of these motifs have had a red clay pigment rubbed in the engraved lines. The fine ware sherds are from Poynor Engraved vessels (see Suhm and Jelks 1962:Plates 62 and 63), the principal Frankston phase fine ware type in the upper Neches River basin. These vessels have been well burnished or polished, and the local clays along Mound Prairie Creek that were used turned a rich chocolate brown color when fired in a reducing environment and then allowed to cool in the open air; Frankston phase vessels made from clays available along the Neches River typically turned a reddish-yellow or reddish-brown hue when fired.

In a few cases, it was possible to identify specific varieties of Poynor Engraved in the ALCOA #1 site fine wares. This includes examples of Poynor Engraved, *var. Hood* (n=3) and *var. Lang* (n=4) rim sherds. Given the 15<sup>th</sup> century A.D. age of the site, it is possible to speculate that these are early varieties of Poynor Engraved, or at least were distinct stylistic varieties of Poynor Engraved that began to be used in the 15<sup>th</sup> century A.D. Additional radiocarbon dates from the site may clarify the age of these Poynor Engraved varieties, as will radiocarbon dates and the completion of detailed ceramic stylistic analyses from other Frankston phase Caddo sites in the upper Neches River basin.

All of the pipe sherds are from elbow pipes. Their frequency at the ALCOA #1 site suggests that family or community-wide traditions and rituals involving pipes and the smoking of tobacco and other types of plants were alive and well in this particular Caddo household or households. These traditions and rituals were shared with other Caddo families and households across the upper Neches River basin, based on close stylistic and technological similarities in the form, manufacture, and decoration of the clay elbow pipes.

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APPENDIX 1, DETAILED ANALYSIS OF DECORATED AND PLAIN SHERDS

Provenience	Sherd	Temper	ST*	FC	Th	Decoration	Comments	
<b>Plain wares</b>								
Unit 1, lv. 1	rim	g	–	A	6.6	–	–RO	
	body	g-h	I SM	B	6.5	–		
	body	g-h	I/E SM	E	6.7	–		
	body	g	E SM	B	7.6	–		
	body	g-b	I/E SM	A	7.7	–		
	body	g-h	I/E SM	A	4.8	–		
	body	g	I/E SM	A	7.3	–		
	body	g-h	E SM	A	7.1	–		
	body	g-h	EB/ISM	A	6.0	–		
	body	g-b	I/E SM	C	7.1	–		
	body	g-h	I/E SM	A	6.7	–		
	body	g-h	I/E SM	F	7.2	–		
	body	g-h	I/E SM	A	6.2	–		
	body	g-h	I/E SM	A	7.2	–		
	body	g-h	E B	B	8.4	–		
	body	g-o	E B	F	5.9	–		Bottle
	body	g-o	I/E SM	F	6.3	–		
	body	g-h	I/E SM	A	7.0	–		
	body	g-h/SP	I/E SM	G	6.2	–		
	body	g-h	E SM	G	5.5	–		
	body	g	I/E SM	A	7.5	–		
	body	g	–	A	7.2	–		
	Unit 1, lv. 2	body	b-h/SP	I SM	C	7.7	–	
body		g	I/E B	F	7.1	–		
body		g/SP	I/E SM	K	7.3	–		
body		g-h	I/E SM	A	6.7	–		
body		g	E SM	C	6.2	–		
body		g	E B	–	–	–		
body		g-h	E B	H	7.1	–		
body		g	I/E SM	G	5.1	–		
body		b-h	I/E SM	H	7.1	–		
body		g/SP	I/E SM	F	6.2	–		
body		h/SP	I/E SM	K	5.3	–		
body		g	I/E SM	A	5.9	–		
body		g	I/E SM	B	8.4	–		
base		g-h/SP	–	D	10.1	–		
Unit 1, lv. 3	body	g-h	EB/ISM	E	6.9	–		
	body	b-g	I/E SM	E	7.6	–		
	body	g	I/E SM	H	8.9	–		
	body	g	I/E B	B	6.9	–		
	body	g-h	I/E SM	A	6.0	–		
	body	g-h	E SM	E	6.8	–		

Provenience	Sherd	Temper	ST*	FC	Th	Decoration	Comments
Unit 1, lv. 3	body	g	I/E SM	F	7.9	–	
	body	g	I/E B	B	8.0	–	
	body	g	I/E B	B	5.8	–	
	body	g-b	EB/ISM	F	6.5	–	
	body	g-b	I B	G	7.8	–	
	body	g-h	ESM/IB	E	7.4	–	
	body	g	EB/ISM	G	7.1	–	
	body	g-o	I/E SM	F	5.9	–	
Unit 1, lv. 4	rim	g	–	B	7.6	–	D-RO
	rim	g-b	I B	E	6.9	–	D-RO
	body	g-o	I/E B	F	6.7	–	Carinated bowl
	body	h	I/E SM	C	8.4	–	
	body	g-h	I/E SM	A	6.2	–	
	body	g-h	I/E SM	A	6.8	–	
	body	g	E B	G	6.3	–	
	body	g	I/E SM	G	7.7	–	
	body	g-h	E SM	A	8.0	–	
	body	g-h	IB/ESM	C	6.9	–	
	body	g-h	I/E B	E	5.8	–	
	body	g-h	I SM	F	8.3	–	
	body	b-h	I/E SM	F	8.3	–	
	body	g-h	EB/ISM	A	7.5	–	
	body	g-h	I/E B	B	9.5	–	
	base	g-h/SP	I SM	A	10.0	–	
	base	g	E SM	G	9.9	–	
	base	g	I SM	B	11.3	–	
Unit 1, lv. 5	rim	g-b	–	B	8.8	–	
	body	g-h-o	I SM	H	9.6	–	
	body	g-b-h	E SM	F	6.3	–	
	body	g-h	EB/ISM	C	7.5	–	
	body	g-h	I/E B	G	5.6	–	
	body	g-h	I/E SM	D	6.8	–	
	body	g	E SM	H	8.3	–	
	body	g-h	EB/ISM	C	8.9	–	
	body	g-h	–	B	6.2	–	
	body	g	I/E B	G	5.6	–	
	body	g-h	EB/ISM	C	8.6	–	
	body	h	EB/ISM	A	7.4	–	
	body	g-b-h	I/E B	F	6.2	–	
	body	g-h	I SM	A	7.4	–	
Unit 1, lv. 6	rim	g	I/E B	F	7.5	–	D-RO
	rim	g	–	A	7.1	–	–RO, ext f
	body	g-o	I/E B	F	6.0	–	
	body	g-h	I/E B	F	6.3	–	

Provenience	Sherd	Temper	ST*	FC	Th	Decoration	Comments
Unit 1, lv. 6	body	g	E B	F	6.5	—	
	body	g/SP	E B	F	6.2	—	Bottle
	body	g-h	E B	F	6.6	—	
	body	g	I/E SM	B	7.4	—	
	body	g-h	I/E SM	F	7.9	—	
	body	g-h/SP	I/E SM	F	8.6	—	
	body	g-h	EB/ISM	F	7.5	—	
	body	g	I SM	G	8.4	—	pinkware
	body	g	E B	G	5.4	—	Bottle
	body	g-h	I/E SM	A	8.0	—	
	body	b-h/SP	E SM	G	8.4	—	
	body	g-h	I/E B	G	7.1	—	
	body	g-h	E B	C	6.7	—	
	body	g-h	I/E SM	F	6.7	—	
	body	g	EB/ISM	G	6.5	—	
	body	g	E B	G	6.5	—	Bottle
	body	g-o	E B	H	7.0	—	
	body	g-h	E B	F	5.9	—	
	body	g	I SM	E	6.7	—	
	base	g-h	E SM	E	12.0	—	
	base	g-h	I SM	D	9.7	—	
	Unit 1, lv. 7	rim	g-h	I/E B	G	7.1	—
body		g-h	I/E SM	E	8.9	—	
body		g-h	IB/ESM	G	8.6	—	
body		g	I/E SM	F	8.5	—	
body		g	I/E B	K	5.7	—	

Provenience	Sherd	Temper	ST*	FC	Th	Decoration	Comments
<b>Utility wares</b>							
Unit 1, lv. 1	rim	g-h/SP	I SM	A	5.0	vertical and diagonal incised lines	—RO, ext f
	body	g	I SM	G	7.0	parallel brushed and overlapping incised lines	
	body	h/SP	I SM	C	7.2	overlapping brushed	
	body	g-h	I SM	A	6.6	parallel brushed	
	body	g-b-h	I SM	G	8.5	parallel brushed	
	body	g-h	I SM	C	7.0	overlapping brushed	
	body	g	I SM	F	8.3	parallel brushed	
	body	g/SP	I SM	E	8.4	parallel brushed	
	body	g-o	I SM	E	6.0	parallel brushed	
	body	g-h-b	I SM	E	6.6	parallel brushed	
	body	b-h	I SM	A	6.8	parallel brushed	
	body	g-h	I SM	A	6.9	incised-punctated el.	

Provenience	Sherd	Temper	ST*	FC	Th	Decoration	Comments
	body	g-h	I SM	F	7.3	single straight incised line and tool punctated filled zone	
	rim	g	I SM	G	6.5	vertical fingernail punctated	-RO
	body	g/SP	I SM	G	7.5	fingernail punctated rows	
	body	g-h	I SM	A	6.5	tool punctated rows	
	body	g-h/SP	I SM	K	7.5	applied node and ridge	
Unit 1, lv. 2	body	g	-	B	5.1	applied node	
	body	g	I SM	H	10.3	parallel brushed	
	body	g-h	I SM	C	6.5	overlapping brushed	
	body	g-h	I B	F	7.6	overlapping brushed	
	body	g	I SM	G	8.4	parallel brushed	
	body	g/SP	I SM	E	8.4	parallel brushed	
	body	g-h	I SM	F	7.9	parallel brushed	
	body	g	I SM	E	8.3	overlapping brushed	int. organic residue
	body	g-h	I SM	H	9.8	overlapping brushed	
	body	g	I B	K	7.8	parallel brushed	
Unit 1, lv. 2	rim	g	I SM	F	7.2	diagonal incised lines, closely-spaced	D-FL
	rim	g	I B	E	8.2	Incised el.	EV-RO, 23 cm OD
	body	g	I SM	E	6.5	single straight incised line	
	body	g	I SM	A	6.0	single straight incised line	
	body	g-h	I SM	A	7.3	parallel incised lines, widely-spaced	
	body	g	I SM	C	6.0	incised-punctated el.	
	body	g	I SM	G	7.6	tool punctated row	
	body	g-b-h	E SM	G	7.7	fingernail punctated row	
Unit 1, lv. 3	body	g	I/E B	G	8.2	pinched-fingernail punctated	
	body	h	-	A	6.5	4+ linear punctated rows	
	rim	g-h	I SM	J	7.7	vertical tool punctated rows	D-RO
	body	g-h	I SM	F	7.2	tool punctated rows	
	body	g-h/SP	I SM	F	8.8	fingernail punctated rows	
	body	g-h	I SM	A	5.4	linear fingernail punctated rows	
	body	g-o	I SM	G	7.3	3+ linear punctated rows	
	rim	g-o	I SM	B	7.0	incised rim and pinched strap handle	EV-RO, 24 cm OD
	rim	g	I SM	G	5.8	incised-punctated el.	EV-RO, ext f
	rim	g-h	-	B	8.9	diagonal incised lines	EV-FL

Provenience	Sherd	Temper	ST*	FC	Th	Decoration	Comments
	body	g	I SM	F	8.6	2+ curvilinear incised lines	
	body	g-h	I SM	E	7.2	opposed incised lines	
	body	g-h/SP	I SM	A	7.7	parallel incised lines, widely-spaced	
	rim	h	I SM	A	6.8	vertical brushed	EV-RO
	body	g	I SM	F	7.3	parallel brushed	
	body	g	I SM	E	8.1	parallel brushed	
	body	g/SP	I SM	B	6.5	parallel brushed	
	body	g-h/SP	I SM	C	7.5	parallel brushed	
	body	g-h	I SM	I	7.4	parallel brushed	
	body	g-h/SP	I SM	E	8.4	overlapping brushed	
	body	g	–	F	6.5	overlapping brushed	
	body	g	I SM	A	6.5	tool punctated row above vertical brushing	
Unit 1, lv. 4	body	g-h	I SM	F	6.3	incised-fingernail punctated el.	
	body	h	I/E SM	A	6.3	fingernail punctated row	
	body	g-h	I SM	B	7.7	large fingernail punctate	
	body	g-h/SP	I SM	F	7.3	large fingernail punctates in rows	
	rim	g-h	I B	B	6.6	cross-hatched incised	D-FL
	rim	g	I SM	B	6.2	diagonal incised line	D-RO
	body	g-h	I B	I	8.0	single straight incised line	
	body	b-h	I SM	A	5.9	incised el.	
Unit 1, lv. 4	body	g-h	I SM	E	7.1	parallel incised, widely- spaced	
	body	g	I SM	G	6.3	parallel incised, widely- spaced	
	body	g-h	I B	E	7.3	parallel brushed	
	body	g	I B	I	7.2	parallel brushed	
	body	g-h	I SM	H	7.3	parallel brushed	
	body	g-h	I SM	C	7.6	parallel brushed	
	body	g-h	I SM	G	9.9	overlapping brushed- straight incised line- fingernail punctates through brushing	
Unit 1, lv. 5	body	g-h	I SM	B	7.9	parallel brushed	
	body	g	I SM	G	6.8	parallel brushed	
	body	g-h-o	I SM	F	7.0	parallel brushed	
	body	g-h-o	–	F	8.8	opposed brushed	
	body	g/SP	I B	A	8.0	overlapping brushed	
	body	g-h	–	E	7.4	overlapping brushed	
	rim	g-h	I SM	A	7.8	vertical brushed-incised	D-RO, 18 cm OD

Provenience	Sherd	Temper	ST*	FC	Th	Decoration	Comments
Unit 1, lv. 5	rim	g-h	I SM	A	7.3	horizontal brushed	D-RO, 14+ cm OD
	rim	g-h	–	D	5.3	single horizontal incised line	–RO
	rim	g	I SM	K	6.7	diagonal incised lines	D-FL
	rim	g-h	I SM	G	7.5	horizontal and diagonal incised lines	D-RO
	rim	g-h	I SM	B	8.2	diagonal incised lines	EV-RO, 21 cm OD
	body	g-h/SP	I SM	A	8.2	parallel incised lines, widely-spaced	
	body	g	I SM	H	8.6	parallel incised lines, widely-spaced	
	body	g-h	E SM	A	8.2	straight incised line and single tool punctated row	
	rim	g	I B	G	5.0	incised-punctated el.	D-RO, ext f, 10+ cm OD
	body	g	I SM	H	8.6	straight incised line and row of tool punctates	
	body	g	I SM	H	8.1	finger nail punctated row	
	body	g/SP	–	E	6.0	finger nail punctated rows	
	body	g-h/SP	–	A	8.9	2+ tool punctated rows	
	body	g	I SM	A	7.0	2+ finger nail punctated rows	
	body	g-o	I SM	H	9.9	widely spaced tool punctated rows	
	body	g-h	E SM	A	6.7	straight applied ridge	
	body	h-g	I SM	E	5.2	applied el.	
	body	g-h	I SM	A	6.5	finger nail punctated rows adjacent to applied ridge	
	body	g/SP	I SM	H	8.4	finger nail punctated rows adjacent to 2+ applied nodes	
	body	g-h/SP	I SM	A	8.0	diagonal incised with broad applied ridge with 3+ applied nodes	
Unit 1, lv. 6	rim	g-h	I SM	F	9.6	horizontal brushed	D-RO, 21+ cm OD
	body	g/SP	–	G	7.0	parallel brushed	
	body	g-h/SP	I SM	F	9.2	parallel brushed	
	body	h	I SM	A	6.7	parallel brushed	
	body	g	–	E	6.5	parallel brushed	
	body	g-h	I SM	A	8.1	parallel brushed	
	body	g-h/SP	I SM	H	7.2	parallel brushed	
	body	g/SP	–	A	8.8	parallel brushed	
Unit 1, lv. 6	body	g-h	I SM	A	7.6	overlapping brushed	
	body	g-h	I SM	E	8.9	overlapping brushed	

Provenience	Sherd	Temper	ST*	FC	Th	Decoration	Comments
Unit 1, lv. 6	body	g-h	I B	A	6.4	parallel brushed overlapping straight incised line	
	body	g/SP	I SM	G	8.9	parallel brushed-incised	
	body	g	I B	B	3.9	pinched-diagonal brushed	
	rim	g/SP	I SM	G	5.6	diagonal incised lines, widely-spaced	D-RO, 14+ cm OD
	rim	g-h	I SM	A	7.3	single diagonal incised line	EV-RO, 30 cm OD
	body	h-b-o/SP	I SM	H	7.0	diagonal incised line	
	body	g-o	I SM	F	8.1	opposed incised lines, broad lines	
	rim	g/SP	I SM	B	6.6	incised-punctated el.	
	body	g	I SM	B	5.3	curvilinear incised-punctated el.	
	rim	g-h	I SM	H	8.9	finger nail punctated panels	EV-RO, 22 cm OD
	body	g/SP	–	F	6.6	tool punctated rows	
	body	g	I B	B	8.0	finger nail punctated rows	
	handle	g-h/SP	–	A	12.2	3 vertical applied ridges	
	body	g-o	I B	B	4.2	applied node and tool punctated row	
Unit 1, lv. 7	body	g	I SM	A	6.5	parallel brushed	
	body	g/SP	I SM	K	6.6	parallel brushed	
	body	g	I B	G	7.7	overlapping brushed	
	body	g-h	I SM	C	6.6	parallel brushed	
	body	g-h/SP	I SM	A	7.2	parallel brushed	
	body	g-h	I SM	A	8.7	overlapping brushed	
	body	g	I SM	K	8.2	overlapping brushed	
	rim (3)	g-h-o	I SM	E	8.5	finger nail punctated panels	EV-RO, ext f, 22 cm OD
	body	g-h-o	I SM	E	9.1	finger nail punctated panels	
	body	g	E SM	F	6.2	3+ finger nail punctated rows	
	body	g-h	I SM	F	8.9	parallel broad incised lines	
	body	g/SP	–	A	8.4	single straight incised line	
	body	h	I SM	B	7.4	7+ straight incised lines, closely-spaced	
	<b>Fine wares</b>						
Unit 1, lv. 1	rim	g	E B	B	6.0	Poynor Engraved, <i>var. Hood</i>	D-RO, ext f
	rim	g	E SM	C	4.4	single horizontal engraved line	D-RO
	rim	g	I/E B	H	7.7	horizontal, vertical, and diagonal engraved lines	D-RO

