

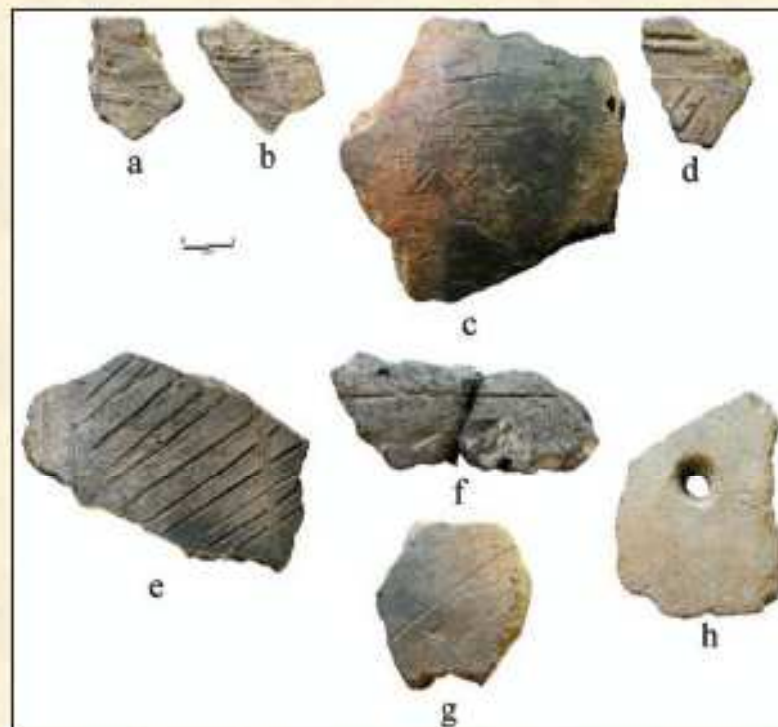
THE STRAWBERRY HILL SITE (41SJ160)

CERAMIC VESSEL SHERD ASSEMBLAGE

SAN JACINTO COUNTY, TEXAS

AND COMPARISONS TO OTHER MOSSY GROVE

CULTURE CERAMIC ASSEMBLAGES



Timothy K. Perttula

**Houston Archeological Society
Report No. 31**

2018

The Strawberry Hill Site (41SJ160)

**Ceramic Vessel Sherd Assemblage
San Jacinto County, Texas
and Comparisons to
Other Mossy Grove Culture
Ceramic Assemblages**

Timothy K. Perttula

The Strawberry Hill Site (41SJ160)

Ceramic Vessel Sherd Assemblage San Jacinto County, Texas and Comparisons to Other Mossy Grove Culture Ceramic Assemblages

Timothy K. Perttula

**Houston Archeological Society
Report No. 31**

2018

Copyright © 2018 by the Houston Archeological Society
All rights reserved.

ISBN 978-1985728660

No part of this book may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system, without the permission in writing of the Publisher. Inquiries should be addressed to the Publications Editor, Houston Archeological Society, PO Box 130631, Houston, TX 77219-0631.

*Front Cover: Selected decorated sherds and a sherd with a drilled
hole from the Strawberry Hill site*

Editor's Foreword

The *Houston Archeological Society Report No. 31* is a publication of the Society. Our Mission is to foster enthusiastic interest and active participation in the discovery, documentation, and preservation of cultural resources (prehistoric and historic properties) of the city of Houston, the Houston metropolitan area, and the Upper Texas Gulf Coast Region.

The Houston Archeological Society holds monthly membership meetings with invited lecturers who speak on various topics of archeology and history. All meetings are free and open to the public.

Membership is easy! As a nonprofit organization, membership in the Houston Archeological Society is open to all persons who are interested in the diverse cultural history of Houston and surrounding areas, as well as the unique cultural heritage of the Upper Texas Gulf Coast Region. To become a member, you must agree with the mission and ethics set forth by the Society, pay annual dues and sign a Code of Ethics agreement and Release and Waiver of Liability Form.

The Membership Form and the Code of Ethics agreement and Release and Waiver of Liability Form are available from the HAS website: <http://www.txhas.org/membership.html>

Current subscription rates are: Student \$15, Individual \$25, Family \$30, Contributing \$35+

Mail the completed and signed forms and a check for the appropriate amount to:

Houston Archeological Society
PO Box 130631
Houston, TX 77219-0631
Web Site: www.txhas.org

Current HAS Board Members:
President: Linda Gorski
Vice President: Louis F. Aulbach
Treasurer: Bob Sewell
Secretary: Beth Kennedy

Directors-at-Large:
Dub Crook
Larry Golden
Liz Coon-Nguyen

Publications Editor:
Wilson W. Crook, III

Contents

Editor's Foreword	v
The Strawberry Hill Site (41SJ160)	
<i>Timothy K. Perttula</i>	1
Introduction	1
Investigations at the Strawberry Hill Site	2
Introduction to the Ceramic Analysis	4
Temper and Paste	4
Firing Conditions	7
Surface Treatment	9
Decorated Sherds	10
Rim and Lip Form	12
Vessel Wall Thickness	12
Sherds with Drilled Holes	13
Bill Moore Sherds from the Strawberry Hill Site (41SJ160)	14
Mossy Grove Ceramic Assemblages from Other Sites in Montgomery, Polk, San Jacinto, and Walker Counties in Southeast Texas	14
Montgomery County Sites	15
Polk County Sites	19
San Jacinto County Sites	35
Walker County Sites	37
Summary and Conclusions	38
Acknowledgments	42
References Cited	43

THE STRAWBERRY HILL SITE (41SJ160) CERAMIC VESSEL SHERD ASSEMBLAGE, SAN JACINTO COUNTY, TEXAS AND COMPARISONS TO OTHER MOSSY GROVE CULTURE CERAMIC ASSEMBLAGES