Provenience	Sherd	Temper	ST*	FC	Th	Decoration	Comments
	body	b-g	I/E SM	F	8.4	3+ curvilinear engraved lines	
	body	g-h	–	A	6.3	single straight engraved line	Bottle
	body	g	I/E SM	H	6.2	opposed engraved lines	
	body	g	E SM	F	7.4	hatched engraved triangle	red pigment
	body	h	E B	A	5.9	horizontal and vertical engraved lines	Bottle
	body	g-h	I/E B	B	5.4	opposed engraved lines	
Unit 1, lv. 2	rim	g	I/E SM	A	5.2	Poynor Engraved el.	D-RO, rim peaks
	body	g-h	E B	G	5.4	3+ curvilinear engraved lines, closely-spaced	Bottle
	body	g/SP	I/E SM	F	4.9	engraved el.	red pigment
	body	g-h	I/E SM	A	4.0	2+ parallel engraved lines, closely-spaced	
	body	g	I/E SM	H	7.0	single straight engraved line	
	body	g-h	EB/ISM	F	6.3	Poynor Engraved el.	Carinated bowl
	body	g-h	E B	A	4.3	engraved-punctated el.	Bottle
Unit 1, lv. 3	rim	g-h-o	I/E B	F	6.8	Poynor Engraved el.	D-RO, ext f, 32 cm OD, Carinated bowl
	rim	g	I/E B	F	5.0	Poynor Engraved el.	
	body	g-h	E SM	C	6.0	closely-spaced opposed engraved lines, Poynor Engraved	Bottle
	body	g-h	I/E B	F	8.4	opposed engraved lines, Poynor Engraved	
	body	g-h	EB/ISM	F	6.6	opposed engraved lines, Poynor Engraved el.	Carinated bowl
	body	g-h	I/E B	F	7.0	Poynor Engraved el.	Carinated bowl
	body	g	E SM	G	5.7	hatched engraved circle, cf. Poynor Engraved	
Unit 1, lv. 4	rim	g-h	I/E B	F	6.2	engraved-punctated el. Poynor Engraved	D-FL, 24 cm OD
	rim	g	I/E B	C	5.2	horizontal and diagonal engraved lines	D-FL
	rim	g-h	E SM	A	5.2	single broad engraved line under lip	D-FL
	rim	g	I/E B	B	5.5	3+ horizontal engraved lines, closely-spaced	INV-RO, 19 cm OD
	rim	g-h/SP	E B	H	6.5	Poynor Engraved el.	D-RO



Provenience	Sherd	Temper	ST*	FC	Th	Decoration	Comments
	body	g	E B	B	6.2	2+ parallel engraved lines, closely-spaced	
	body	g-b	I/E SM	A	9.6	opposed engraved lines, Poynor Engraved	
	body	g	E SM	A	7.0	opposed engraved lines	
	body	g	I/E B	F	6.2	single straight engraved line	
	body	g-h	EB/ISM	C	5.5	parallel engraved lines, closely-spaced	
Unit 1, lv. 5	rim	g	EB/ISM	B	9.1	Poynor Engraved el.	D-RO, ext f, 16+ cm OD
	rim	g-h	EB/ISM	C	5.8	multiple diagonal engraved lines, closely-spaced	D-RO, ext f
	rim	g	I/E B	F	5.4	3+ horizontal engraved lines	D-RO
	body	g-o	E B	F	7.9	hatched engraved triangles, Poynor Engraved	Carinated bowl
	body	g-h-b	EB/ISM	F	6.6	hatched engraved triangles, Poynor Engraved	Carinated bowl
	body	g-o	E B	G	6.4	horizontal and diagonal engraved lines	Bottle
	body	h/SP	I/E SM	C	6.4	single horizontal engraved line	Carinated bowl
	body	h-o	I/E SM	H	6.8	Poynor Engraved el.	
	body	g	E B	B	6.5	3+ straight engraved lines, closely-spaced	Bottle
	body	g/SP	E B	G	5.4	2+ straight engraved lines, closely-spaced	Bottle, red pigment
	body	g-h	EB/ISM	F	6.5	single horizontal engraved line	Carinated bowl
Unit 1, lv. 6	rim	g-o	I/E B	F	8.9	Poynor Engraved, <i>var. Hood</i>	D-FL, ext f
	body	g-b	I/E B	B	7.2	single straight engraved line	Carinated bowl
	body	g/SP	–	C	8.9	single straight engraved line	Carinated bowl
	body	g-h	I/E B	F	7.1	parallel engraved lines, closely-spaced	Carinated bowl
	body	g	E B	G	7.1	hatched engraved triangle, cf. Poynor Engraved	
	body	h	EB/ISM	A	7.4	curvilinear engraved lines, Poynor Engraved	Carinated bowl

Provenience	Sherd	Temper	ST*	FC	Th	Decoration	Comments
	body	g/SP	I/E B	F	5.4	engraved circle with punctates, Poynor Engraved, <i>var. Lang</i>	red pigment
Unit 1, lv. 7	rim	g	I/E B	H	5.6	2+ horizontal engraved lines under the lip	red pigment
	body	b-h	E B	-	-	single straight engraved line	

\*ST=surface treatment; I/E=interior/exterior; SM=smoothed; B=burnished

FC=firing condition (see Teltser 1993:Figure 2; Perttula 2005:Figure 5-30).

Th=thickness, in mm

D=direct rim; EV=everted; INV=inverted; RO=rounded lip; FL=flat lip; ext f=exterior folded lip

OD=orifice diameter

g=grog; h=hematite; b=bone; o=charred organic material; SP=sandy paste

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# The Ceramics from a Late Caddo Site on Mud Creek in Cherokee County, Texas

*Timothy K. Perttula*

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## INTRODUCTION

This article discusses the character of a large assemblage of prehistoric Caddo vessel sherds from a Late Caddo site (41CE309) on Mud Creek in Cherokee County, Texas, not far from the creek's confluence with the Angelina River. The site was discovered by Bill Young, an avocational archaeologist and Texas Archeological Steward, on a terrace of Mud Creek, just west of the city of Reklaw, Texas.

During the course of a number of visits to the site in the 1980s, more than 2300 ceramic sherds were collected by Young, most of the sherds being found in the central part of the terrace landform; in this same area, three or more Caddo burials had been previously looted by collectors. A few sherds and Friley points were noted at the southern part of the terrace, suggesting that archaeological materials from a pre-A.D. 900 Woodland period occupation may be present there as well as a more substantial Late Caddo occupation across the remainder of 41CE309.

## ASSEMBLAGE

The ceramic vessel sherd assemblage from 41CE309 includes 2380 sherds. About 2.4% of the sherds are from Woodland period sandy paste Goose Creek Plain, *var. unspecified* vessels (including one sandy paste sherd with a row of small circular punctates), while the remainder of the sherds (n=2323) are from tempered Caddo vessels of several different wares. Almost 60% of these tempered Caddo sherds are from the decorated portions of utility ware and fine ware vessels.

### Plain Wares

The tempered plain wares (n=954) from 41CE309 includes 41 rims, 852 body sherds, and 61 base sherds. There is a substantial plain ware

assemblage of primarily simple bowls, jars, and bottles at the site, as demonstrated by the fact that almost 33% of the rims from the Caddo ceramic assemblage (n=125) are from plain wares. Nevertheless, the plain to decorated sherd ratio of 0.70 from the site, as well as the preponderance of decorated rims (67%), suggests that the majority of the vessels have decoration on either the exterior surface of the rim and/or the body.

### Utility Wares

The utility wares from 41CE309 include 73 rims and 1183 body sherds (Table 1). Utility wares are predominantly from jars used for cooking and food storage, and this ware is certainly the most common kind of pottery vessel made and used at the site by the Caddo people. Approximately 58% of all the rims from 41CE309 are from utility wares.

Among the utility wares, the principal decorative methods present at 41CE309 include incised (32.9% of the rims), punctated (23.3%), and brushed (23.3%). Including both rim and body sherds, more than 72% of the 41CE309 utility ware sherds have brushing marks on either the rim and/or the body of jars; another 3.8% have brushed decorations in combination with another decorative method (i.e., incised, punctated, applied, and incised-applied). Incised jars comprise 13.2% of the utility wares and jars with punctated decorations another 8% (see Table 1).

The brushed rims have horizontal brushing marks on them. Most of the remainder of the brushed vessels (and vessels with brushed bodies and non-brushed decorations on the rim) have vertical brushing on vessel bodies (n=n=833). About 6% (n=54) have overlapping brushed marks on the vessel body, as well as opposed brushing (n=7, 0.8%) and diagonal brushing (n=1) marks. These brushed vessels are likely primarily from Bullard Brushed jars, or types such as Maydelle Incised or Pease Brushed-Incised (see Suhm and Jelks 1962) that have brushed bodies.

**Table 1. Decorated utility wares and fine ware sherds from 41CE309.**

Ware	Rim	Body	N
Utility Ware			
Brushed	17	896	913
Incised	24*	142	166
Punctated	17	83	100
Incised-punctated	7	17	24
Brushed-incised	–	22	22
Brushed-punctated	5	11	16
Brushed-appliqued	–	7	7
Brushed-incised-punctated	1	2	3
Appliqued	1	1	2
Fingernail-impressed**	1	1	2
Pinched	–	1	1
Subtotal	73	1183	1256
Fine Ware			
Engraved	12	99	111
Red-slipped	–	2	2
Subtotal	12	102	113
Totals	85	1284	1369

\*two incised rims have Poynor Engraved-style decorative elements, except that they are executed with incised lines.

\*\*Weches Fingernail Impressed, *var. Weches* (see Stokes and Woodring 1981)

These same sorts of vessels were sometimes decorated on the body with parallel or vertical brushing and sets of vertical incised lines; these brushed-incised sherds represent 1.8% of the utility wares. One of these sherds has parallel brushing marks with incised lines that overlie the brushing. Three sherds from 41CE309 have brushed-incised-punctated decorative elements (see Table 1). One rim has horizontal brushing marks below a row of tool punctates at the lip, and at least one diagonal incised line drawn through the brushing (Figure 1a). The other two are body sherds with parallel brushing marks alongside a single straight incised line; a row of tool punctates has been pushed through the brushing.

Brushed-punctated decorations on utility wares at 41CE309 include five rim sherds (6.8% of the utility ware rims) and 11 body sherds (1% of the utility ware body sherds) (see Table 1). All five rims have horizontal brushing marks, three with tool punctations at the lip and two others with a

single row of tool punctations underneath an everted rim. The body sherds have parallel brushing marks as well as either rows of tool punctates pushed through the brushing (n=10) or a single row of tool punctates adjacent to an area of brushing; in the latter case, the punctates likely ran vertically on the vessel body.

Seven other body sherds have straight applied fillets amidst areas of parallel brushing marks. These applied fillets likely served to divide the body of Pease Brushed-Incised jars into panels filled with vertical brushing marks. Two sherds have applied decorative elements: a rim with a large applied node, and a body sherd with a straight applied fillet.

Among the rim sherds with incised decorative elements, five (22.7%) have sets of vertical incised lines, eight rims have either horizontal (18.2%) or diagonal (18.2%) incised lines, and six rims have cross-hatched (13.6%) or opposed (13.6%, see Figure 1d) incised lines; the latter rims and the diagonal

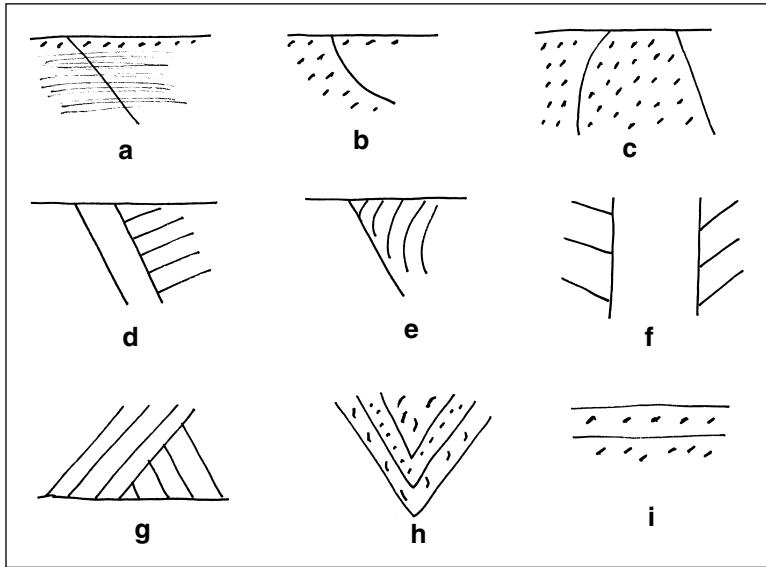


Figure 1. Selected decorative elements in the 41CE309 utility wares: a, brushed-incised-punctated rim sherd; b-c, i, incised-punctated rim sherds; d, incised rim sherd; e, Poynor Incised rim sherd; f-g, incised body sherds; h, incised-punctated body sherd.

incised lines are likely from Maydelle Incised jars. Three other incised rims have vertical and diagonal lines (n=1), vertical and diagonal opposed lines (n=1), or curvilinear incised lines (n=1). Most of the incised body sherds have simple straight or geometric decorative elements, the most common being sets of parallel lines (n=61) with different spacing between lines (the majority having closely-spaced lines), single straight lines (n=36), and opposed incised lines (n=32, see Figure 1g). Another body sherd has incised panels (see Figure 1f), and two body sherds have a single curvilinear incised line.

Three of the incised sherds from 41CE309 are from carinated bowls that have decorative elements otherwise found only on Poynor Engraved vessels; in these cases, the decorative motif was executed before the vessel was fired, rather than after firing. These Poynor Incised vessels include one rim with hatched triangles (see Figure 1e), another rim with an incised circle, scroll, and hatched triangles (Figure 2g), and a body sherd with hatched triangles and diagonal incised lines (also likely part of a scroll element).

The incised-punctated vessel sherds are diverse, even though they only comprise 1.9% of the utility ware sherds and 9.6% of the utility ware rims (see Table 1). Two of the rims have horizontal incised lines above tool punctate-filled zones, while two others have a row of tool punctates at the lip and either diagonal or horizontal incised lines on the rim.

Another horizontal incised rim has a row of tool punctates underneath the lip and above the incised lines. Two other incised-punctated rim sherds have curvilinear incised motifs, one with a zone of tool punctates defined by a single curvilinear incised line as well as a single row of tool punctates below the vessel lip (see Figure 1b) and the other with tool-punctated zones on the rim defined by both curvilinear and diagonal incised lines (see Figure 1c).

The majority of the incised-punctated body sherds have a single straight incised line framing a zone of tool punctates (n=9). Two other body sherds, from Maydelle Incised jars, have incised triangles filled with tool punctates. Other examples include a carinated bowl sherd with horizontal incised lines

above the carination and a row of tool punctates below the carination; a body sherd with diagonal opposed incised lines with different kinds of fingernail and tool punctations between the incised lines (see Figure 1h); another body sherd with tool punctated rows between incised lines (see Figure 1i); a body sherd with horizontal lines above a tool punctated row; and a body sherd with opposed incised lines above a zone of fingernail punctates. The one remaining incised-punctated body sherd has a single curvilinear incised line framing a zone of tool punctates.

The punctated utility ware sherds primarily have tool punctations (n=72, including 16 rims) rather than fingernail punctations (n=28, but only one rim sherd). The punctations occur in rows on the rim and/or body of utility ware vessels. Ten of the tool punctated rims have a single row of punctates under the lip of everted rim jars.

Only a single Killough Pinched body sherd is in the collection from 41CE309. Apparently the Caddo manufacture and use of this distinctive utility ware was most prevalent in the upper part of the Neches River valley (Perttula 2008a).

Two of the utility ware sherds from the site are from pre-A.D. 1300 Weches Fingernail Impressed, *var. Weches* vessels (see Table 1). These two sherds are the only ceramic material culture evidence of an early Caddo use of 41CE309.

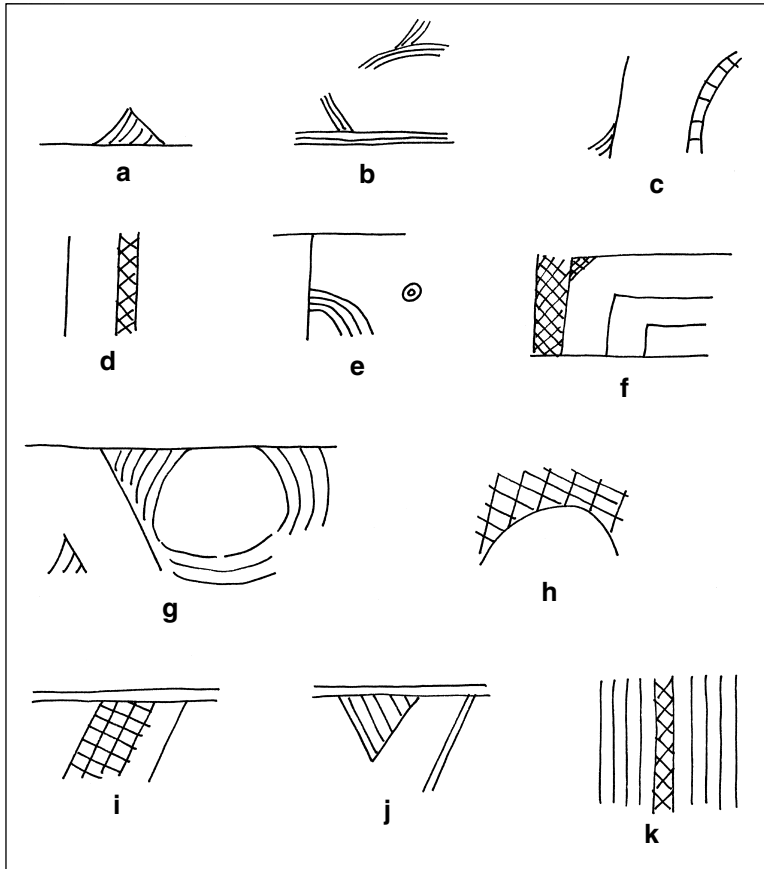


Figure 2. Selected decorative elements in the 41CE309 fine wares: a-d, f, h, k, engraved body sherds; e, i-j, engraved rim sherds; g, Poynor Incised rim sherd.

### Fine Wares

The engraved and red-slipped fine wares include 12 rims and 101 body sherds (see Table 1). The engraved rims, all from carinated bowls, comprise only 8.8% of the rims in the Caddo ceramic assemblage as a whole, indicating that fine wares were only relatively rarely made and used during the Late Caddo occupation at 41CE309. The engraved sherds are divided into carinated bowls ( $n=100$ ) and bottles ( $n=11$ ).

The diversity in decorative elements among the 41CE309 carinated bowl fine wares is considerable (Table 2). In addition to a number of sherds (61%) with relatively simple straight and geometric elements—including horizontal lines ( $n=5$ ), horizontal and vertical lines ( $n=2$ ), opposed lines ( $n=7$ ), cross-hatching ( $n=2$ ), diagonal lines ( $n=3$ ), vertical lines ( $n=2$ ), parallel lines ( $n=18$ ), and single straight lines ( $n=22$ )—there are a few fine ware sherds at 41CE309 that have semi-circle ( $n=4$ , see Figure 2e) or curvilinear ( $n=3$ ) elements (7%), but these are in

the decided minority. Other simple elements include elongated excised triangles (probably pendant from a larger but unknown rim motif).

The more complex engraved decorative elements primarily include those from Poynor Engraved vessels that feature: (a) hatched triangles in combination with horizontal and/or diagonal engraved lines ( $n=12$ , see Figure 2a, j); (b) hatched panels and narrow zones ( $n=4$ , see Figure 2c); (c) cross-hatched zones and panels ( $n=13$ , see Figure 2d, h-i, k); and (d) scroll elements ( $n=2$ , see Figure 2f). Two sherds can be identified as Var. B (see Figure 2f) and Var. S (see Figure 2e) versions of Poynor Engraved as defined from a large sample of whole vessels in the upper Neches River basin (Perttula 2008a:Table 6-37). These particular varieties apparently were made and used in that area in the early part of the Late Caddo Frankston phase, dating from ca. A.D. 1400-1480.

Cross-hatched engraved panels are common features of Poynor Engraved, *var. Hood*, the principal

variety of Poynor Engraved in the upper Neches, as well as four other yet unnamed varieties (Var. D, F, G, and M) of Poynor Engraved (Perttula 2008a). Where the temporal context of these varieties is known, they apparently are common elements in stylistic motifs seen on vessels from mortuary contexts that date from ca. A.D. 1400-1560.

Bottle sherds are not common at 41CE309, accounting for less than 10% of the fine wares. Most of the bottle sherds have widely-spaced curvilinear engraved lines ( $n=6$ ) or curvilinear and opposed engraved lines ( $n=3$ , see Figure 2b). One Poynor Engraved bottle sherd has hatched triangles and engraved scroll elements. The last bottle sherd has a set of opposed engraved lines on the body of the bottle.

Two of the fine ware sherds are red-slipped (see Table 1). One is from a carinated bowl that is red-slipped on both interior and exterior vessel surfaces; the other sherd (from a vessel of unknown form) has a red slip only on the exterior vessel surface.

**Table 2. Engraved decorative elements in the 41CE309 fine ware sherds.**

Decorative element	Rim	Body	N
hatched triangle	–	8	8
hatched triangle and narrow hatched zone	–	1	1
horizontal and diagonal lines and hatched triangle	1	–	1
horizontal lines and hatched triangle	1	1	2
curvilinear hatched zone	–	1	1
horizontal line and oval outlined by narrow hatched zone	–	1	1
hatched panel	–	2	2
excised triangle	–	2	2
cross-hatched panels and zones	–	5	5
parallel and narrow cross-hatched zone	–	1	1
diagonal cross-hatched zones	1	–	1
curvilinear cross-hatched zones	–	3	4
horizontal and vertical lines and triangular cross-hatched zone	1	–	1
straight line and narrow cross-hatched zone	–	1	1
horizontal lines, widely-spaced	–	5	5
horizontal and vertical lines	2	–	2
horizontal lines and scroll element	–	1	1
horizontal interlocking scroll and vertical cross-hatched panel	–	1	1
diagonal and concentric semi-circles	1	–	1
vertical and concentric semi-circles and small circle	1	–	1
opposed lines	–	7	7
cross-hatched lines	–	2	2
diagonal lines	2	1	3
vertical lines	2	–	2
parallel lines, widely-spaced	–	7	7
parallel lines, closely-spaced	–	9	9
parallel lines	–	2	2
hatched semi-circle	–	1	1
hatched circle	–	1	1
single straight line	–	22	22
single curvilinear line	–	3	3
Totals	12	88	100

### **Elbow pipe**

There is a single plain elbow pipe sherd in the collection from 41CE309. Such forms of clay pipes began to be manufactured after ca. A.D. 1350 in the upper Neches River basin in East Texas (Perttula 2008a).

### **Sandy-paste Woodland period pottery**

A total of 57 Woodland period sandy paste sherds are in the Bill Young collection from 41CE309. This includes 51 plain body sherds, two plain rims, two base sherds, a body sherd with a drilled suspension hole, and a body sherd with rows of very small circular punctations. Similar decorated sherds have been found in pre-A.D. 800 Woodland period contexts at relatively well-dated and extensive Woodland period components at Lake Naconiche in the Attoyac Bayou drainage in Nacogdoches County, Texas (see Perttula 2008b).

Sandy paste Goose Creek Plain pottery is some of the earliest pottery made and used by Native Americans in East Texas and Southeast Texas, especially south and west of the Sabine River. The earliest pottery in these regions—Tchefuncte pottery—may date as early as 2500 years ago, if not earlier (see Webb et al. 1969). Saunders and Hays (2004:16) report that Tchefuncte pottery from Louisiana has been dated as early as 2800-3400 years B.P.

Story (1990:275) had suggested some years ago that the earliest sandy paste ceramics in the Conroe-Livingston area dated from ca. 100 B.C. to A.D. 900; she termed this the Early Ceramic period of the Mossy Grove culture in inland Southeast Texas. More recent dating of archaeological components with Goose Creek Plain sandy paste pottery indicates that this distinctive plain ware was made beginning about and after 2500 years ago. Table 3 lists a range of these dated sites—some Mossy Grove, but not all (e.g., Rogers et al. 2001)—and includes sites from inland Southeast Texas and the Louisiana coast to the Sabine River basin in East Texas. The most thoroughly documented (although undated) Woodland period ceramic assemblage in the region is from the Deshazo site (Fields 1995). This site is in the Bayou Loco drainage basin in the southwestern part of Nacogdoches County, Texas. Other well-described Woodland period ceramics include several sites at Lake Sam Rayburn in the Angelina and Attoyac drainage basins in the southern and southeastern part of Nacogdoches and adjoining counties (Jelks 1965).

These dated sites range as late as ca. A.D. 900 in age, as previously indicated by Story (1990). It is possible to refine the ending date for the Woodland period to ca. A.D. 700 or 1250 years B.P. by excluding sites that have early arrow points in addition to, or instead of, Gary and Kent dart points. The latter are apparently diagnostic of the Early Ceramic period (Story 1990:275) in Southeast Texas and perhaps the beginning of the Formative Caddo period. Based on the Table 3 radiocarbon and OSL-dated summary of sites with Goose Creek Plain sherds and the presumed timing in the adoption of arrow points, then, Mossy Grove sandy paste ceramic assemblage from 41CE309 could date conservatively to anywhere from ca. 2470-1250 years ago in the region.

### **Manufacture and use of Bone-tempered pottery**

Bone temper was employed in the manufacture of tempered Caddo vessels from 41CE309, amounting to 15% of the Caddo vessel sherds (Table 4). The remainder of the sherds from the site are from vessels tempered with grog (i.e., crushed sherds or fired clay).

One of the technological features of the post-A.D. 1300 upper Neches River basin Caddo ceramic tradition is the reliance by Caddo potters on the use of grog as the principal tempering aplastic (Perttula 2008a). Such is the situation in the ceramic assemblage at 41CE309. Farther to the east in the Angelina, Attoyac, and Sabine River drainages (see Perttula 2008b:Figure 12-3), contemporaneous Caddo ceramic complexes belonging to a different ceramic tradition are dominated by bone-tempered pottery vessels. Only the plain wares (i.e., bowls used in food serving) and decorated utility wares (i.e., used in cooking and storage tasks) at 41CE309 have bone-tempered vessels in any frequency. Bone tempering was clearly not preferred in the manufacture of fine ware vessels.

### **Conclusions**

The abundant ceramic vessel sherds from 41CE309 indicate that a substantial prehistoric Caddo settlement was present at the site. The ceramic assemblage from this site is dominated by utility wares and plain wares, with a low frequency of engraved and red-slipped fine ware vessel sherds. The predominance of utility wares and plain wares would be expected at a Caddo domestic residential



**Table 3. Dated sites in eastern Texas and southwestern Louisiana with Goose Creek Plain ceramic sherds.**

Site	Radiocarbon age range	Reference
16CU108	2470-2200 B.P.	Aten and Bollich 2002:Table 1
Lake Naconiche (41NA231, 41NA236, 41NA285)	2230-1810 B.P.*	Perttula 2008b
41RK222	2150-1550 B.P.	Rogers et al. 2001
41PK248	2030-1060 B.P.**	Mike Wilder, 2007 personal communication
41WA47	1900-1500 B.P.	Greaves 2002
41WA218	1700 B.P.	Walter Kingsborough, 2006 personal communication
41PK8	1600-1220 B.P.	McClurkan 1968
41HR273	1400-1280 B.P.	Ensor and Carlson 1991
41WA185	1360-1055 B.P.	Gadus and Fields 1997

\*Later calibrated dates between AD 670-877 from the Boyette site (41NA285) are also associated with sandy paste pottery, but possibly also associated with the adoption of tempered Caddo wares.

\*\*OSL dates

**Table 4. Use of bone temper in the Caddo ceramic wares at 41CE309.**

Ware	No.	% with bone temper
Plain wares	954	15.0
Utility wares	1256	16.2
Fine wares	113	1.8
Totals	2323	15.0

site, one that was probably occupied by several extended families for a generation or more. The common occurrence of brushed utility ware vessel sherds at 41CE309, as well as Maydelle Incised jars, brushed-punctated vessel sherds, and Poynor Engraved fine wares suggest that the Caddo occupation here took place sometime between ca. A.D. 1400-1560. The primary use by Caddo potters of grog temper in the manufacture of the three ceramic wares (plain wares, utility wares, and fine wares) at the site—in conjunction with the ubiquity of brushed cooking and storage jars and several recognized varieties of Poynor Engraved—indicate that the ceramic vessels made, used, and broken at 41CE309 are part of a distinctive post-A.D. 1400 upper Neches River basin Caddo ceramic tradition. That tradition is representative of one aspect of the material culture of Frankston phase Caddo groups, and the Caddo peoples that lived at 41CE309 were

closely affiliated socially and technologically with other Caddo groups living to the north and west in the Neches River valley and its tributaries.

The identification of Weches Fingernail Impressed, *var. Weches* sherds and a fair number of plain sandy paste Goose Creek Plain, *var. unspecified* sherds are ceramic evidence that 41CE309 was also inhabited before ca. A.D. 1300. The more substantial of these earlier occupations was during the Woodland period by a Mossy Grove Culture group (see Story 1990).

#### ACKNOWLEDGMENTS

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# Late Caddo Ceramics from 41HE337 in Henderson County, Texas

*Timothy K. Perttula*

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Site 41HE337 is a Late Caddo settlement located on the north side of Caddo Creek, an eastward-flowing tributary to the Neches River, and just west of the city of Poynor, in Henderson County, Texas. Bill Young, an avocational archaeologist living in Corsicana, Texas, has a substantial collection of Caddo ceramic vessel sherds from the site.<sup>1</sup> He gave his permission to study and document these materials as part of a broader study I am engaged in of post-A.D. 1300 Caddo ceramic traditions in the upper Neches River basin of East Texas (Perttula 2008).

## THE SHERD COLLECTION

Young's collection consists of 485 sherds, including 24 rims, 24 bases, and 437 body sherds (Table 1).

Proportionally, almost 70% of the sherds are plain wares, but this undoubtedly includes some plain body sherds and bases from the undecorated portions of the decorated utility wares and fine wares.

To reduce the ambiguity of sherd proportions because of the mix of plain vessel sherds and plain portions of decorated vessel sherds that may be present in the plain wares, a better comparison of the proportions of the different ceramic wares in the Caddo assemblage is the relative frequency of rim sherds (see Table 1). In this case, 29% of the rims are from plain vessels, another 37.5% are from utility wares (jars or bowls decorated with wet-paste designs, i.e., vessels decorated before firing), and the remaining 33.3% are from engraved or lip notched fine wares. On this basis, the proportion of the three wares at 41HE337 is quite comparable.

**Table 1. Ceramic vessel sherds from 41HE337.**

Category	Rim	Body	Base	N
Plain ware	7	305	24	336
<b>Decorated Utility ware</b>				
Incised	3	25	–	28
Punctated	2	26	–	28
Incised-punctated	4	5	–	9
Pinched	–	1	–	1
Brushed	–	52	–	52
Brushed-punctated	–	1	–	1
Appliqued	–	2	–	2
<b>Fine ware</b>				
Engraved	7	18	–	25
Lip notched	1	–	–	1
Red-slipped	–	2	–	2

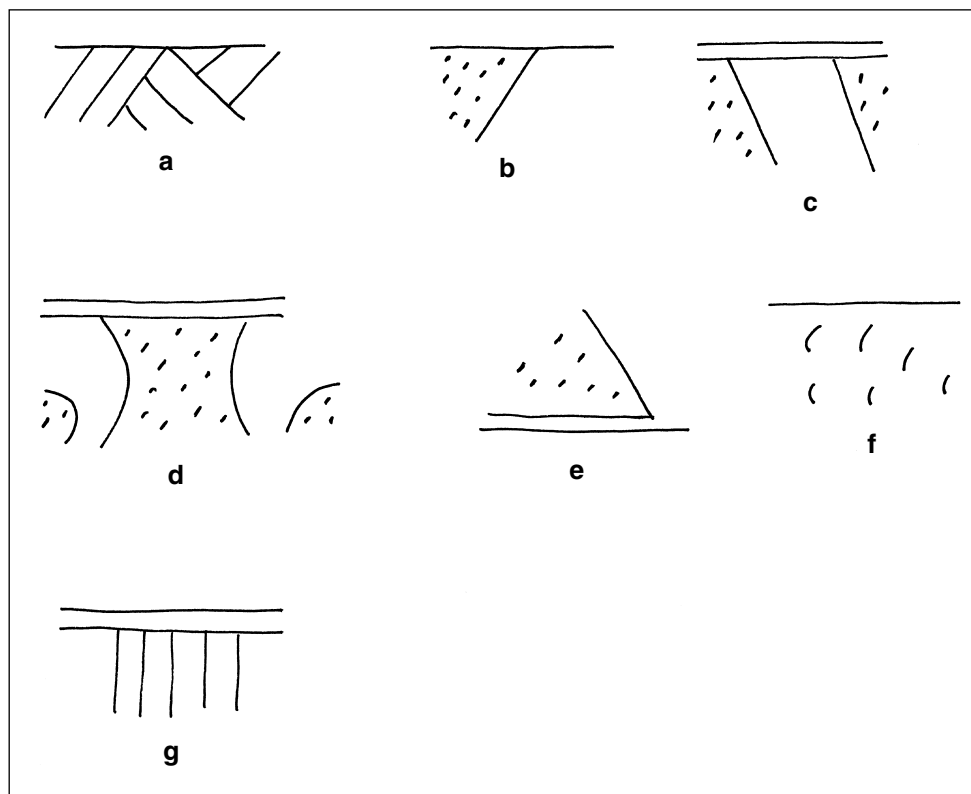


Figure 1. Selected utility wares: a, diagonal opposed Maydelle Incised rim; b, e, incised triangles filled with punctations; c, diagonal incised panels filled with tool punctations; d, curvilinear incised zones filled with tool punctations; f, straight incised line framing fingernail punctated-filled area; g, vertical incised panel.

### Plain wares

As the rim sherd proportions discussed above indicate, plain vessels comprise a significant proportion of the ceramic vessel sherds from 41HE337, including almost 30% of the rims. These plain wares appear to be from simple bowls—either smoothed and/or burnished on one or both vessel surfaces—that would have been used by the Caddo for holding and serving foods, most likely for individual use rather than communal use.

### Decorated Utility wares

Overall, brushing is the most common form of decoration in the 41HE337 utility wares, comprising 43% of the utility wares (see Table 1). However, none of the brushed sherds are rims, strongly suggesting that brushed decorations in this assemblage are confined to the body of jars; the rims of those jars are most likely decorated with non-brushed elements, among them incised, incised-punctated, and punctated elements (see Table 1), as well as occasionally

also being brushed. Brushing on vessel bodies tend to be vertically-oriented or with parallel brushing marks (90%) if the orientation is uncertain, but overlapping (2%), and opposed (8%) brushed body surfaces are also noted in the 41HE337 assemblage.

One sherd has parallel brushing on it, along with at least one row of tool punctations that have been pushed through the brushing. This kind of brushed-punctated decoration is relatively common in post-A.D. 1350 Caddo ceramic assemblages in the Neches and middle Sabine river basins of East Texas.

Sherds with incised decorations (n=28) comprise 23% of the utility wares. One Maydelle Incised rim has diagonal opposed lines (Figure 1a), a second Maydelle Incised rim has diagonal incised lines, while another rim has a vertical incised panel (Figure 1g). Body sherds have sets of parallel incised lines (n=8), opposed incised lines (n=4), cross-hatched incised lines (n=3), and a single straight incised line (n=10).

One incised-punctated body sherd is from a jar with diagonal incised lines on the rim and tool punctates on the vessel body. Two others have a single straight

incised line framing a zone of fingernail punctates (see Figure 1f), and a third with a single straight incised line frames a zone of tool punctations.

Four of the nine incised-punctated sherds are rims of Maydelle Incised vessels; 67% of these sherds employ tool punctations as part of the decorative element. Two of these have incised triangles encircling the rim, and the triangles are either filled with tool punctations (see Figure 1e) or circular punctations (see Figure 1b); a body sherd also has a triangular incised zone filled with tool punctations. A third rim has diagonal incised panels filled with tool punctates (see Figure 1c), and the fourth has large and small curvilinear incised zones filled with tool punctates (see Figure 1d).

The 28 punctated sherds (23% of the utility wares), among them two rims, include 10 (36%) with rows of fingernail punctates and 18 (64%) with tool punctated rows; the proportion of tool versus fingernail punctation as part of the decorative element is almost exactly the same as seen in the incised-punctated utility wares. There is a single Killough Pinched body sherd in the 41HE337 assemblage.

Two body sherds (1.6%) have straight applied ridges on them. These ridges are probably oriented vertically on the body of cooking jars, where their purpose was to divide the body into panels.

### **Fine Wares**

There are three kinds of fine wares at 41HE337: sherds from engraved vessels; sherds from red-slipped bottles and bowls (n=2, 7.1%); and lip notched carinated bowl rims (n=1, 3.6%) (see Table 1). The engraved sherds account for 89% of the fine wares. The vast majority of the engraved wares from the site are from Poynor Engraved (see Suhm and Jelks 1962) carinated bowls, with decorative motifs encircling the rim panel.

One of the rims from a carinated bowl has a series of horizontal engraved lines, a second has both horizontal and opposed lines (Figure 2b), while another has a hatched triangular zone along one side of an oval-shaped area (Figure 2h). Two others only have diagonal engraved lines on the rim. One rim peaked vessel has both a hatched triangular element (i.e., the quintessential Poynor Engraved decorative element) adjacent to an oval or semi-circular area that is bisected by a series of diagonal engraved lines (Figure 2g). The most unique engraved rim, resembling var. S in the upper Neches River basin Poynor Engraved series (Perttula 2008), has a

single horizontal engraved line just below the lip as well as diagonal lines reaching from near the lip to the carination; one of these engraved lines has a set of pendant semi-circles (Figure 2a). Var. S of Poynor Engraved is found in low frequencies in ca. A.D. 1400-1480 Frankston phase sites in the upper Neches (Perttula 2008:Table 6-37).

The body sherds with engraved elements include a number with simple geometric elements: horizontal lines (n=1), diagonal lines (n=1), parallel lines (n=4), and single straight line (n=3). There are also hatched ladder elements (n=1, see Figure 2f), ovals (n=1), hatched triangles and circles (n=1, see Figure 2e), and nested triangles (see Figure 2c). This particular sherd resembles var. E of Poynor Engraved, a post-A.D. 1480 variety in the upper Neches River basin (Perttula 2008:Table 6-37).