Timothy K. Perttula

Introduction

The Strawberry Hill site (41SJ160) was excavated by the State Department of Highways and Public Transportation (now the Texas Department of Transportation) in 1974 in advance of a proposed expansion to F.M. 2693 in west central San Jacinto County in southeastern Texas (Figure 1). The site is only a few miles north of the original extent of Big Thicket vegetation in the region (Figure 2). The original extent of the Big Thicket extended across parts of what are now Jasper, Tyler, Orange, Hardin, Polk, Liberty, San Jacinto, and Montgomery counties. Pre-Anglo-American and early historic settlement vegetation in what is now the Big Thicket ranges from “dry pine-covered uplands to majestic beech-magnolia forests, bald-cypress swamps, impenetrable thickets, bogs, canebrakes, and even prairies” (Diggs et al. 2006:173). It had a rich wildlife with many mammal, reptile, amphibian, fish, and bird species.

Studies of the vegetation in the Big Thicket suggests that it was primarily a loblolly pine-hard-

wood association, with white oak, beech, and magnolia, along with an understory of evergreen and deciduous shrubs, climbing vines, and herbs (Diggs et al. 2006:160). Watson (1979:26-59) divided the Big Thicket into nine plant communities, including prairies, longleaf pine uplands, pine savannah wetlands, beech-magnolia-loblolly pine association, stream floodplains, acid bog-baygalls, arid sandylands, palmetto-hardwood flats, and the cypress-tupelo association. These very diverse communities are a product of the complex interrelationship of the regional geology (i.e., parent material, topography, soils, and hydrology), climate, fire, and plant succession (Diggs et al. 2006:162-164).

This part of Southeast Texas has been occupied by aboriginal peoples from as early as ca. 13,000 years B.P., during the Paleoindian period, but mainly consists of sites that were used during Archaic (ca. 9,000-2,000 years B.P.), Woodland or Early Ceramic (ca. 2,000-1,000 years B.P.), and Late Prehistoric (ca. 1,000-250 years B.P.) periods (see Ricklis 2004). During historic period times, the region was home to



Figure 1.
The location of the Strawberry Hill site
(41SJ160) in southeastern Texas.

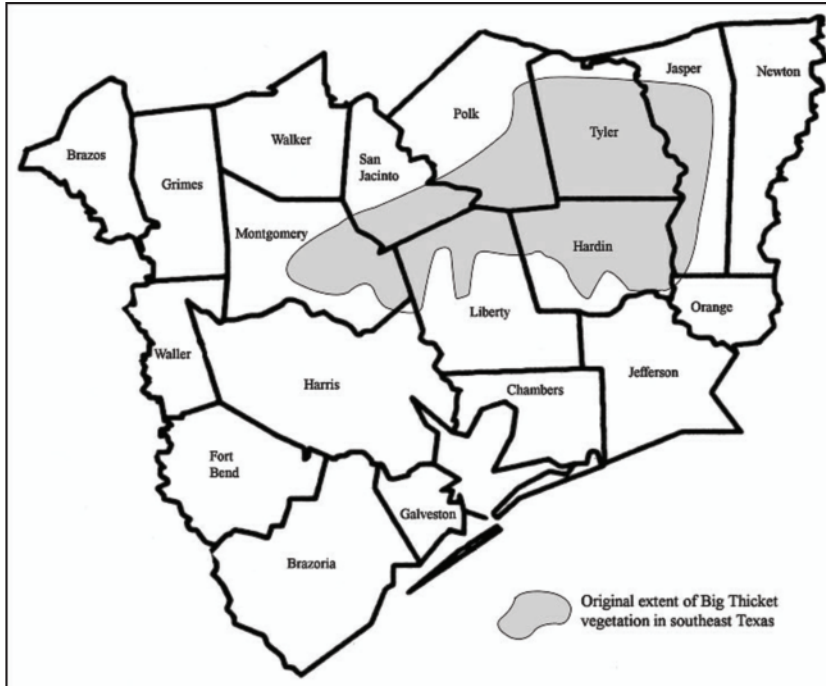


Figure 2. The original extent of the Big Thicket in southeastern Texas (after Diggs et al. 2006:Figure 90).

the Bidai and Atakapa groups in the lower reaches of the Sabine, Neches, and Trinity River basins (see Aten 1983:Figure 3.1).

The archeological record for both the Paleoindian and Archaic periods is marked by the recovery of a variety of chipped and ground stone tools from sites that were apparently occupied on short term and seasonal bases by hunting-gathering groups. By the Late Archaic, if not earlier, “a shift to the use of poorer quality and more local lithic resources... suggests reduced group mobility and more tightly defined group territories” (Ricklis 2004:185). The Paleoindian period lanceolate projectile points include Clovis, Dalton, San Patrice, Pelican, Angostura and Scottsbluff types, and the later Archaic period assemblages includes a variety of expanding and parallel-stemmed forms in Early, Middle, and Late Archaic period occupations (see Ricklis 2004:Figure 6.3; Story 1990:221-223), and Kent, Ensor, Godley, and Gary points throughout the latter part of the Late Archaic and Woodland periods.

The Woodland or Early Ceramic period artifact assemblages in inland Southeast Texas have ceramic vessels, particularly sandy paste wares of the Goose Creek Plain series (Aten 1983), including a few Goose Creek Incised vessels; Lower Mississippi Valley Tchefuncte and Marksville wares occur in low frequencies in inland Southeast Texas Woodland period sites. Sites of this period are part of the Mossy Grove tradition (Story 1990:257) (Figure 3), and the major archeological component at the Strawberry Hill site is of the Mossy Grove tradition, and this is the focus of the ceramic studies to be discussed below.

It has been suggested that the Mossy Grove culture sites represent settlements of ancestral Bidai, Atakapa, and Akokisa groups (Aten 1983). By around A.D. 700, straight-stemmed to expanding-stemmed arrow points began to be made by these groups, and by ca. A.D. 1000, Late Prehistoric ceramic wares were made with grog temper (Ricklis 2004:200). These grog-tempered ceramics, as well as later Perdiz arrow points, have stylistic and cultural affiliations with ancestral Caddo groups in the Neches/Angelina and Sabine River basins as well as with coastal Texas groups (see Aten 1983; Ricklis 2004:200; Story 1990). The grog-tempered ceramics have incised, incised-punctated, and punctated decorative elements, and engraved fine ware sherds (probably from vessels obtained from ancestral Caddo groups) have been reported from a few sites in the region.

Both Woodland and Late Prehistoric sites tend to be situated on upland landforms overlooking stream floodplains as well as on elevated alluvial landforms along the stream floodplains. Moore (1995) has suggested that aboriginal groups in the inland parts of Southeast Texas had residential base camps with either a wide or limited range of on-site activities as well as task-specific extraction sites with low densities of artifacts that were the product of the procurement and/or processing of particular resources.

Investigations at the Strawberry Hill Site

The Strawberry Hill site is located on a low natural sandy rise in the Winters Bayou drainage in the larger Trinity River basin (see Keller and Weir

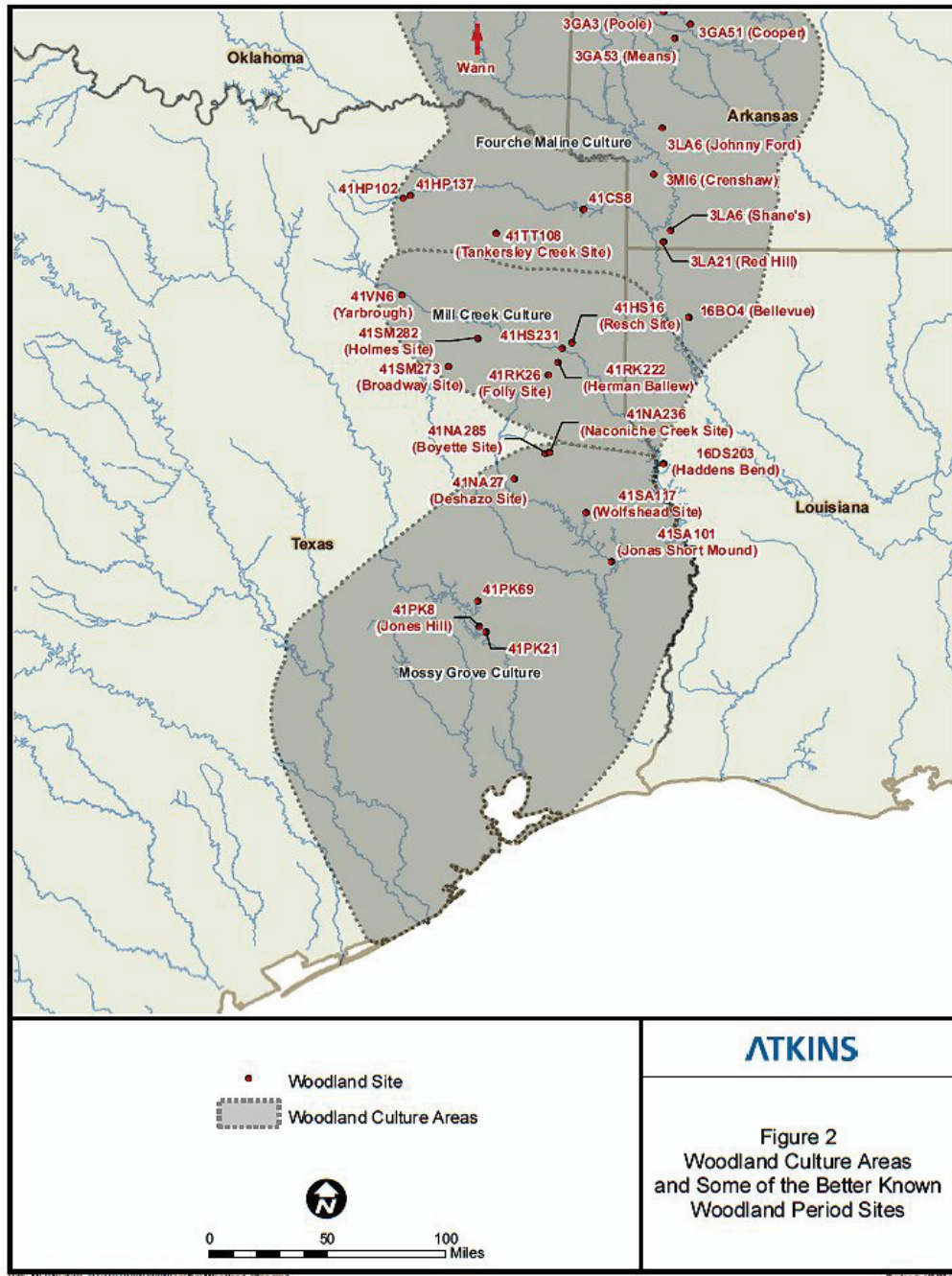


Figure 3. The extent of Woodland period cultures in East Texas, including the Mossy Grove culture (from Ellis 2013:Figure 1, courtesy of the Texas Archeological Society).

1979; Figure 1). During the work, a total of seven 10 x 10 ft. units were excavated in a contiguous block, along with two 5 x 5 ft. units, two 10 x 5 ft. units, and a single 5 x 20 ft. unit (Figure 4).

The archeological deposits consist of a plow zone, a dark brown sand A or E-horizon, underlain by a thin light tan sand. These sand deposits rest on a gray sandy clay B-horizon (Figure 5). The total depth of

the deposits was approximately 35-40 cm below surface.