Two other sherds have only hatched triangles. One other, from a carinated bowl, has hatched triangles at the end of a scroll element (see Figure 2d). The last remaining carinated bowl engraved sherd from 41HE337 has horizontal engraved lines and a circle element.

There is only a single bottle sherd in the engraved fine ware sherd sample from 41HE337. This has an excised triangle element pendant from a straight line.

Red-slipped sherds in the 41HE337 ceramic assemblage are from two different vessels. The first is a red-slipped (on both interior and exterior vessel surfaces) bowl or carinated bowl, and the second is from a bottle with an exterior red slip. In general, red-slipped vessels are rarely seen in post-A.D. 1300 upper Neches River basin Caddo sites.

The one lip notched rim (inverted rim with a beveled lip) has a regular series of notches cut into the lip. Examination of a large series of whole vessels from the upper Neches River basin suggests that lip notching (usually accompanying an engraved design on the rim panel) was a minor decorative element principally in post-A.D. 1480 Frankston phase contexts (Perttula 2008), but it has also been found in earlier habitation contexts in the basin, including among the ceramic sherds in the northern area (ca. A.D. 1320-1400) at the Lang Pasture site (41AN38)

### **Use of Bone Temper in the Manufacture of Ceramic Vessels**

One of the technological features of the post-A.D. 1300 upper Neches River basin Caddo

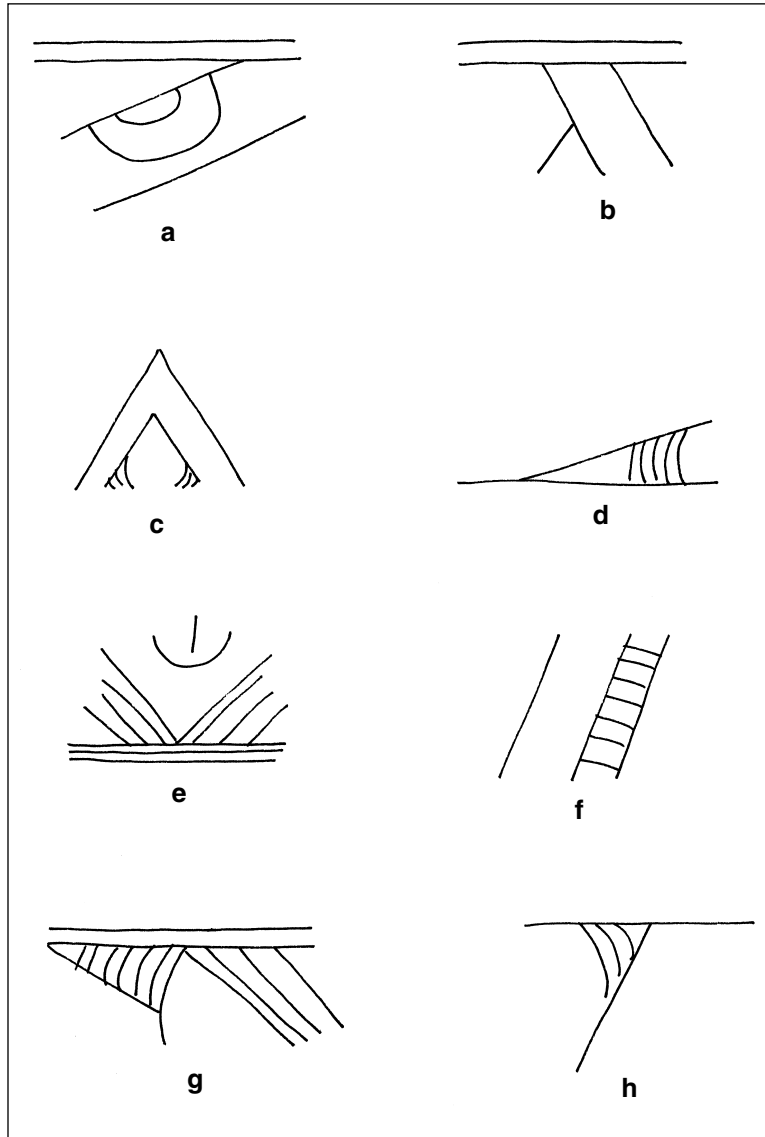


Figure 2. Engraved fine ware sherds from 41HE337: a, horizontal and diagonal semi-circle (Poynor Engraved); b, horizontal and opposed engraved lines; c, nested triangle (Poynor Engraved); d, hatched scroll element (Poynor Engraved); e, hatched triangles and circle (Poynor Engraved); f, hatched ladder; g, hatched triangle and diagonal engraved lines (Poynor Engraved); h, hatched triangle (Poynor Engraved).

ceramic tradition is the reliance by Caddo potters on the use of grog as the principal tempering aplastic (Perttula 2008). Such is the situation in the ceramic assemblage at 41HE337, where only 5.6% of the ceramic vessel sherds have bone temper inclusions (Table 2). Only the plain wares (i.e., bowls used in food serving) and decorated utility wares (i.e., used in cooking and storage tasks) at the site have bone-tempered vessels.

## CONCLUSIONS

The range of decorative elements and motifs in the utility ware and fine ware vessel sherds from 41HE337, as well as the infrequent use of bone-tempering in vessel manufacture, indicate that the prehistoric ceramic vessel sherds here are from a 15<sup>th</sup> century Frankston phase occupation. The character of this assemblage is consistent with other documented Caddo sites in the upper Neches River

**Table 2. Use of bone temper in the different ceramic wares at 41HE337.**

Ware	No. of sherds	Percent of sherds with bone temper
Plain ware	336	5.9
Utility ware	121	5.8
Fine ware	28	0.0
Total	485	5.6

basin that are part of a distinctive post-A.D. 1300 ceramic tradition.

In particular, the ceramic vessel assemblage from 41HE337 includes a number of plain ware vessel sherds, as well as decorated utility wares and fine wares. The utility wares are dominated by incised and incised-punctated Maydelle Incised jars, some of which had been brushed on the vessel body, as well as tool or fingernail punctated jars. There is one Killough Pinched body sherd. The fine wares—including one engraved bottle sherd, two red-slipped sherds, and a well-executed lip notched rim—are dominated by Poynor Engraved carinated bowl

sherds, as is the case at all upper Neches River basin Frankston phase sites. These vessels have panels of engraved ovals, semi-circles, and nested triangles, as well as distinctive hatched triangle elements.

#### END NOTE

1. No arrow points or chipped stone tools were found at the site by Bill Young (May 2008 personal communication). There were a few small flakes, the base of a Dalton point, and a Gary point made of Uvalde gravels quartzite. There were also a very few tiny pieces of non-diagnostic bone.

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# Ceramic Vessel Sherds from the Kah-Hah-Ko-Wha Site (41CE354), an Allen Phase Component in Northwestern Cherokee County, Texas

*Timothy K. Perttula*

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## INTRODUCTION

The Kah-hah-ko-wha site (41CE354) is an Historic Caddo Allen phase (ca. A.D. 1650-1800) habitation site situated in an upland saddle landform in the Flat Creek valley in the upper Neches River basin of East Texas. Flat Creek flows west a few kilometers to its confluence with the Neches River, not far downstream of Lake Palestine. The site was found and investigated as part of survey and test excavation investigations for a proposed U.S. Army Corps of Engineers-permitted lake on Flat Creek in northwestern Cherokee County (Perttula and Nelson 2007).

During those 2006 investigations, a large assemblage of Allen phase Caddo ceramics were recovered from household areas in the North and Alley parts of the site (Perttula and Nelson 2007:Figure 31), making it one of the very few upper Neches Historic Caddo Allen phase domestic sites ever studied (e.g., Cole 1975). As such, a detailed analysis of the domestic ceramics found at the Kah-hah-ko-wha site provides a unique opportunity to document the ceramic practices and traditions of these Caddo peoples.

Ceramic vessel sherds are abundant at the Kah-hah-ko-wha site, with 474 decorated sherds and 94 plain sherds from at least 36 vessels (based on the number of recovered rim sherds). The density of ceramic vessel sherds is 16.9 per m<sup>2</sup> in the North area excavation units (n=213) and 37.0 per m<sup>2</sup> in the Alley area (n=314). The plain/decorated sherd ratio (P/DR) for the site as a whole is only 0.20, quite comparable with the Allen phase component at the Deshazo site (Story 1995; Fields 1995), where the P/DR is 0.29, and the 18<sup>th</sup> century Nabadache Azul and Nabadache Blanco sites in the Neches River basin, Houston County (Perttula and Nelson 2006:62); the P/DR ranges from 0.31-0.32 at these sites. By area, the P/DR in the North area is 0.31, compared to 0.13 from the Alley area.

The lower P/DR from the Alley area suggests this occupation may be slightly younger than the North area occupation, even though the calibrated

radiocarbon dates from the site do not suggest this (see Perttula and Nelson 2007:Table 1). Table 1 provides comparative sherd assemblage data from nearby Lake Palestine sites on the Neches River (see Anderson et al. 1974) and the Lang Pasture site (41AN38, Kelley et al. 2006), about five miles southwest from the Kah-hah-ko-wha site.

In this particular seriation, the Kah-hah-ko-wha site falls in Group I of the seriation, and is interpreted as the youngest or most recent known Caddo occupation of the Lake Palestine area sites. By the late 17th and 18th centuries other Caddo sites are known in the Neches and Angelina river basins where brushed sherds account for ca. 50-90% of all the decorated sherds, which is consistent with the fact that more than 82% of the sherds at the Kah-hah-ko-wha site are brushed.

## DECORATED VESSEL SHERDS

The 474 decorated sherds from the test excavations at the Kah-hah-ko-wha site are grouped into 10 utility ware decorative classes and two fine ware decorative classes (Table 2). Utility ware sherds comprise 88.2% of all the decorated sherds and 62% of the decorated rim sherds. Utility wares generally are jars and simple bowls used for the cooking and storage of foods, as well as food serving, have a coarse temper, and usually lack burnishing, polishing, or slipping on interior and exterior vessel surfaces. Such vessel sherds are decorated with brushing and other wet paste decorative methods, including incising, punctations, appliqued, and neck banded elements, either by themselves or in combination with one or more of these decorative methods. Fine wares, on the other hand, consist principally of engraved and slipped vessel sherds from carinated bowls, bottles, and some simple bowls that were used for food serving and the holding of liquids. The fine ware vessels and vessel sherds more frequently are well-smoothed,

**Table 1. Comparative sherd assemblage data from Lake Palestine, nearby Caddo sites, and the Kah-hah-ko-wha site (41CE354).**

Site	No. of Dec.	% Brushed Sherds	% bone-temper	% Wet-paste decorations	P/DR	Brushed/Wet paste ratio
YOUNGEST SITES: GROUP I						
41CE354	474	82.7	3.1	8.9	0.20	8.14
Debro	311	80.0	?	10.3	0.14	7.75
William Sherman	525	75.8	?	16.2	0.44	4.68
GROUP II						
Forest Drive	1693	68.6	?	21.9	0.56	3.12
Halbert	1757	65.8	2.6	26.3	0.70	2.51
Woldert	1730	62.7	0.0	28.8	0.72	2.19
Ferguson	4116	60.8	<1.0	27.9	0.61	2.17
GROUP III						
Tomato Patch	912	49.2	?	41.7	1.50	1.21
Lang Pasture	2435	35.9	6.7	38.0	1.40	0.91
Mitchell, D	54	32.1	0.0	33.3	1.37	1.50
GROUP IV						
White Mule	1404	18.5	1.5	63.7	2.61	0.29
41HE139	40	17.5	8.1	65.0	2.51	0.33
OLDEST SITE: GROUP V						
Mitchell, A-C	56	1.3	12.0	65.7	1.71	0.03

burnished, or polished on the exterior surface, and have finer temper inclusions and thinner vessel walls than do the utility wares. The fine wares were made, fired, and used in different ways than the utility wares (see below). About 12% of the vessel sherds are from fine wares, including 38% of the decorated rim sherds (Table 2).

The dominance of brushed vessels (Bullard Brushed jars) in the Kah-hah-ko-wha vessel sherd assemblage is clear in the decorated sherd information presented in Table 2. Almost 74% of all the decorated sherds have brushing on either the rim and body of utility ware jars, and the abundance of both brushed rims and body sherds suggests that most of the vessel surface on utility ware jars was covered with brushing marks.

Brushing also occurs in association with punctated, applied, incised, and neck banded utility ware decorations (see Table 2). These decorative classes comprise another 9.1% of the decorated

sherds from the site. The virtual absence of rim sherds among these decorative classes (there is one brushed-punctated rim) indicates that these particular combinations of decorative elements were confined to the vessel bodies of utility ware jars. In the case of the neck banded-brushed La Rue Neck Banded sherd, the neck banding is on the rim or neck of a jar and the brushing was applied vertically on the vessel body (see Suhm and Jelks 1962:Plate 47a, c-d). The incised (3.8%), punctated (0.6%), and applied (1.1%) vessel sherds appear to have had similar decorative elements on both the rim and vessel bodies, although they also occur in combination with brushing on jar bodies. These particular decoration classes represent only a very minor aspect of the decorated utility wares from the Kah-hah-ko-wha site.

The one red-slipped sherd is from a bowl that has a hematite-rich clay slip only on its exterior vessel surface. The engraved fine wares have engraved decorations on the rim of carinated bowls and simple

**Table 2. Decorated sherds.**

Decorative Class	Rim Sherds	Body Sherds	N
<b>Utility Ware</b>			
Brushed	13	336	349
Brushed-Incised	–	26	26
Incised	2	16	18
Brushed-Punctated	1	9	10
Appliqued	1	4	5
Punctated	1	2	3
Brushed-Punctated-Incised	–	3	3
Brushed-Appliqued	–	2	2
Brushed-Punctated-Appliqued	–	1	1
Neck Banded-Brushed	–	1	1
Subtotal	18	400	418
<b>Fine Ware</b>			
Engraved	11	44	55
Red-slipped	–	1	1
Totals	29	445	474

bowls as well as engraved decorations over most of the body of bottle vessel forms.

There are important differences in the kinds and relative abundance of the different vessel sherd decorative classes between the Alley and North areas (Table 3). The meaning (or meanings) of these differences is explored in the concluding part of this article. One of the main differences are that the frequency of brushed sherds is almost 20% higher in the Alley area than it is in the North area. All sherds with brushing (including those with other decorative elements, such as brushed-punctated) comprise 86% of the Alley area sherds and 76.7% from the North area. Utility ware brushed vessels with combinations of brushing and other decorative elements are more common in the North area, however, particularly vessel body sherds with brushed-incised and brushed-punctated decorations. Brushed-appliqued and brushed-punctated-incised body sherds are found only in the Alley area.

Utility ware vessels decorated with incised elements (probably from Maydelle Incised jars) are more than twice as common in the North area as they are among the decorated sherds in the Alley

area (see Table 3). Appliqued and punctated vessel sherds are restricted to the Alley area, even though they only account for 2.5% of the area's decorated sherds.

Fine ware engraved and red-slipped sherds are much more abundant in the North area (17.2%) than they are in the Alley area (8.6%) (see Table 3), even though Patton Engraved and Poynor Engraved vessel sherds are present in both areas. Hume Engraved vessel sherds are found only in the Alley area.

In addition to the decorated sherds from the North and Alley areas, five decorated sherds have been recovered in limited investigations in the Southern area (see Perttula and Nelson 2007:Figure 30). These sherds include two parallel brushed body sherds, one parallel brushed-incised body sherd, another sherd with a row of tool punctations, and a bottle sherd with closely-spaced curvilinear engraved lines.

### Fine Wares

The fine ware sherds include 56 sherds, 11 of which are rim sherds (Table 4). The one

**Table 3. Decorated sherds from the 1 x 1 m units in the North and Alley areas.**

Decorative Class	Alley area	North area
<b>Utility Ware</b>		
Brushed	77.8*	66.3
Brushed-Incised	5.0	6.1
Incised	2.9	6.1
Brushed-Punctated	1.4	3.7
Appliqued	1.8	0.0
Punctated	0.7	0.0
Brushed-Punctated-Incised	1.1	0.0
Brushed-Appliqued	0.7	0.0
Brushed-Punctated-Appliqued	1.1	0.0
Neck Banded-Brushed	0.0+	0.0
<b>Fine Ware</b>		
Engraved	8.6	16.6
Red-slipped	0.0	0.6
Totals	279	163

\*percentage; + the one neck banded-brushed sherd in the collection is from a shovel test excavated in the Alley area

red-slipped sherd is from the North area. Three different engraved types are present in the fine ware assemblage: Patton Engraved, Hume Engraved, and Poynor Engraved (Figures 1d-g and 2a-f). Patton Engraved sherds are the most abundant of the fine wares, comprising 37.7% of the engraved sherds from the Alley area and 60.6% of the North area engraved fine wares. The Hume Engraved sherds (16.7%) were only found in the Alley area, while 4.2-7.1% of the engraved sherds are from Poynor Engraved vessels in the two areas. The latter sherds are from the later PP variety of Poynor Engraved defined by Kleinschmidt (1982:Figure 20 and Table 19).

The Patton Engraved sherds are dominated by those with either triangular or linear tick marks on horizontal (the most common element), diagonal, or curvilinear engraved lines on vessel rims (see Figure 1d-g). Triangular tick-marked examples are more common than linear ticks in both site areas, and are slightly more prevalent in the Alley area (75% of the tick marks on Patton Engraved sherds are triangular-shaped, compared to 67% from the North area). One linear tick-marked Patton Engraved sherd from the North area has a white kaolin pigment in

the engraved lines. At the Deshazo site, occupied as late as ca. AD 1720, more than 93% of the Patton Engraved sherds have the triangular tick-marked element (Fields 1995:187, 189).

Other Patton Engraved decorative elements include a small engraved circle (see Figure 2b) without tick marks on one body sherd (see Kleinschmidt 1982:Figure 20). The sherd is from the Alley area. Sherds with broad curvilinear engraved lines, likely part of a concentric circle motif, are also included in the Patton Engraved ceramics from the site; one of these sherds from the North area has a white kaolin clay pigment smeared in the engraved lines. Suhm and Jelks (1962:Plate 59d, h-i, k) and Fields (1995:Figure 64f-g) illustrate vessels and sherds with broad curvilinear lines on the body of bowls and olla-like forms, and with horizontal engraved lines on the rim with triangular tick marks.