During the excavations, three features were identified in the northern part of the block at the Strawberry Hill site (Figure 6). Feature 1 was a pit ca. 1.2 m in diameter, while Features 2 and 3 were smaller pits, ca. 50 cm in diameter for Feature 2 and ca. 60 cm in diameter for Feature 3. Feature 1 also had a post hole stain (ca. 36 cm in diameter) along its

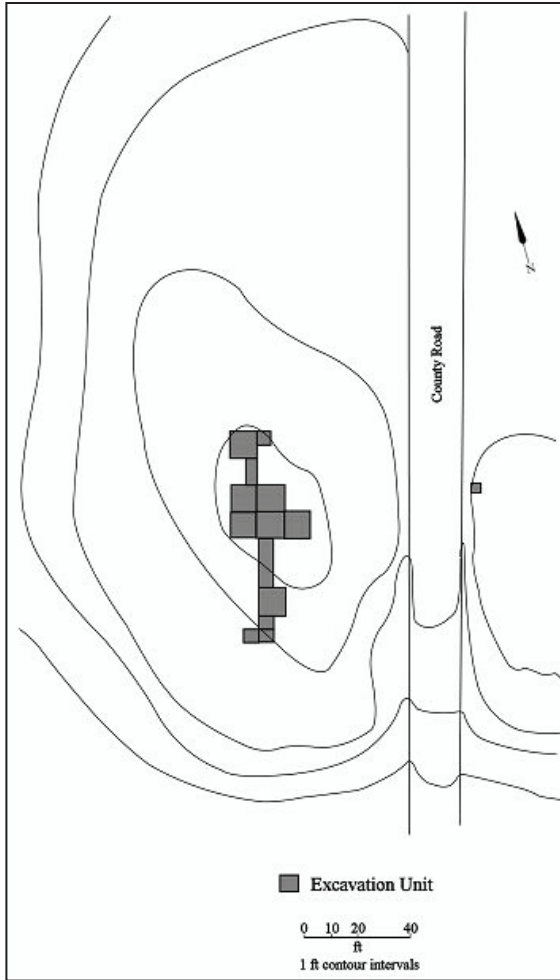


Figure 4. Plan of excavations at the Strawberry Hill site.

southern boundaries, and Keller and Weir (1979:12) suggest the post hole predated the pit itself. These features had dark organic staining and artifacts, including burned clay, ceramic sherds, lithic debris, and chipped stone tools (Keller and Weir 1979:12).

Introduction to the Ceramic Analysis

The ceramic vessel sherd assemblage from the Strawberry Hill site consists of 1,834 sherds larger than 1.5 cm in diameter and 966 sherdlets (i.e., sherds smaller than 1.5 cm in diameter) (Table 1); the sherdlets were simply counted, but received no further analytical attention. The ceramic sherd analysis focused on the identification of sherd type (i.e., rim, body, and base), the paste and temper of the sherds, and decorative elements, if any, on rim or body sherds. A sample of the rim, body, and base sherds (n=265, 14.5 percent) were also characterized by firing conditions (see Teltser 1993:Figure 2; Pertulla 2005:Figure 5-30), surface treatment (i.e.,

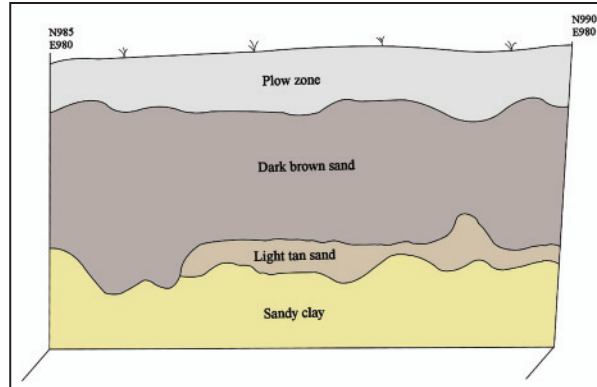


Figure 5. Typical profile of the archeological deposits at the Strawberry Hill site (after Keller and Weir 1979:Figure 7).

smoothed or burnished), and vessel wall thickness in mm. Rim and lip form were identified for each of the rims in the assemblage, and sherds with drilled holes (for suspension of a vessel or in use to fasten a cover over the vessel mouth, see Aten and Bollich [2002:41]) were also noted, along with the diameters in mm of the drilled holes. Pieces of burned clay were also noted in several different proveniences at the site (Table 1); they are discussed in the next section.

Temper and Paste

Fifteen different temper and paste groups have been identified in the Strawberry Hill site ceramic assemblage (Table 2). This variability in temper and paste documented at the site is likely the product of both a ceramic vessel making tradition (i.e., the sandy paste Goose Creek pottery tradition) that was not necessarily standardized in manufacturing and vessel engineering (cf. Johnson 1992:18), as well as the use and discard of vessels on the site that had been obtained from other groups, such as the Caddo to the east and northeast and Gulf Coastal groups to the south.

Sandy paste sherds from Goose Creek Plain, *var. unspecified* vessels (Aten 1983; Story 1990; Moore 1995; Ricklis 2004) comprise 74.0 percent of the assemblage; another 5.4 percent Goose Creek Plain, *var. unspecified* sherds have naturally occurring hematite nodules in the paste, and may come from vessels manufactured along the upper Texas Coast (Linda W. Ellis, June 2017 personal communication). Seventy two percent of the rim sherds and 79 percent of the base sherds are from Goose Creek Plain, *var. unspecified* vessels (Table 2). The Goose Creek Plain, *var. unspecified* sherds from the Strawberry Hill are from compact and smoothed vessels made by coiling, probably jars or deep bowls. The smoothing served to better weld the coils together before firing. The

Table 1. Ceramic vessel sherd assemblage from the Strawberry Hill site.

Provenience	Sherds	Sherdlets	Burned Clay	N
No Lot Number	89	1	1	91
Lot 0	227	59	4	290
Lot 1	2	0	0	2
Lot 2	5	0	0	5
Lot 3	14	0	2	16
Lot 5	35	36	1	72
Lot 7	123	87	4	214
Lot 8	84	47	4	135
Lot 9	53	55	3	111
Lot 10	88	46	0	134
Lot 11	44	24	0	68
Lot 12	6	5	0	11
Lot 13	0	1	0	1
Lot 14	1	0	0	1
Lot 15	49	26	5	80
Lot 16	0	3	0	3
Lot 17	46	55	1	102
Lot 18	50	34	0	84
Lot 19	69	56	0	125
Lot 20	98	56	0	154
Lot 21	98	68	3	167
Lot 22	5	0	1	6
Lot 23	1	0	0	1
Lot 24	8	1	0	9
Lot 25	1	0	0	1
Lot 27	12	7	0	19
Lot 28	16	4	3	23
Lot 29	8	2	0	10
Lot 30	13	1	0	14
Lot 31	82	54	17	153
Lot 32 {N990E1000, 1.0- 1.5 ft. bs]}	89	50	3	142
Lot 33	47	14	3	64
Lot 34	17	9	0	26
Lot 35	28	14	0	42
Lot 36	42	25	4	71
Lot 39	19	4	0	23

Table 1. Ceramic vessel sherd assemblage from the Strawberry Hill site (continued).

Provenience	Sherds	Sherdlets	Burned Clay	N
Lot 42	33	16	0	49
Lot 43	4	0	0	4
Lot 44	9	7	0	16
Lot 46	4	6	1	11
Lot 48	8	1	1	10
Lot 51	2	0	1	3
Lot 52	9	2	1	12
Lot 54	31	15	0	46
Lot 55	48	21	0	69
Lot 56	42	18	0	60
Lot 57	36	17	0	53
Lot 58	11	2	1	14
Lot 59	7	3	0	10
Lot 60	7	11	0	18
Lot 63	4	3	0	7
Lot 65	1	0	0	1
Totals	1834	966	61	2861

Table 2. Sherd temper and paste in the Strawberry Hill site (41SJ160) ceramic assemblage.

Temper and paste group	Rim	Body	Base	N
Sandy paste	48	1291	16	1355
Sandy paste-hematite	4	92	3	99
Grog	10	155	2	167
Grog-sandy paste	6	137	0	143
Grog-bone	0	9	0	9
Grog-bone-sandy paste	0	1	0	1
Grog-bone-hematite	0	1	0	1
Grog-bone-hematite-sandy paste	0	1	0	1
Grog-hematite	1	33	1	35
Grog-hematite-sandy paste	1	6	1	8
Bone	0	3	1	4
Bone-sandy paste	0	3	0	3
Bone-hematite	1	0	0	1
Bone-hematite-sandy paste	0	1	0	1
Hematite	1	1	0	2
Totals	72	1734	24	1830

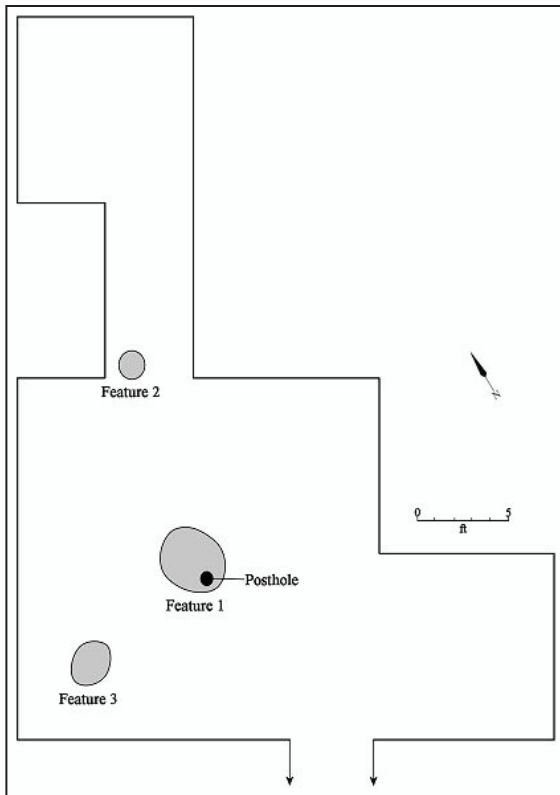


Figure 6. Plan of the excavation block at the Strawberry Hill site and the location of features (after Keller and Weir 1979:Figure 8).

paste is not contorted, thus suggesting that vessels were decently prepared for vessel shaping.

Sherds from tempered vessels (either grog, bone, or hematite) account for only 20.5 percent of the sherds at the Strawberry Hill site. Sherds from grog-tempered vessels account for 16.9 percent of the assemblage (see Table 2); the sherds are about evenly divided between sherds with a clay paste and sherds with a sandy paste. Grog tempering represents a specific attempt on the part of potters in East Texas and on the upper Texas Coast to slow the oxidation process of the ceramic vessels during firing. This would have created darker-colored vessels in a reducing firing 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 most commonly seen in Caddo pottery vessels—especially with the finely crushed grog pieces in the fine wares—this would have contributed further to the ability of fired vessels to withstand heat-related stresses, as well as increasing their flexural strength (Rice 1987:362). Only about 0.5 percent of the sherds at the site have both grog and bone temper inclusions, and another 0.1 percent have grog, bone, and hematite

temper added to the paste (see Table 2). In the Caddo Area in East Texas, the common use of hematite as a temper is particularly notable in ancestral Caddo sites in the Neches River basin. Sherds tempered with grog and crushed fragments of hematite represent 2.5 percent of the Strawberry Hill site sherds. Bone-tempered (0.4 percent) and bone-hematite-tempered (0.1 percent) sherds are quite rare in the assemblage, as are sherds with hematite temper (0.1 percent).