The sherds classified as Hume Engraved (see Figure 2a, c) are found only in the Alley area. They are rim and body sherds that have large hatched or excised triangles that are pendant from horizontal engraved lines (see Suhm and Jelks 1962:Plate 42b-c). According to Kleinschmidt (1982:Table

**Table 4. Decorative classes and elements identified in the fine ware sherds.**

Decorative Class and Element	Alley area	North area	Other
<b>Red-slipped</b>			
Ext. red-slipped body	–	3.6*	–
<b>Engraved, Patton Engraved</b>			
Circular element, body	4.2	–	–
Broad horizontal line-Triangular tick marks	–	3.6	–
Horizontal line and Triangular tick mark, body	4.2	3.6	–
Horizontal line and Triangular tick mark, rim	–	–	25.0**
Parallel engraved lines with Triangular tick marks, body	–	3.6	–
Curvilinear lines with Triangular tick marks, body	–	7.1	–
Single straight line with Triangular tick marks, body	4.2	3.6	–
Triangular tick mark, body	4.2	7.1	–
Horizontal line and linear Tick mark, body	–	7.1	–
Horizontal line and linear Tick mark, rim	–	–	25.0**
Horizontal-diagonal lines and linear ticks, body	–	7.1	–
Parallel lines and linear Tick marks, body	4.2	–	–
Linear tick mark, body	–	–	25.0+
Broad curvilinear line, body	12.5	10.7	–
Broad curvilinear lines, Widely-spaced, body	4.2	7.1	–
<b>Engraved, Hume Engraved</b>			
Horizontal engraved and Pendant triangles, rim	12.5	–	–
Broad line and excised Pendant triangle, body	4.2	–	–
<b>Engraved, Poynor Engraved</b>			
Broad horizontal and Opposed lines, rim	4.2	–	–
Broad curvilinear and Horizontal lines, rim	–	7.1	–
<b>Engraved, bottle sherds</b>			
Multiple curvilinear lines, body	–	7.1	–

**Table 4.** (Continued)

Decorative Class and Element	Alley area	North area	Other
Closely-spaced curvilinear lines, body	–	–	25.0#
cross-hatched and horizontal lines, body	4.2	–	–
Hatched zone, body	4.2	–	–
<b>Other Engraved elements</b>			
Horizontal lines and lip notched, rim	4.2	3.6	–
Single slanting line, rim	–	3.6	–
Cross-hatched lines, body	4.2	–	–
Widely spaced parallel lines, body	8.3	7.1	–
Closely-spaced parallel lines, body	–	3.6	–
Widely spaced opposed lines, body	4.2	–	–
Single broad straight line, body	12.5	3.6	–
Totals	24	28	4

\*percentage \*\*North area, surface, +Alley area shovel test, #South area shovel test

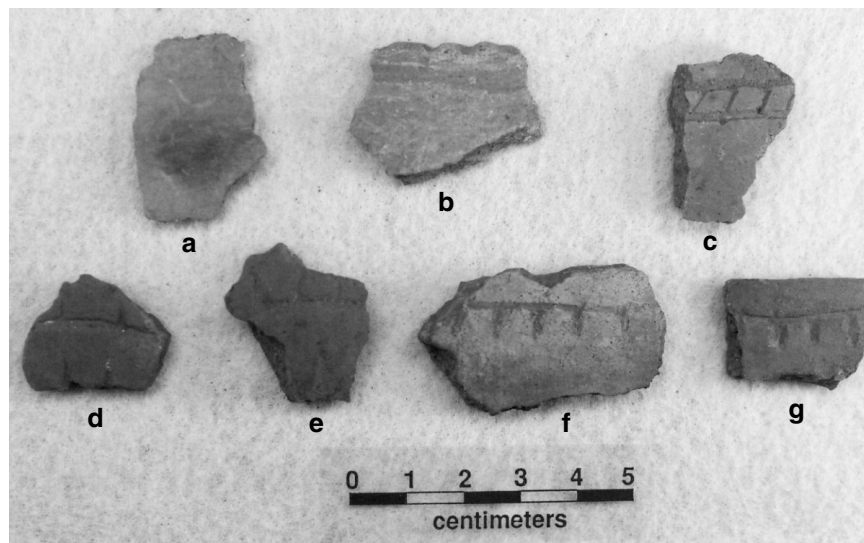


Figure 1. Engraved rim sherds from Patton Engraved, hatched engraved, horizontal engraved/lip notched, and engraved bottle sherd: a, engraved bottle sherd; b, horizontal engraved and lip notched; c, hatched; d-g, Patton Engraved. Provenience: a, Unit 4, 20-30 cm; b, Unit 4, 10-20 cm; c, FS 2, 10-20 cm; d, Unit 13, Fea. 2, 10-20 cm; e, Unit 11, 0-10 cm; f, Surface by Unit 13; g, surface.

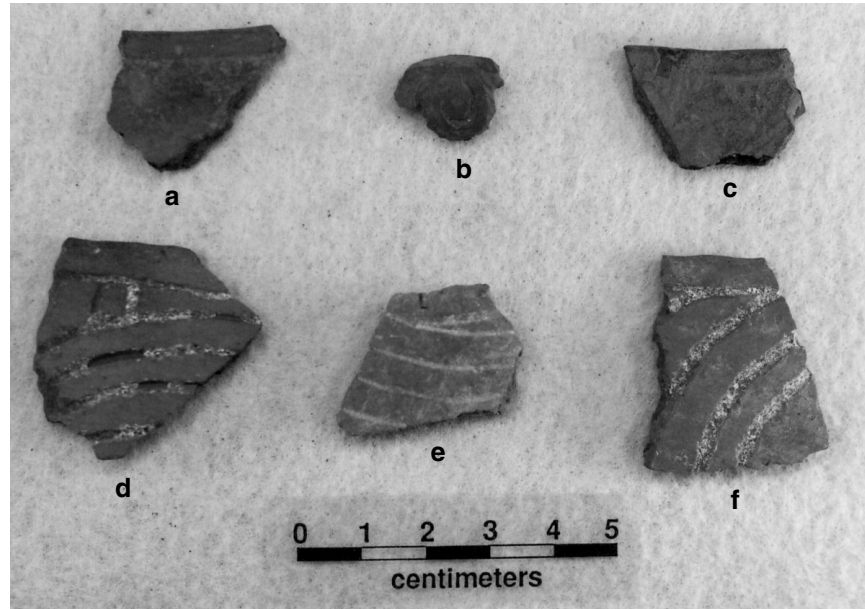


Figure 2. Poynor Engraved, Hume Engraved, and other engraved decorative elements on body sherds: a, c, Hume Engraved; b, circle element (cf. Patton Engraved); d, f, Poynor Engraved; e, multiple curvilinear engraved lines. Provenience: a, Unit 6, 40-50 cm; b, Unit 4, 10-20 cm; c, Unit 2, 10-20 cm; d, Unit 12, Fea. 2, 10-20 cm; e, Unit 9, Fea. 2A, 15-20 cm; f, Unit 12, 0-10 cm.

19), Hume Engraved vessels were made and used in the latter part of the Frankston phase and in the Allen phase, with the highest frequencies of Hume Engraved in Allen phase burials in the upper Neches River basin.

The three Poynor Engraved sherds (PP variety) are bowl rims (see Figure 2d, f). The two rims from the North area have a white pigment in the engraved lines. These particular sherds have a single broad horizontal engraved line on the rim that is connected to a series of either opposed or curvilinear engraved lines that would have extended across the rim surface. The PP variety of Poynor Engraved is found most frequently in late Frankston (ca. mid-16<sup>th</sup> to mid-17<sup>th</sup> century) and Allen phase contexts (Kleinschmidt 1982:Table 19).

There are a few engraved bottle sherds in the fine wares (see Table 4). They account for 7.1-8.4% of the engraved fine ware vessel sherds in the North and Alley areas, and another bottle sherd was recovered from the Southern area. The North and Southern area bottles have multiple sets of curvilinear lines on the vessel body (see Figure 2e), while the Alley area bottle sherd has an engraved zone filled with hatched lines (see Figure 1c). This particular bottle sherd may be from a Hume Engraved bottle (e.g., Suhm and Jelks 1962:Plate 42b, e; Kleinschmidt

1982:Figure 20).

The remainder of the engraved sherds mainly have unidentifiable decorative elements and motifs (see Table 4). They have simple sets of parallel or opposed engraved lines. A notable exception are the two lip-notched rims (see Figure 1b) from the Alley and North areas, possibly from Patton Engraved vessels, and the cross-hatched engraved body sherd (see Figure 1a) from the Alley area. Kleinschmidt (1982:Tables 4 and 5) notes that approximately 2% of the 581 engraved vessel batches at the Frankston phase A. C. Saunders mound site (41AN19) have lip notched rims: nine Poynor Engraved rims and four rims from unidentified engraved wares.

### Utility Wares

The principal utility ware vessel sherds from the Kah-hah-ko-wha site have grass and frayed-stick brushing marks on them. The brushing typically covers both the rim and the vessel body, extending almost to the vessel base (Suhm and Jelks 1962:21 and Plate 11). These brushed vessel sherds are from Bullard Brushed jars (see Suhm and Jelks 1962; Kleinschmidt 1982).

The brushed rims have horizontal brushing marks (n=8), vertical brushing (n=2), diagonal

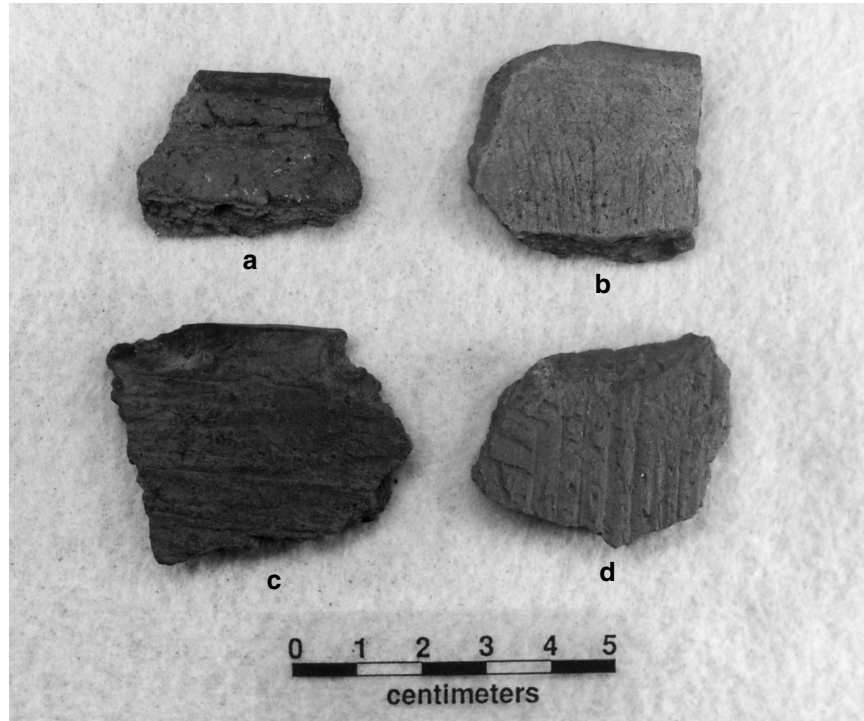


Figure 3. Brushed rim sherds and an opposed brushed body sherd: a, c, horizontal brushed; b, vertical brushed; d, opposed brushed body sherd. Provenience: a, Unit 7, 30-40 cm; b, Unit 1, 30-40 cm; c, Unit 15, 10-20 cm; d, Unit 13, 0-10 cm.

brushing ( $n=2$ ), and one rim with opposed brushing marks (Figures 3 and 4). The diagonal and vertically brushed rims are found only in the Alley area, and the one opposed brushed rim is from the North area (Table 5). Horizontally brushed rims are present in both site areas.

The vessel bodies of the Bullard Brushed jars are usually vertically brushed (Suhm and Jelks 1962:21). It is likely that the many parallel brushed body sherds (Figure 5d; see also Figure 4d) of uncertain orientation in the vessel sherd assemblage (see Table 5) are actually vertically brushed parts of utility ware jars. Between 25.5-29.0% of the jar bodies of these brushed vessels have opposed (see Figure 3d) or overlapping brushing marks (Figure 5a-c).

Less common decorative elements present on utility ware vessel sherds from the Kah-hah-ko-wha site are summarized in Table 6. The brushed-punctated sherds (Figure 6a, d, f) are likely also from Bullard Brushed jars, as they are known to have rows of punctations below the lip and at the rim-body juncture (Suhm and Jelks 1962:Plate 21a-f; Kleinschmidt 1982:Figure 21). The punctations are usually pushed through the brushing marks, however, and this is generally the case in the Kah-

hah-ko-wha decorated sherd assemblage. This is a more common decorative element in the Bullard Brushed vessel sherds from the North area.

Brushed-applied sherds include those with brushing marks paralleling either applied fillets or applied ridges. This form of utility ware decoration is well represented at the Deshazo site (Fields 1995:Figures 60g-h and Figure 62a-c), where the applied elements (including nodes) have been placed on either the rim or the body.

All three of the brushed-punctated-incised body sherds (Figure 7e; see also Figure 6e) are from the Alley area, as are the brushed-applied, applied, punctated, and neck banded utility ware sherds (Figure 7a-d). Although these decorated utility wares are not well represented at the site, the fact that they occur in only the Alley area is good evidence for the existence of different and changing utility ware stylistic traditions within the two Allen phase components at the site.

Incised rim and body sherds from Maydelle Incised vessels are particularly common in the North area, while brushed-incised body sherds are well represented in both areas. Elements represented in the incised sherds include horizontal, diagonal,



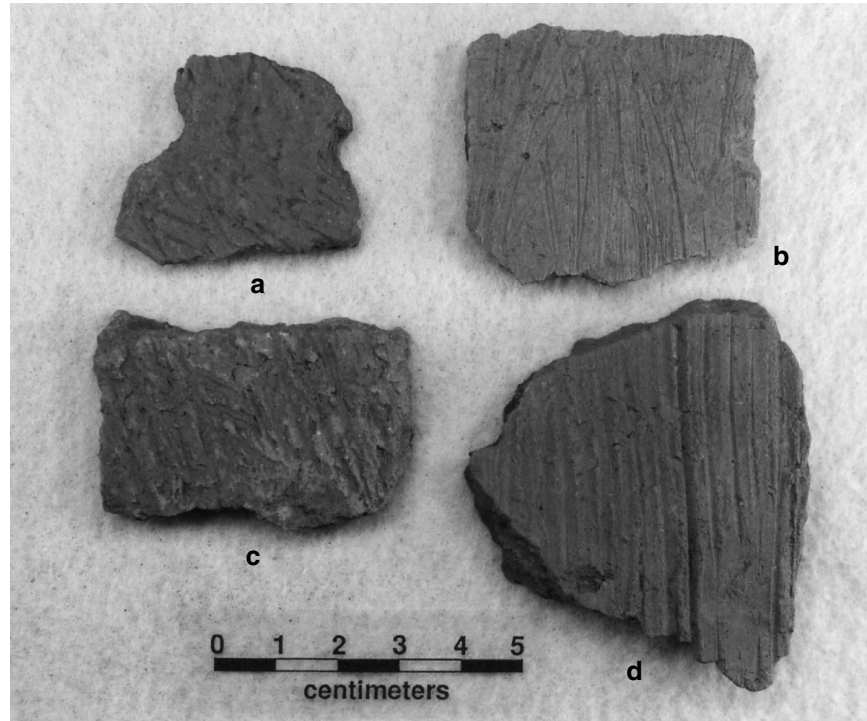


Figure 4. Overlapping brushed rim and body sherds and parallel brushed body sherd: a-c, overlapping brushed body sherds; d, parallel brushed body sherd. Provenience: a, Unit 9, 15-20 cm; b, ST 204, 0-20 cm; c, Unit 9, 10-20 cm; d, Unit 13, Fea. 2, 10-20 cm.

**Table 5. Decorative elements in the brushed vessel sherds.**

Decorative Class and Element	Alley area	North area	Other
Parallel brushed, body	70.8*	66.3	81.0
Opposed brushed, body	2.3	1.9	–
Overlapping brushed, body	23.2	27.1	19.0
Overlapping brushed, rim	–	0.9	–
Horizontal brushed, rim	1.8	3.7	–
Diagonal brushed, rim	0.9	–	–
Vertical brushed, rim	0.9	–	–
Totals	219	107	21

\*percentage

cross-hatched, and opposed lines on the rim and bodies of vessels (see Figure 6b-c), as well as one body sherd with widely-spaced curvilinear incised lines from the North area. Vessels that simply have punctations—usually in rows (see Figure 7d)—are present only in the Alley area, but rarely. Similarly,

punctated sherds account for only 1.6% of the decorated sherds in the Allen phase component at the Deshazo site (Fields 1995:Figure 73a).

The brushed-punctated-incised body sherds are likely also from Maydelle Incised vessels, while the brushed-incised body sherds (Figure 8a-c)—that is,

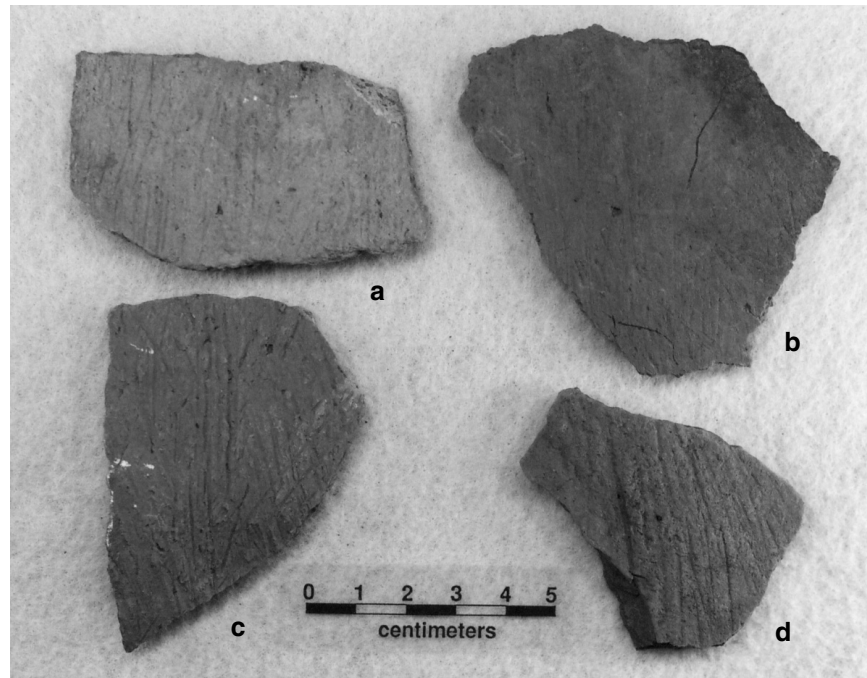


Figure 5. Parallel and overlapping brushed body sherds: a-c, overlapping brushed body sherd; d, parallel brushed body sherd. Provenience: a, FS 1, 20-30 cm; b, ST 224, 20-40 cm; c, Unit 4, 10-20 cm; d, MD 13, 0-20 cm.

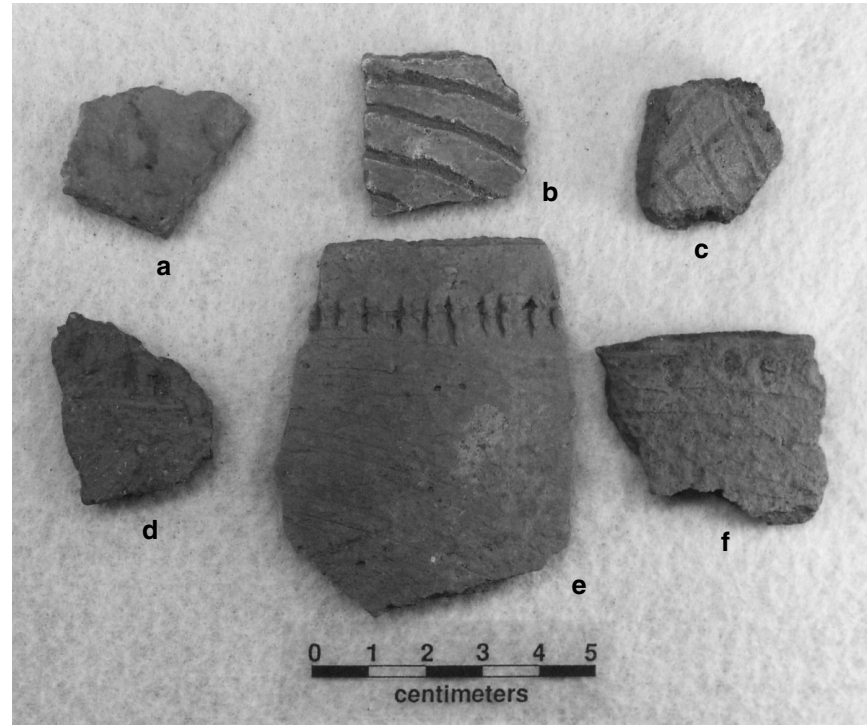


Figure 6. Brushed-punctated, brushed-punctated-incised, and incised sherds: a, d, f, brushed-punctated; b-c, incised sherds; e, brushed-punctated-incised sherd. Provenience: a, Unit 9, Fea. 2A, 10-15 cm; b, Unit 15, 20-30 cm; c, Unit 1, 10-20 cm; d, Unit 15, 30-40 cm; e, FS 2, 10-20 cm; f, Unit 6, 0-10 cm.

**Table 6. Decorative classes and elements for the other decorated utility ware sherds.**

Decorative Class and Element	Alley area	North area	Other
<b>Brushed-Punctated</b>			
Tool punctated row- Horizontal-diagonal brushed, body	–	3.7*	–
Tool punctated row-horizontal Brushed, rim	2.6	–	–
Tool punctated row-horizontal Brushed, body	2.6	–	–
Tool punctations through parallel brushing, body	5.3	11.1	–
Tool punctations through overlapping brushed, body	–	3.7	–
Tool punctations adjacent to parallel brushed	–	3.7	–
<b>Brushed-Punctated-Incised</b>			
Diagonal incised-tool punctated row-horizontal brushed, body	5.3	–	–
Horizontal brushed-linear Punctated-overlapping brushed, body	2.6	–	–
<b>Brushed-Appliqued</b>			
Parallel brushed-appliqued fillet, body	2.6	–	–
Parallel brushed-parallel appliqued ridge, body	2.6	–	–
<b>Brushed-Incised</b>			
Parallel brushed-incised, body	26.3	11.1	25.0
Opposed-parallel brushed- Incised, body	–	11.1	–
Overlapping brushed- Incised, body	7.9	11.1	25.0
Opposed brushed-incised, body	2.6	–	–
Horizontal incised-vertical Brushed, body	–	3.7	–
<b>Brushed-Punctated-Appliqued</b>			
Parallel brushed-appliqued Ridge-tool punctated row, body	–	3.7	–

**Table 6.** (Continued)

Decorative Class and Element	Alley area	North area	Other
<b>Incised</b>			
Parallel and cross-hatched Incised, body	–	3.7	–
Parallel incised, body	13.2	7.4	–
Opposed incised, widely-spaced, body	–	3.7	–
Opposed incised, body	2.6	7.4	–
Curvilinear incised, body	–	3.7	–
Straight incised line, body	–	3.7	–
Diagonal incised, rim	2.6	–	–
Cross-hatched incised, rim	2.6	3.7	–
Horizontal incised, rim	–	3.7	–
<b>Appliqued</b>			
Appliqued node cluster, body	2.6	–	–
Parallel appliqued ridges, body	7.9	–	–
large appliqued node, rim	2.6	–	–
<b>Punctated</b>			
Tool punctated, rim	2.6	–	–
Tool punctated row, body	2.6	–	25.0+
<b>Neck Banded-Brushed</b>			
Neck banded and vertical Brushed, body	–	–	25.0**
Totals	38	27	4

\*percentage, \*\*from a shovel test in the Alley area, +from the Southern area

sherds decorated with marks from bundles of grass crossed or paralleled by various incised lines—are from Bullard Brushed vessels (see Kleinschmidt 1982:Figure 21). Fields (1995:180 and Figure 66a-c) does identify Karnack Brushed-Incised sherds from the Allen phase component at the Deshazo site, but those vessel sherds had parallel incised lines over roughened surfaces, not over well-defined brushing marks as at the Kah-hah-ko-wha site.

Rim sherds are present only in the appliqued, punctated, and incised decorative classes (see Table 6). The other utility ware sherds listed in Table 6 represent the range of decorative elements to be

found only on the vessel body of jars. The one neck banded and brushed body sherd is from a LaRue Neck Banded jar with vertical brushing on the vessel body. The rarity of neck banded pottery in Allen phase contexts is apparent from the fact that only seven of the 23,651 decorated sherds from the Deshazo site have neck banding (Fields 1995:Figure 75f-g). Appliqued sherds at the Kah-hah-ko-wha site (see Figure 7a-c) represent 1.1% of all the decorated sherds, which is slightly more than the relative proportions of appliqued sherds at Deshazo (0.4%). Fillets and nodes can occur on both the rim or the body of utility ware jars.

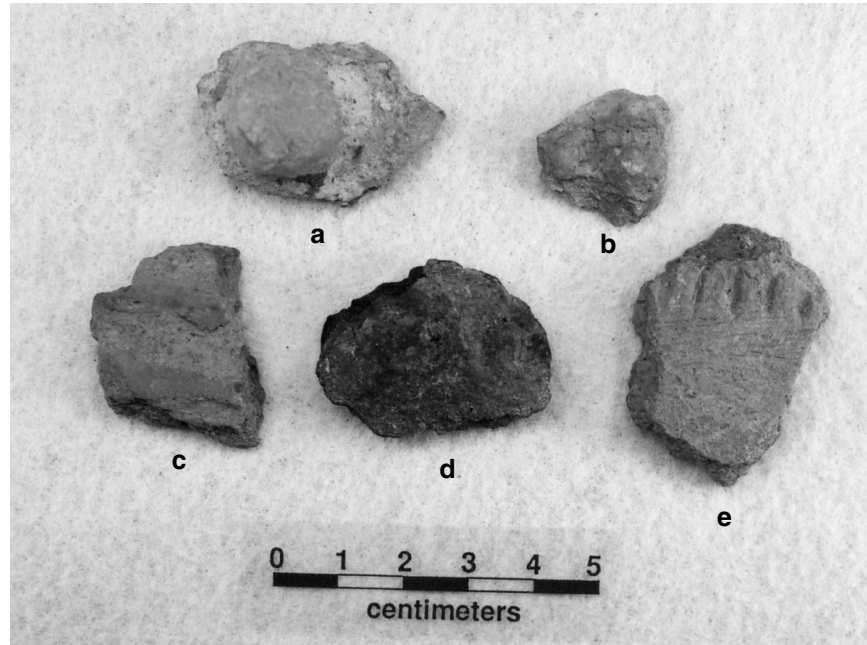


Figure 7. Tool punctated, applied, and brushed-punctated-incised utility ware sherds: a-c, applied; d, punctated; e, brushed-punctated-incised. Provenience: a, Unit 2, 10-20 cm; b, Unit 3, 30-40 cm; c, Unit 7, 20-30 cm; d, Unit 6, 30-40 cm; e, Unit 7, 20-30 cm.

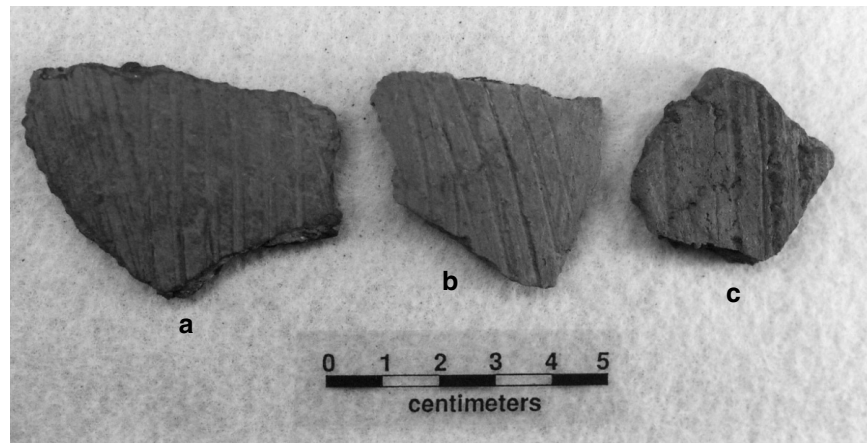


Figure 8. Brushed-incised sherds. Provenience: a, Surface by Unit 13; b, Unit 18, 0-10 cm; c, Unit 13, 10-20 cm.

### Plain Wares

The plain ware vessel sherds include seven rims and 87 body and base sherds. Proportionally, plain ware vessel sherds are more abundant in the North area than the Alley area, as they comprise 24% of all the sherds in the former area and only 11.7% in the latter area. Six of the seven plain rims, apparently from medium-sized bowls, are also from the North area (Figure 9).

### ORIFICE DIAMETERS AND RIM FORMS

Of the 36 rims in the collection from the site, vessel orifice diameter (OD) could be measured on only nine of them: three plain ware bowl rims, three utility ware jar rims, and three fine ware rim sherds. In the plain wares, the OD ranges from 15-17 cm, compared to 16-19 cm in the utility wares; one utility ware rim had an OD greater than 19 cm. These

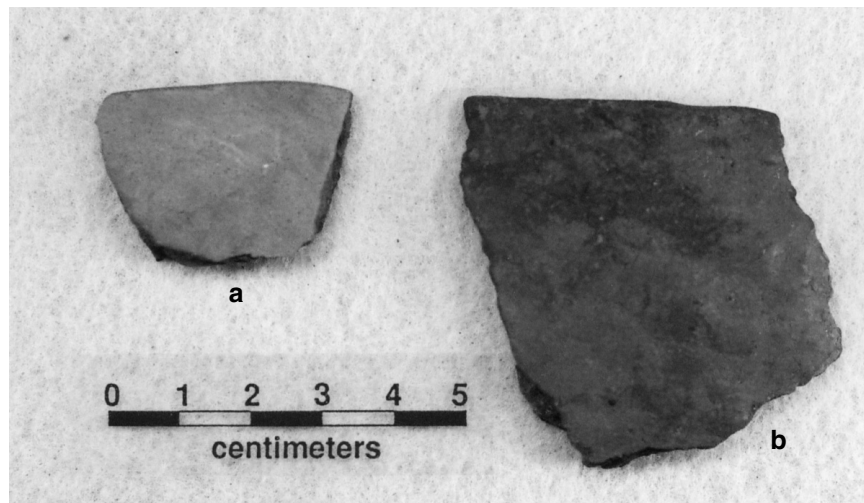


Figure 9. Plain ware rims from the North area. Provenience: a, Unit 20, 7 cm; b, Unit 10, 10-20 cm.

are medium-sized vessels. The fine ware rims (from carinated bowls) are from larger vessels, as the OD values are 16.0 cm, 22.0-24.0 cm, and a third rim with an OD greater than 21.0 cm.

Rim and lip forms vary by vessel ware category (Table 7). Most of the vessels have a direct or standing rim (e.g., Brown 1996:Figure 2-12), but everted rim jars are also well represented in the utility wares. Inverted rim bowls and carinated bowls are only present in the plain wares and fine wares, one plain ware vessel from the Alley area and two carinated bowls in the North area.

Vessel lips tend to be rounded among all three wares, although flat lips are particularly well represented in the plain wares (43% of the rims) (see Table 7). Exterior folded lips occur only in the utility wares; furthermore, this distinctive lip treatment is present only among the Alley area utility wares.

#### **WARE COMPARISONS OF TEMPER, FIRING CONDITIONS, SURFACE TREATMENT, AND WALL THICKNESS**

Certain technological attributes of the ceramic vessel sherds from the North and Alley areas at the Kah-hah-ko-wha site can be compared to determine if there are differences in how the vessels were made, fired, and used across the site. The ceramic attribute data reviewed below is based on detailed decorated (n=168 sherds) and plain sherd (n=59) analyses (Perttula and Nelson 2007:Appendix 5).

Johnson (1992:18) provides a succinct summary of the reconstructed manufacturing process of Caddo vessels that is certainly applicable to the ceramic vessels and vessel sherds recovered from the Kah-hah-ko-wha site:

Caddo pottery... represents an ancient tradition of vessel making that pretty much had all the bugs worked out of it. Even vessels that show poor artisanship exhibit good “engineering”: During the rough stages of work, potters thinned vessels on the inside by scraping them with gourd pieces or other sizeable but thin objects, and then evened up the surfaces by rubbing them, apparently with a stone. Finally, they smoothed the vessels with bundles of grass, pieces of hide, or wet brushes that were not too coarse. In their shaping of vessels, Caddo potters certainly did not mess about with the flat end of sticks... or with bunches of sharp twigs. Furthermore, the rims of most Caddo vessels (except for sharp-rimmed bottles) were made thick enough to stand up under ladle banging, and I have seen no evidence of sloppily repaired greenware cracks or greenware rim peeling. In fact, Caddo potters habitually made an effort to eradicate coil joins and tool marks except inside some narrow-mouthed jars and bottles... All these thinning and smoothing techniques are advanced and quite satisfactory.

**Table 7. Rim and Lip forms.**

Ware	Rim Form			Lip Form			
	D*	EV	INV	RO	FL	RO, ext f	FL, ext f
Plain Ware	5	1	1	4	3	–	–
Utility Ware	8	7	–	11	2	2	1
Fine Ware	9	–	2	9	2	–	–
Totals	22	8	3	24	7	2	1

\*D= direct or vertical; EV= everted; INV= inverted; RO= rounded; FL= flat; ext f=exterior folded

The Allen phase vessel sherds from the Kah-hah-ko-wha site are from vessels that are tempered almost exclusively with grog (fired clay and/or crushed sherds). Between 97.1% and 98.4% of the sampled sherds from the North and Alley areas, respectively, have grog temper inclusions (Table 8). The few sherds that do not have a grog temper either have crushed and burned bone (1.6% of the sherds from the Alley area) or have no temper and a sandy paste (2.9% of the sherds from the North area). Other temper inclusions found in the paste of the vessel sherds are hematite and charred organic remains (i.e., visible pieces of charcoal), but these occur exclusively in association with grog temper.

The variability in temper-paste use in the Kah-hah-ko-wha site ceramics is much lower than that

seen in earlier Caddo sites in the region (i.e., only eight temper-paste combinations here, compared to 31 temper-paste combinations at a ca. A.D. 1150-1430 site reported by Perttula and Nelson [2003], for example). It is fair to conclude that the Kah-hah-ko-wha ceramics are a product of a ceramic vessel making tradition that was quite standardized in manufacturing and vessel engineering, and “pretty much had all the bugs worked out of it” (Johnson 1992:18). The heavy use of grog temper in this ceramic assemblage is completely consistent with other upper Neches River basin Caddo sites (see Table 1), where grog tempered sherds comprise more than 90% of all the sherds from Caddo occupations dating after ca. A.D. 1250.

The very high frequency of grog-tempered pottery at the site is believed to represent a specific

**Table 8. Temper classes by ceramic ware.**

Temper and Paste Class	Alley area			North area		
	FW*	UW	PW	FW	UW	PW
Grog	90.0+	75.0	44.0	73.3	63.6	67.6
Grog-hematite	0.0	11.4	12.0	6.7	23.6	8.8
Grog/sandy paste	0.0	10.2	28.0	13.3	10.9	11.8
Grog-hematite/sandy paste	0.0	1.1	4.0	0.0	0.0	0.0
Grog-organics	0.0	0.0	4.0	0.0	0.0	0.0
Bone-grog	10.0	1.1	8.0	6.7	0.0	2.9
Bone	0.0	2.3	0.0	0.0	0.0	0.0
Sandy paste	0.0	0.0	0.0	0.0	0.0	8.8
Totals	10	88	25	15	55	34

\*FW= fine ware; UW= utility ware; PW= plain ware +percentage

attempt on the part of the Caddo potters to slow the oxidation process of the ceramic vessels during firing. This would have created darker-colored vessels in the reducing environment (or lighter tan, orange, and brown colors in oxidizing environments), while allowing them to be fired longer, and producing a harder ceramic vessel (Rice 1987:354; Teltser 1993:532, 540). Since grog has expansion coefficients comparable to the coefficients of the clay paste—especially with the finely crushed grog pieces as seen in the fine wares—this would have further contributed to the ability of fired vessels to withstand heat-related stresses, as well as increasing their flexural strength (Rice 1987:362).

Between 12.5-14.6% of the sherds from the Kah-hah-ko-wha site have a sandy paste (see Table 8). This suggests the frequent use of a sandy clay for vessel manufacture. The highest proportions of sandy paste sherds are in the plain wares (20.3%), with lesser amounts among the utility wares (11.3%) and the fine wares (8.0%). The plain wares—along with the utility wares from the North and Alley areas—also have the highest proportions of crushed hematite and bone-tempered sherds in the assemblage (see Table 8). It is probable that the Caddo potters recognized that sandy clays held up better to heat-related stresses and helped with vessel porosity and thermal conductivity, which would have had practical value given the repeated use of utility ware vessels for the cooking of foods and the serving of foods and liquids in simple bowls (see Rice 1987, 1996). The relatively high amount of quartz sand in the paste of certain utility ware and plain ware vessels may be related to decisions made by Caddo potters to be able to better control the making and firing of harder and more durable vessels.

The use of hematite as a temper may have served the same purpose as feldspars, which are often found together in the paste of Caddo vessels. The occurrence of fine grains of these minerals in the paste would have enhanced a vessel's ability to melt and fuse the paste constituents during firing, resulting in a dense, hard body, and a reduced vessel porosity (Rice 1987:96).

There are differences in the use of tempers between the fine wares, utility wares, and plain wares, with the highest proportional use of grog in the fine wares (see Table 8), and the lowest among the plain ware vessels. The use of crushed pieces of hematite as temper is more common in the utility and plain wares, especially the utility wares in the North area, and only 4% of the fine wares from both

the North and Alley areas have hematite tempering. Bone tempering occurs in low frequencies in all three ware categories. Coarse sandy paste sherds in the Alley area are found only in the utility wares and plain wares, but is equally prevalent in all three wares in the North area. The two sherds with preserved organic remains in the paste are only in the utility wares and plain wares, one sherd each from both site areas (see Table 8). The sherds from these particular vessels indicate that a certain small proportion of vessels were not fired at high temperatures and/or not fired for a long duration. Accordingly, the organic materials naturally present in the worked clay did not have a chance to be completely burned off during firing.