Including sherds with or without temper, about 88 percent of the vessel sherds are from vessels with a sandy paste (see Table 2); the lion's share of these have no temper. Of the sherds that have temper inclusions, including sherds with more than one temper, 97 percent have grog temper; 5.3 have bone temper; and 12.5 percent have hematite temper inclusions (because of the use of multiple tempers, the temper summary percentages total to more than 100.0 percent). Hematite may have been added to the paste of certain vessels strictly as a matter of personal choice by individual potters, but it may have served a useful purpose nonetheless. That is, the occurrence of crushed grains of hematite in the paste would have enhanced a vessel's ability to melt and fuse the paste constituents during firing, thus resulting in a dense, hard body, and a reduced vessel porosity (Rice 1987:96). Similarly, the addition of a coarse temper like hematite pieces would have aided a vessel's ability to withstand thermal shock. Crushed and burned bone may have been added to a vessel's paste for the same reason: namely that the crushing of burned bone produces with little effort an angular particle shape whose coarseness gave vessels tempered with it the ability to withstand thermal shock.

Firing Conditions

The sherds from the Strawberry Hill site are from vessels fired in a variety of ways. This is indicated by the proportions of different firing conditions (Figure 7) identified on sherds from vessels with different tempers and pastes (Table 3). This suggests that firing was not particularly well controlled by the potters at the site, and that the sherds are from vessels whose potters had different firing practices.

Across the detailed sherd assemblage as a whole, about 28 percent of the sherds are from vessels fired in a reducing environment and cooled in the open air. In the sherds from sandy paste vessels, only 24 percent are from vessels fired in that manner, compared to 36.1 percent of the sherds from grog-tempered vessels, 60 percent of the grog-bone-tempered vessel sherds, 25 percent of the grog-hematite-tempered sherds, and 66.7 percent of the sherds from bone-tempered vessels. This form of vessel firing—so typical and distinctive of Caddo pottery in East Texas

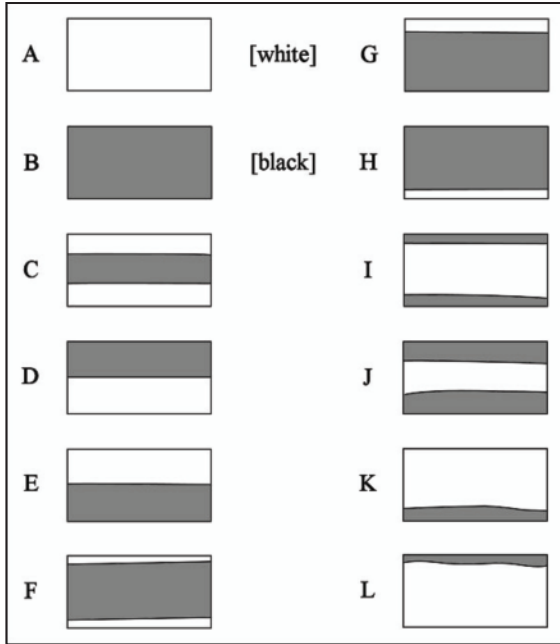


Figure 7. Firing conditions A-L (after Teltser 1993; Pertulla 2005).

(Pertulla 2013)—meant that the vessels were likely covered with wood and other fuels during the open-air firing (i.e., the vessels were not fired in a kiln but in a pit fire), restricting the amount of oxygen that could reach the vessel. However, near the end of the firing, these vessels were pulled from the fire and allowed to cool in the open air. This left either one or both vessel surfaces with a lighter color than the otherwise very dark black or dark gray cores.

Approximately 22 percent of the sherds are from vessels fired and cooled in a reducing or low oxygen environment (see Table 3). More than 36 percent of the grog-tempered sherds are from vessels fired and cooled in a reducing environment compared to 18 percent of the non-tempered sandy paste vessels. None of the other temper-paste groups have sherds fired and cooled in this manner.

A large number of sherds (19.2 percent) from the Strawberry Hill site have a distinctive core, with a dark exterior/light exterior cross-section or lighter cores than their surfaces (I-L on Table 3). Aten and Bollich (2002:54-55) note that this manner of vessel firing is characteristic of Goose Creek Plain, *var. unspecified*, and indeed approximately 25 percent of

Table 3. Firing conditions in a sample of ceramic sherds from the Strawberry Hill site.

Temper-paste group	A*	B	C-E	F-H	I-L	N
sandy paste	14	29	23	34	35	135
sandy paste-hematite	6	0	12	3	5	26
grog	8	15	5	22	2	52
grog-sandy paste	3	15	1	8	4	31
grog-bone	0	0	0	3	0	3
grog-bone-sandy paste	0	0	1	0	0	1
grog-bone-hematite-sandy paste	0	0	0	0	1	1
grog-hematite	6	0	1	0	2	9
grog-hematite-sandy paste	1	0	0	1	2	4
bone	0	0	0	1	0	1
bone-sandy paste	1	0	0	1	0	2
Totals	39	59	43	73	51	265
Percent	14.7	22.3	16.2	27.6	19.2	100

Note: hematite, grog-bone-hematite, bone-hematite, and bone-hematite-sandy paste groups had no sherds analyzed in detail. These represent only 0.3 percent of the sherd assemblage.

A=fired and cooled in an oxidizing environment;

B=fired and cooled in a reducing environment;

C-E=incompletely oxidized during firing;

F-H=fired in a reducing environment and cooled in the open air;

I-L=sooted and/or smudged

the Goose Creek Plain sandy paste sherds from the Strawberry Hill site have firing conditions I-L. Aten and Bollich (2002:54-55) also suggest that vessels with this kind of firing may have been placed in a fire with the “orifice [of the vessel] facing into the fire.” Furthermore, the sherds with cores lighter than the surfaces may have come from vessels where “after extended firing that burned off all organics, the fire may have been smothered to cause reduction and darkening of the exterior surface.” In the tempered wares from the Strawberry Hill site, vessel sherds with these firing conditions comprise only 10.6 percent of the sherds analyzed in detail; only 3.8 percent of the grog-tempered sherds, for example, have firing conditions I-L. By contrast, 30.8 percent of the grog-hematite-tempered sherds are from vessels fired in this manner (see Table 3).

As a measure of how well or controlled the firing of vessels were at the Strawberry Hill site, more than 16 percent of the sherds are from vessels that were incompletely oxidized (i.e., not fired a sufficiently long duration or at a high enough temperature during firing), thus leaving the vessel core with zones of both reduced and oxidized paste (see Table 3). Almost 15 percent of the sherds were from vessels fired and cooled in a high oxygen environment, probably where vessels were placed above the fire or coals, rather than buried or nestled in and under the coals.

Surface Treatment

Approximately half of the vessel sherds analyzed in detail (n=265) from the Strawberry Hill site have some form of surface treatment on one or both vessel surfaces (Table 4). Only 29 percent of the sherds are from vessels that have been smoothed on their interior surface, and 22 percent of the sherds are from vessels that have exterior smoothed surfaces; none of the sherds have a burnished or polished surface.

The highest proportion of sherds with an interior smoothed surface treatment in the Strawberry Hill assemblage is in the grog-bone-tempered sherds: 50 percent; 25 percent of these sherds are smoothed on the exterior vessel surface. Grog-tempered sherds have a considerable proportion of sherds with either interior smoothing (43.4 percent) or exterior smoothing (30.1 percent). In the sandy paste sherds, only 23.6 percent of the sherds have been smoothed on the interior, and 20.5 percent have been smoothed on the exterior surface (see Table 4).

Smoothing creates “a finer and more regular surface...[and] has a matte rather than a lustrous finish” (Rice 1987:138). That a notable portion of the vessels at the Strawberry Hill were either smoothed on one or both vessel surfaces suggests that the purpose was to thin and even out the vessel surface, and strengthen them by melding coil joints. Sherds smoothed only on the exterior surface may be from simple bowls. Utility wares and jars tended to be smoothed on the interior vessel surface, primarily to lower the permeability and increase the heating

Table 4. Surface treatment of ceramic vessel sherds from the Strawberry Hill site.

Paste-temper groups	Interior Smoothed	Exterior Smoothed	N
sandy paste	33	25	135
sandy paste-hematite	5	8	26
grog	21	11	52
grog-sandy paste	15	14	31
grog-bone	2	1	3
grog-bone-sandy paste	0	0	1
grog-bone-hematite-sandy paste	0	0	1
grog-hematite	0	0	9
grog-hematite-sandy paste	1	0	4
bone	0	0	1
bone-sandy paste	0	0	2
Totals	77	59	265

effectiveness of particular vessels (see Rice 1996:148), namely the vessels used for cooking. None of the Strawberry Hill vessel sherds have remnants of charred organic residues, however.

Decorated Sherds

Less than 3 percent of the ceramic vessel sherds in the Strawberry Hill assemblage have decorative elements (Table 5). The decorated sherds are found among the sandy paste sherds (n=6), the grog-tempered vessel sherds (n=42), the grog-tempered-sandy paste sherds (n=2), the grog-bone-tempered sherds (n=1), and the bone-tempered sherds (n=2). The highest proportions of decorated sherds in the temper-paste groups is 50 percent in the bone-tempered group, 25.1 percent in the grog-tempered group, and 11.1 percent in the grog-bone-tempered group. Only 0.4 percent of the sandy paste sherds have a decorative element.

The sandy paste incised sherds (n=4) are from Goose Creek Incised vessels (see Aten and Bollich 2002), including what I have called Wavy Incised (Figure 8c). The lip-notched sandy paste vessels are also part of the Goose Creek ceramic tradition (see Aten 1983; Story 1990), and I refer to them as Goose Creek Plain, *var. Burris*, because of the large number of lip notched rim sherds in the Burris #1 site collection (see below). The other 47 decorated sherds in the Strawberry Hill site ceramic assemblage are likely from non-local sources, including pottery made

by the East Texas Caddo and possibly by native peoples living on the upper Texas Coast that made San Jacinto Incised vessels.

The grog-tempered decorated sherds in the Strawberry Hill are from both utility ware (i.e., wet paste decorations) and fine ware (i.e., engraved and slipped decorative elements) vessels. The majority of the sherds have incised decorative elements (n=34) that are primarily geometric (see Figure 8 d-e), including body sherds with parallel lines, diagonal opposed lines, opposed incised lines, probably from Maydelle Incised jars (see Suhm and Jelks 1962:Plate 52), and rim sherds with horizontal incised lines, although there is one body sherd with a curvilinear incised line (Table 5). One sherd is diagonally lip notched. Three sherds have brushed or brushed-incised decorative elements (see Figure 8a-b), and these are likely from Bullard Brushed vessels made in the Caddo area (see Suhm and Jelks 1962:Plate 11). The use of brushed decorative elements is a post-A.D. 1200 stylistic innovation among Caddo potters in East Texas (see Perttula 2013, 2015). The most likely origin of this kind of Caddo utility ware is in the Neches River basin (see Perttula 2015:23 and Figure 5). Other grog-tempered utility wares at the Strawberry Hill site have incised-punctated elements (again, possibly from a Maydelle Incised jar) (see Figure 8f), lip notching, or a body sherd with a single fingernail punctation (see Table 5).