In addition to these differences in temper between the different wares, there are also subtle differences in temper-paste composition between the ceramic vessel sherds in the Alley area and vessel sherds in the North area (see Table 8). These are summarized below:

- Vessels tempered only with grog temper are 11-17% more common among the utility ware and fine wares in the Alley area, while plain wares are much more likely (23% more likely) to be grog-tempered in the North area;
- Vessel sherds with hematite temper inclusions are more abundant in the North area, especially among the utility wares;
- Bone-tempered vessel sherds are twice as common in the Alley area than in the North area, even though the absolute frequency of bone tempering is low in both areas;
- Plain wares with sandy paste sherds are a good bit more plentiful (32%) in the Alley area than they are in the North area (20.6%), and the overall use of sandy paste sherds is more common in the Alley area.

The Caddo potters at the Kah-hah-ko-wha site fired their vessels in a number of different ways. Most of the fine wares and plain wares were fired in a reducing or low oxygen environment—probably smothered in a bed of coals from a wood fire—as 60-80% of the fine wares and 60-79% of the plain wares were fired this way (Table 9). Most of them were subsequently cooled in a high oxygen environment, probably meaning that the fire-hardened vessel was removed from the fire to cool. A significant number



**Table 9. Firing conditions of the ceramic sherds.**

Firing Conditions*	Alley area			North area		
	FW**	UW	PW	FW	UW	PW
A (oxidizing environment)	30.0+	45.6	16.0	13.3	18.2	11.8
B (reducing environment)	0.0	5.6	12.0	40.0	16.4	29.4
C-E (incompletely oxidized I-L during firing)	10.0	17.8	16.0	6.7	14.5	5.9
F-H (reducing environment, cooled in the open air)	60.0	23.3	48.0	40.0	38.2	50.0
X (possibly refired, smudged, sooted)	0.0	1.1	0.0	0.0	0.0	0.0

\*Categories are based on Teltser (1993: Figure 2) and Perttula (2005:Figure 5-30)

\*\*FW= fine ware; UW= utility ware; PW= plain ware

+%=percentage

of the vessel sherds, however, were allowed to cool in the fire, where they kept their dark surface colors, and this is especially the case in the North area among the fine wares, plain wares, and utility wares.

More of the utility ware vessels were fired in a high oxygen environment than is the case for the fine wares or plain wares (see Table 9). More than 70% of the utility ware sherds from the Alley area and 45% of the North area vessel sherds were from vessels fired in this manner. A number of these utility ware vessel sherds are from vessels that were incompletely oxidized during firing, occurring at rates two to four times higher than in the fine wares.

There are significant differences in how utility ware, plain ware, and fine ware vessels were fired at the site, further differentiating these basic vessel classes. The comparison of sherd firing conditions suggests that the fine ware and plain ware vessel sherds were better made and better fired (at least in terms of regulating the firing temperature), and probably fired longer in a low oxygen environment, than the utility ware sherds. The Caddo potters exerted more control over the end product of fine ware and plain ware vessel manufacture than they did with the utility wares, primarily to produce a harder ceramic. The more heterogeneous firing conditions of the utility wares—particularly the many incompletely oxidized vessel sherds—is likely the result of the multi-purpose nature of these vessel forms, as they

were used as cooking pots and storage containers. As long as the porosity of the utility wares was not excessive, they did not need to be fired for as long a time as the harder fine wares to be quite serviceable and without being subject to diminished strength from cumulative thermal fatigue as well as cracks and fractures.

Many of the vessel sherds from the Kah-hah-ko-wha site retain evidence of the smoothing or burnishing of interior and/or exterior surfaces (Table 10). These surface treatments were done to thin and even out the vessel surfaces, strengthen them by melding coil joins, and even to create a surface appearance that enhanced the vessel decoration.

Among the utility ware sherds from both areas of the site, most of them (between 65-71%) have been smoothed on the interior surface, while less than 10% have been smoothed or burnished on exterior surfaces. This smoothing was most likely consistently done to lower the permeability and increase the heating effectiveness of particular vessels (cf. Rice 1996:148), that being the utility ware vessels used for cooking.

The decorated fine ware sherds are more frequently smoothed on the exterior surface than the utility wares (20-40% compared to less than 2%) as well as more commonly burnished on either interior (20-40.0%) or exterior (46.7-60.0%) vessel surfaces. None of the utility ware vessels are burnished on

**Table 10. Surface treatment on vessel sherds.**

Surface Treatment	Alley area	North area
<b>Fine ware</b>		
Interior smoothed	20.0*	46.7
Exterior smoothed	20.0	40.0
Interior burnished	40.0	20.0
Exterior burnished	60.0	46.7
<b>Utility ware</b>		
Interior smoothed	64.8	70.9
Exterior smoothed	0.0	1.8
Interior burnished	10.2	3.6
Exterior burnished	0.0	0.0
<b>Plain ware</b>		
Interior smoothed	32.0	32.4
Exterior smoothed	40.0	26.5
Interior burnished	4.0	20.6
Exterior burnished	12.0	23.5

\*percentage

exterior vessel surfaces. North area fine wares are more likely to have smoothed surfaces than the Alley ceramics (43% versus 30%) while the Alley area fine wares tend to be more commonly burnished (50% versus 33% in the North area).

The comparable smoothing and burnishing of interior and exterior vessel surfaces of the fine wares (not including the bottles, which have a roughened interior vessel body) indicates that the fine wares were not used for cooking purposes, but probably to serve and hold foods and liquids. The smoothed and burnished (60-67% of all the fine ware sherds) surfaces of such vessels would have been advantageous in the repeated use of such serving vessels. The exterior smoothing and burnishing, beyond its purpose in melding coil joins, was probably designed to have stylistic and display purposes, creating a flat and lustrous surface well-suited to highlight the engraved and/or slipped exterior surfaces of the fine ware vessels.

The plain ware sherds are more like the fine wares than the utility wares with respect to vessel wall surface treatments (see Table 10). Smoothing of vessel surfaces is equally common on both the interior (32%) and exterior (26-40%) walls of vessels in both site areas—as it is with the fine wares—and

burnished vessel surfaces are much more common in the plain wares (both interior and exterior surfaces) than they are in the utility wares. This surface treatment information suggests that most of the plain wares were used more like fine wares than utility wares, being well-smoothed and burnished, and probably were made to also be used in the serving of foods and liquids.

The decorated utility ware vessel sherds from both areas at the Kah-hah-ko-wha site have thicker rim and body walls than do the fine ware vessel sherds as well as the plain ware vessel sherds (Table 11). This is to be expected because the utility ware vessels were made to stand up to repeated heating and cooling—and the thicker walls would help lessen heat-related stresses and wall cracking—as well as to have qualities that contributed to better vessel porosity and thermal conductivity during cooking use. The thicker rims on the utility ware vessels (30-40% thicker than the fine ware vessel rims) would have been well-suited to repeated handling and lifting, and in their resistance to breakage and fracturing from serving and stirring utensils.

The North area utility ware vessel sherds are significantly thicker than the Alley area utility wares (see Table 11). It is not clear why there is this

**Table 11. Mean thickness (in mm) of vessel sherds.**

Area	Fine wares		Utility wares		Plain wares		
	Rim	Body	Rim	Body	Rim	Body	Base
Alley	6.58	6.38	8.36	8.69	7.30	7.0	11.26
North	6.70	6.31	9.30	9.03	6.22	7.1	11.24

considerable difference in wall thickness between these two Caddo occupations, but it is another piece in the growing appreciation of the existence of diverse intra-site activities at the Kah-hah-ko-wha site. These thickness differences may be related to the manufacture of larger (and hence thicker-walled) utility ware jars for cooking and storage tasks in the North area when compared to those in use in the Alley area, as well as to basic differences in the use and use-life of these durable vessels. This could include greater storage needs in one area when compared to another and more sustained household cooking requirements—leading to a reliance on larger vessels—and even to differences in the kinds and amounts of clays that were available for vessel manufacture.

Fine ware vessel sherds are well-fired, with hard and durable vessel walls that are quite thin among the broken vessels in both the North and Alley areas (see Table 11). Rim and body wall thickness are equivalent, since there was less need to have a thicker and sturdy rim as well as thick body walls that could handle prolonged use (as there would be in the utility wares) because the fine ware vessels were designed as serving ware and to hold liquids, not for use in daily cooking activities. Plain ware vessels from both areas also have relatively thin rim and body walls (see Table 11), little different from the fine wares, but thick bases that would have lent stability to the plain ware bowls while they were in use.

**SUMMARY OF THE CERAMIC VESSEL SHERD ASSEMBLAGE**

The Caddo ceramic assemblage from the Kah-hah-ko-wha site appears to represent a single Allen phase component with stylistic affiliations to ca. A.D. 1650-1720 Caddo sites in the upper Neches and Angelina River basins. It represents a

non-mortuary Allen phase component, and as such, provides a unique view of the character of the ceramic assemblage in an early historic upper Neches River Caddo domestic context.

The assemblage is dominated by medium-sized vessels with brushed decorations on utility ware vessel sherds, as well as a few incised, brushed-incised, and brushed-punctated jars, engraved fine wares (carinated bowls and bottles, a few of which have a white pigment worked into the design), the heavy use of grog-tempered ceramic pastes, and the common reduced or low oxygen firing of both utility, plain, and fine wares. There are clear differences in both the North and Alley areas in temper and paste attributes, firing conditions, surface treatment, and vessel wall thickness—as well as the kinds of decorations placed on vessel rims and body surfaces of the fine wares, utility wares, and plain wares. These differences can be readily traced to diverse technological, functional, stylistic, and idiosyncratic decisions and strategies (cf. Johnson 1992:16-18) made by Caddo potters from different family or kin groups (e.g., LaVere 1998:92) on how to shape, fire, finish, and decorate ceramic vessels that were used in domestic tasks here. Similar kinds of vessels were also used for ritual and ceremonial activities at community cemeteries and certain family cemeteries.

There are stylistic and technological differences in the ceramic vessel sherds between the North area and the Alley area. These differences may simply represent functional and intra-site differences between two households in a contemporaneous Allen phase community, hinting that some of the Caddo social elite might have been living in one area of the site. Another possibility is that the North and Alley areas were not occupied at the same time by Allen phase families, but the few available radiocarbon dates obtained from the Kah-hah-ko-wha site do not support this contention. If this were shown to be the case following more extensive radiocarbon dating efforts at the site, it does not seem likely

that much time separates the occupations in the two areas because the same principal ceramic types (i.e., Patton Engraved, Poynor Engraved, and Bullard Brushed) are present in both areas. If temporal factors are the primary reason that accounts for the subtle differences in the manufacture, firing, and decoration of ceramic vessels used in both areas, then the Kah-hah-ko-wha ceramic assemblage provides solid evidence for generational changes in Caddo vessel craftsmanship.

Archaeological and ethnographic information on the accumulation of pottery sherds (especially utility ware sherds or cooking-pot sherds) in domestic contexts suggest that 4000-8000 grams of cooking pot sherds would be accumulated through breakage and use per year on a residential site occupied by Native American farmers (see Varien 1999: Table 4.2). We estimate that there are approximately 10,000 grams (1110-1180 sherds, weighing on average 8-9 grams each) of sherds in the North and Alley area principal ceramic concentrations.

Approximately 90% of the sherds (9,000 grams) are from utility ware sherds, based on the proportion of utility ware to fine ware sherds in the overall site ceramic assemblage. This suggests that the utility ware sherds at the Kah-hah-ko-wha site could have been accumulated in toto in only about 1-2 years of occupation by Caddo families living in the North and Alley areas. Since Caddo wood structures would probably only have lasted at most 20 or so years before they began to deteriorate (see Good 1982:69), this ceramic accumulation evidence further suggests that the Kah-hah-ko-wha site was occupied for only a very short time by Caddo peoples and then rather quickly abandoned.

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# **Caddo Ceramics from an Early 18th Century Spanish Mission in East Texas: Mission San Jose de los Nasonis (41RK200)**

*Timothy K. Perttula, Bill Young, and P. Shawn Marceaux*

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## **INTRODUCTION**

Mission San Jose de los Nasonis (41RK200) and two contemporaneous Nasoni Caddo sites (41RK191 and 41RK197) were located by Mr. Bill Young more than 25 years ago in the southern part of Rusk County, Texas (Figure 1) after the general area of the site had been cleared of timber. The mission site covers ca. 6.6 acres of an upland ridge along a small tributary to the Angelina River (Figure 2); the ridge projects into the Angelina River floodplain. The topographic setting of Mission San Jose conforms in all particulars to the settings of other known mission sites established among the Caddo (Corbin 1989:273): small hills adjacent to a floodplain, next to a stream, with the hills “lower extensions of more extensive upland areas.” Corbin (1989:273) also notes that these missions “were located within the area of the local dispersed Caddoan village, none of the locations are places suited to support the Indian-based community that the Spanish hoped to entice to the location.”

This mission was established as one of six different missions by the Spanish in 1716 during their second attempt (the first being in 1690-1691) to establish a religious and political presence among the Caddo peoples (Corbin 1989:269-270) in East Texas, specifically to minister to the Nasoni Caddo living in the area. Mission San Jose de los Nasonis was formally established on July 10, 1716 (Tous 1930). Father Espinosa and Captain Don Domingo Ramon, the leader of the expedition, had noted that there were many Hasinai Caddo ranchos in the general area along with arroyos of water and good places for settlement (Foik 1999:147). Both Nasoni and Nacono Caddo were then living in this area of the Angelina river.

An expedition to bring supplies to the East Texas missions was led by Governor Martin de Alarcon in 1718, and the expedition visited Mission San Jose de los Nasonis in November of that year (see Celiz

1935; Foster 1995:139, 2008:209). Celebrations were held by the missionaries and the local Caddo when the governor arrived. According to the diary of Father Celiz (1935), 31 Caddo had been baptized at Mission San Jose de los Nasonis. Shortly thereafter, in 1719, Mission San Jose was abandoned due to conflicts between the colonial Spanish and French governments (Castaneda 1936:115), and the Spanish withdrew from the region.

The mission was reestablished in August 1721 by the Governor of Texas, Marques de San Miguel de Aguayo (Forrestal 1999; Foster 1995, 2008), along with the five other missions and two presidios that had first been established a few years before. When Aguayo reached Nasoni on August 12th, according to Father Pena, “The Indians of this mission...welcomed him with great demonstration of joy” (Forrestal 1999:198). After restoration of the mission, 300 Nasoni Caddo assembled before the governor as he invested the local Caddo leader (or captain, otherwise known as caddi in the Caddo language) with his insignia of office (a silver-headed baton). Aguayo then:

clothed the captain in a complete suit of Spanish cloth and of the Spanish style, clothed all the rest in the same kind of garments as he had distributed at the other missions, and, as he had done at other pueblos, gave to the missionary Fray Benito Sanchez clothing for the Indians who at the time were absent guarding their cornfields and houses. The natives, 300 of whom were clothed here, were happy, and all day long they brought pumpkins, watermelons, ears of corn and pinole (Forrestal 1999:198-199).

Along with the gifts of clothing, Aguayo likely also distributed other gifts to the Nasoni, as he had done at Mission Concepcion the day before to the Tejas Caddo as well as some visiting Cadodachos

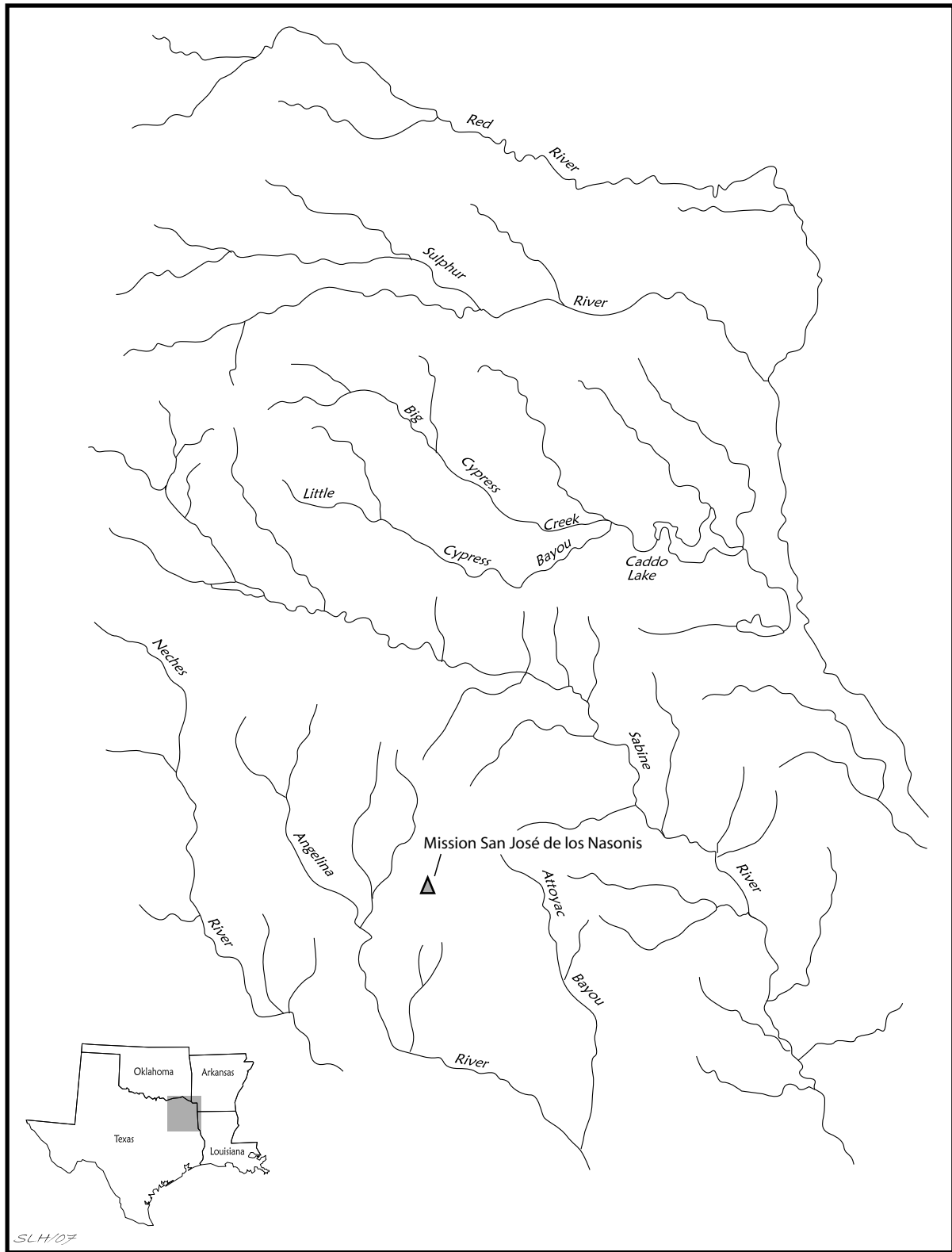


Figure 1. The general location of Mission San Jose de los Nasonis in the Angelina River basin of East Texas.



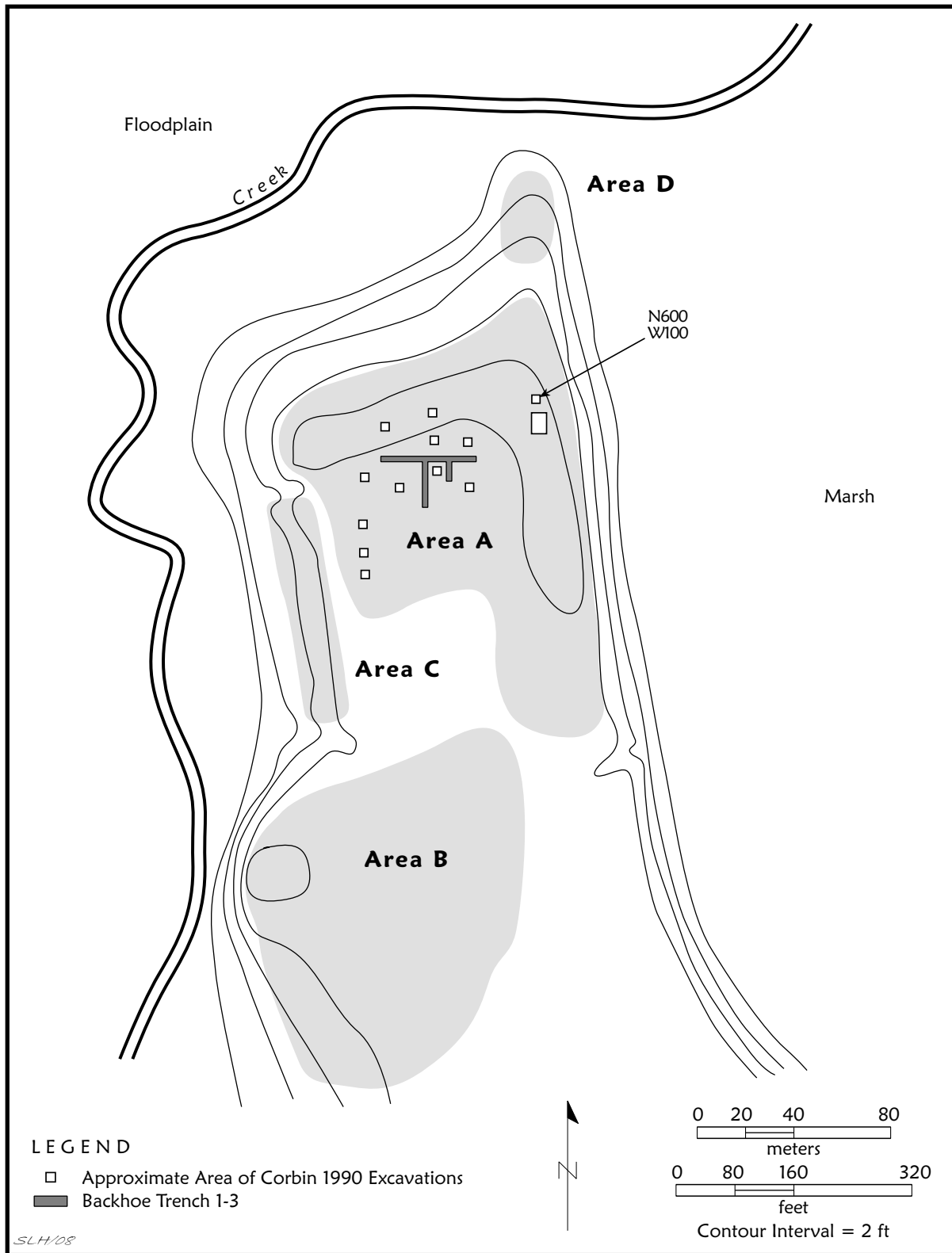


Figure 2. Collection areas A-D at Mission San Jose de los Nasonis (41RK200).

from the Red River. These would have included “knives, combs, awls, scissors, mirrors, *belduques* [large knives], chain-links, *chocomites*, belts, necklaces, earrings, glass beads, and finger rings” (Forrestal 1999:198)

Mission San Jose de los Nasonis was finally and permanently abandoned in 1730, along with Mission San Francisco de los Tejas on San Pedro Creek, Mission Concepcion, and Presidio Dolores de los Tejas. The latter two had been reestablished on the Angelina River, about seven leagues (ca. 18 miles) southwest of Mission San Jose de los Nasonis.

Mr. Young acquired substantial collections of Caddo artifacts and European goods at the mission (from Areas A-D) from surface collections and metal detector surveys (see Figure 2); there also is a considerable Late Paleoindian and Archaic lithic assemblage. His metal detector survey defined four specific concentrations of European metal goods over a 3.8 acre part of Area A and C, and these concentrations, along with aboriginal ceramic artifacts, occur around an open area (mission courtyard or plaza?) with few noticeable artifacts. These concentrations of metal goods probably represent the areas of at least four or five mission structures. He also

obtained surface collections from the two contemporaneous Nasoni Caddo sites.

Mr. Young made those collections available for study in 2006, and this article is a summary of the Caddo ceramics in the Mission Nasonis collections. In 1990, Dr. James E. Corbin of Stephen F. Austin State University (SFASU) and Dr. Kathleen Gilmore of the University of North Texas conducted limited excavations in Area A at the mission site, but these excavations have never been published. More than 930 Caddo ceramic sherds were recovered in that work, and are curated at SFASU; the separate analysis of these ceramic artifacts is underway.

### CADDO MATERIAL CULTURE AT THE MISSION: NASONI CADDO CERAMICS

A total of 8584 aboriginal Caddo ceramic sherds are in the Young collection from Mission San Jose de los Nasonis, along with 559 sherds from the two nearby Nasoni Caddo sites (Table 1). At the mission, the highest numbers of sherds are from Area A (see Figure 2), followed in order by Areas C and B.

**Table 1. Aboriginal Caddo Ceramics from Mission San Jose de los Nasonis (41RK200) and contemporaneous Nasoni Caddo sites (41RK191 and 41RK197).**

Ware and Decorative Method	41RK191	41RK197	A	B	41RK200		Gen.
					C	D	
<b>Plain ware</b>	37.3*	37.7	74.8	63.8	61.4	62.0	75.7
<b>Utility ware</b>	59.6	52.2	23.1	28.9	30.3	38.1	21.6
Brushed rim/body	47.5	42.2	15.6	24.7	23.3	24.6	14.1
Brushed-appliqued body	0.0	0.0	0.0	0.0	0.0	0.0	+
Brushed-Punctated- Incised rim	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Brushed-punctated rim/body	1.7	1.5	0.1	0.6	0.0	0.4	0.2
Brushed-Incised body	0.3	1.0	0.2	0.6	0.0	0.0	0.4
Appliqued	0.0	0.0	+	0.0	0.2	0.4	0.1
Appliqued- Punctated body	0.0	0.0	+	0.0	0.0	0.0	0.0
Punctated rim/body	1.4	2.5	1.9	2.0	0.7	1.9	1.6
Incised-Punctated rim/body	0.3	0.5	0.2	0.0	0.5	0.4	0.3

Table 1. (Continued)

Ware and Decorative Method			41RK200				Gen.
	41RK191	41RK197	A	B	C	D	
Incised rim/body	7.8	4.5	5.1	0.8	5.6	10.4	4.9
Neck banded rim	0.3	0.0	0.0	0.2	0.0	0.0	+
<b>Fine ware</b>	3.4	10.0	2.0	7.2	8.5	0.0	2.9
Engraved rim/body	3.1	10.0	2.0	7.0	8.5	0.0	2.9
Engraved-Punctated body	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Red-slipped body	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Totals	360	199	2426	498	559	260	4841

\*percentage; t=trace

The Nasoni Caddo ceramics found at the mission—presumably in areas where they were used and discarded by missionaries and soldiers—include plain wares, utility wares, and engraved and slipped fine ware vessels. Brushed and incised vessel sherds, as well as plain sherds from undecorated vessels and from the lower parts of decorated vessels, dominate the ceramic assemblage at the mission. Fine wares comprise only between 2-8.5% in any one intra-mission area (see Table 1).<sup>1</sup>

Common decorative elements among the Mission San Jose de los Nasonis utility wares and fine wares are illustrated in Figures 3 and 4. Jars had brushed, brushed-punctated, brushed-appliqued, and brushed-incised decorations on both rim and vessel bodies, and there are identifiable motifs that feature opposed incised, opposed incised-tool punctated, diagonal incised, and vertical incised panels, as well as vertical brushing on bodies with tool punctates pushed through the brushing and horizontal brushing on vessel bodies below a row of tool punctates (probably placed along the rim-body juncture) (Figure 3a-g).

The most recognizable engraved elements at the mission and the Nasoni Caddo sites include ticked horizontal and curvilinear lines from Patton Engraved vessels (Figure 4b-c, j, l), and later forms of Poynor Engraved (*var. Cook* and *var. Blackburn*, see Perttula 2008) also appear to be present in the mission assemblage (Figure 4f, k, m). Among the more distinctive engraved decorations at the mission are a number of sherds with closely-spaced

cross-hatched filled panels on the rim of carinated bowls and a sherd or two with cross-hatched triangles and ovals (Figure 4a, i). Sherds with hatched engraved ladders (Figure 4h) may be from Hume Engraved bottles.

The aboriginal ceramics from the two Nasoni Caddo sites are a good bit different when compared to the assemblage of ceramic vessel sherds from the mission (Table 2). The Nasoni Caddo sites have overall high proportions of decorated sherds (P/DR values of 0.59-0.60:1), particularly brushed sherds, as well as more utility ware vessel sherds, especially brushed-punctated, punctated, and incised rim sherds.

Conversely, at the mission, there are more plain wares—as reflected in the P/DR values that range from 1.59:1 to 3.11:1 by area—as well as engraved fine wares. Although the overall percentage of brushed vessel sherds is at least two times lower at the mission compared to the Nasoni Caddo sites, the proportion of brushed vessels in the decorated sherds is not that different from what has been documented at the former sites (i.e., 60-80.6% versus 71.8-79.2%). What might account for these differences? Several possibilities come to mind, including (a) temporal differences between the mission occupation and the non-mission Nasoni Caddo settlements; (b) differential preferences by Spanish missionaries and soldiers for only certain kinds of Nasoni Caddo vessels; (c) intra- and inter-site functional differences in pottery use, consumption, and discard; and (d) systematic collection biases. These

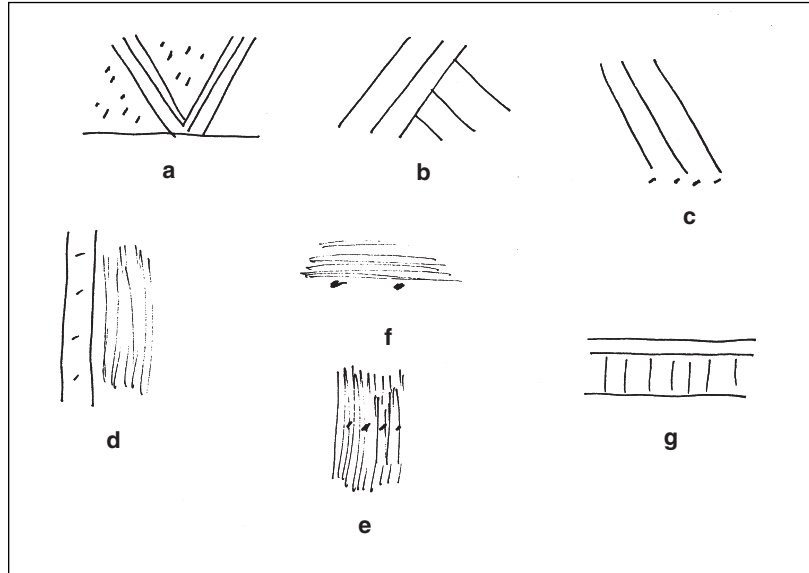


Figure 3. Selected decorative elements in the Mission Nasonis utility wares: a, c, incised-punctated; b, g, incised; d, applied-brushed; e-f, brushed-punctated.

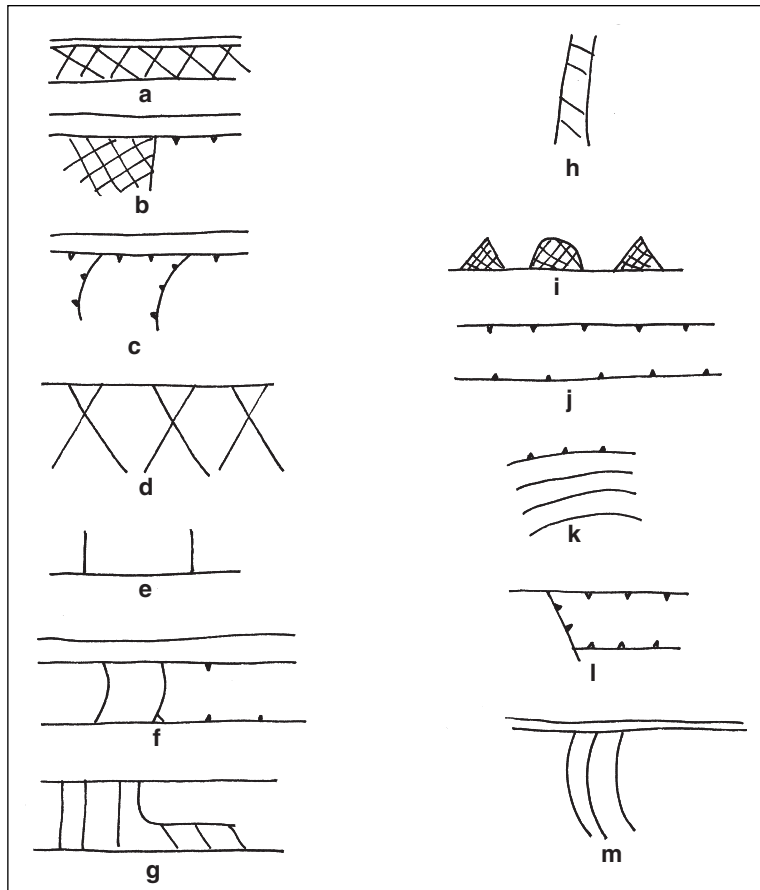


Figure 4. Selected decorative elements in the Mission Nasonis engraved fine ware sherds: a, cross-hatched panel; b, cross-hatched panel and tick marks (Patton Engraved); c, j, l, Patton Engraved; d, cross-hatched; e, horizontal and vertical engraved lines; f, k, m, Poynor Engraved; g, vertical and curvilinear panels; h, hatched ladder; i, cross-hatched triangles and ovals.

**Table 2. Basic Distinctions or Trends in the Character of Nasoni Caddo Ceramic Sherd Assemblages.**

Prevalent decorative methods	Nasoni sites	Mission Nasoni
Plain wares		+
Appliqued body		+
Punctated body		+
Incised-punctated body		+
Incised body		+
Engraved rim/body		+
Engraved-punctated body		+
Fine wares	+	+
Plain rim	+	
Brushed rim/body	+	
Brushed-punctated body	+	
Punctated rim	+	
Incised rim	+	
Utility wares	+	
Red slipped	+	
P/DR	0.59-0.60:1	1.59-3.1:1
% B/DR	71.8-79.2	60.0-80.6

+ = highest proportions in the various assemblages

P/DR = plain/decorated sherd ratio

%B/DR = percentage of brushed sherds divided by all the decorated sherds

and other possibilities may be evaluated if and when further controlled excavations are conducted at the site, or when the detailed analysis is completed of the ceramic sherds from the Area A excavations by Dr. James E. Corbin.

The Mission Nasonis Caddo ceramics are tempered primarily with burned bone and/or grog, either as the sole additive or in combinations with one another, or with hematite or charred organics:

Bone temper	38.7%
Bone-grog temper	17.5%
Bone-hematite temper	2.1%
Bone-organics	1.6%
Bone-grog-organics-temper	1.0%
Grog temper	33.5%
Grog-hematite temper	2.6%
Grog-hematite-bone temper	0.5%
Grog-organics	1.0%
Grog-sandy paste	1.5%

For the assemblage as a whole (considering that many of the sherds had more than one kind of temper), more than 61% of the sherds analyzed in detail

from Mission Nasoni have bone as one of the temper additives to the ceramic vessels used and broken at the mission. Almost 57% have some grog temper, but only 5.2% of the sherds have hematite aplastics, either mixed with grog or bone.<sup>2</sup> The clays chosen for the manufacture of the pottery vessels brought by the Nasoni to the mission had clay or silty pastes, with almost no use of naturally sandy clays; only 1.5% of the vessel sherds analyzed in detail from the Bill Young collection have a sandy paste.

The dominance of bone-tempered pottery at Mission San Jose de los Nasonis, along with the substantial amount of brushed pottery, is good evidence that the Nasoni Caddo ceramic tradition arose in the area between the Sabine River to the north and east and the Angelina and Attoyac basins to the south and west. A brushed bone-tempered cast to the Caddo ceramics in this area can be traced back to as early as ca. A.D. 1200-1250 in this part of East Texas (Perttula 2002:369-370).

Information on firing conditions of a sample of sherds (n=194) from the mission indicate that most of the sherds come from vessels that were fired in a reducing environment (86.1%). Of these, 51%

came from vessels that were removed from the fire to cool down, leaving a thin oxidized band visible on one or both vessel surfaces (Teltser 1993:Figure 2f-h). The remainder of the analyzed sherds are from vessels that were either oxidized during firing (6.2%, Teltser 1993:Figure 2a), or were not fired at a sufficiently hot enough temperature or for a long enough duration to completely oxidize the paste (7.7%, see Teltser 1993:Figure 2c-e).<sup>3</sup>

### CONCLUSIONS

The artifact collection from Mission San Jose de los Nasonis (41RK200) contains a wealth of information about the type of material goods found on an early 18<sup>th</sup> century Spanish mission in East Texas Caddo country, most notably the range of available European goods brought by the missionaries and soldiers or brought to the mission on re-supply treks. Of particular significance in the Mission San Jose de los Nasonis collection is the abundance of Nasoni Caddo ceramics on the mission, which is strong evidence that the missionaries and soldiers interacted with the nearby Nasoni Caddo, who clearly must have supplied the Europeans with hand-made plain and decorated pottery for their use, and probably also supplied them with food stuffs, hides, pelts, and bear grease, among other local and familiar resources. The predominance of bone-tempered Caddo wares at the mission, as well as the dominance of brushed utility wares and Patton and Poynor Engraved fine wares, indicate that the Nasoni Caddo potters living around the mission between 1716-1730 were part of a spatially broad and temporally long-lasting (beginning ca. A.D. 1250) Caddo ceramic tradition in the Neches, Angelina, Attoyac, and middle reaches of the Sabine river basins.

### END NOTES

1. Plain wares account for 58.3% of the sherds from the Area A excavations led by Corbin, while utility wares comprise 37.5% of this particular sample; most of these are brushed body sherds (31.2%) and incised body sherds (3.6%). Fine wares comprise only 4.1% of the sherds from Corbin's excavations in Area A at the site.

2. In the Area A excavations, 74% of the sherds analyzed in detail (n=281) have bone temper, either as the sole aplastic or in combination with grog, hematite, or charred organics. In this same sample, 41% have grog tempering, 17.9% have

some amount of hematite temper (usually occurring in conjunction with burned bone), and 2.2% have charred organics in the paste.

3. In Corbin's Area A excavations, 76.7% of the sherds are from vessels that had been fired in a reducing environment, and most of them were subsequently cooled in the open air.

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