The grog-tempered fine ware sherds from the site include only two body sherds (see Table 5). One is a

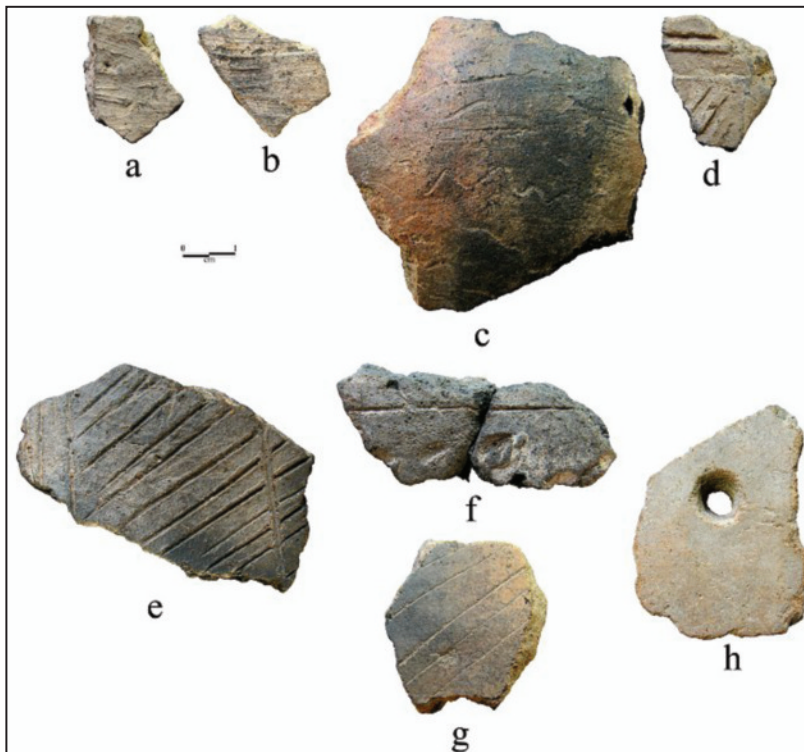


Figure 8. Selected decorated sherds and a sherd with a drilled hole from the Strawberry Hill site:

- a, brushed, Lot 20;
- b, brushed, Lot 8;
- c, Wavy incised, Lot 7;
- d, diagonal opposed incised lines, Lot 24;
- e, diagonal opposed incised panels, Lot 0;
- f, incised-punctated, Lot 0;
- g, fine line parallel engraved, Lot 0;
- h, sherd with drilled hole, Lot 0.

Table 5. Decorated sherds in the Strawberry Hill site ceramic assemblage.

Decorative method and decorative elements	Rim	Body	N
Sandy paste			
<i>Incised</i>			
broad straight incised line	0	1	1
wavy incised line	0	3	3
<i>Lip Notched</i>			
diagonal lip notched	1	0	1
single lip notch	1	0	1
Grog-tempered			
<i>Brushed</i>			
parallel brushed marks	0	2	2
<i>Brushed-Incised</i>			
horizontal brushed-incised marks and lines	1	0	1
<i>Engraved</i>			
diagonal engraved lines	0	1	1
<i>Incised</i>			
cross-hatched incised lines	0	1	1
curvilinear incised line	0	1	1
diagonal opposed incised lines	0	5	5
horizontal incised lines	3	0	3
horizontal and diagonal incised lines	0	1	1
opposed incised lines	0	4	4
parallel incised lines	0	14	14
straight incised line	0	5	5
<i>Incised-Punctated</i>			
opposed incised-lines-adjacent tool punctated rows	0	1	1
<i>Lip Notched</i>			
diagonal lip notched	1	0	1
<i>Red-Slipped</i>			
int./ext. red-slipped	0	1	1
<i>Punctated</i>			
single fingernail punctate	0	1	1

Table 5. Decorated sherds in the Strawberry Hill site ceramic assemblage (continued).

Decorative method and decorative elements	Rim	Body	N
Grog-tempered-sandy paste			
<i>Engraved</i>			
horizontal-vertical-diagonal engraved lines	0	1	1
<i>Incised</i>			
parallel incised lines	0	1	1
Grog-bone-tempered			
<i>Incised</i>			
parallel incised lines	0	1	1
Bone-tempered			
<i>Punctated</i>			
linear tool punctated rows	0	1	1
tool punctated row	0	1	1
Totals	7	46	53

sherd with diagonal parallel engraved lines (see Figure 8g), while the other has a hematite-rich red slip on interior and exterior vessel surfaces, suggesting it is from a bowl or carinated bowl. The manufacture of red-slipped vessels by East Texas Caddo potters was most common in the middle Red River, the Big Cypress Creek basin, the upper Sulphur and Sabine River basins, and the middle Sabine River basin (Perttula 2015:22 and Figure 3). Sites in these areas with red-slipped ceramics date after ca. A.D. 1200, in both the Middle and Late Caddo periods (Perttula 2015:23).

Only two grog-tempered-sandy paste body sherds in the Strawberry Hill site ceramic assemblage are from decorated vessels (see Table 5). One is an engraved sherd likely from a Holly Fine Engraved vessel with horizontal, vertical, and diagonal engraved lines (see Suhm and Jelks 1962:Plate 39d), and the other has parallel incised lines. The two bone-tempered decorated sherds at the site both have a row or more of tool punctations.

Rim and Lip Form

Where rim profile and lip form could be determined, almost all of the rim sherds – regardless of temper and paste – from the Strawberry Hill site are from vessels that have direct or vertical profiles and

rounded lips (Table 6). Only one rim (1.4 percent) has a flat lip and this is one of the Goose Creek Plain lip-notched vessels. Similarly, only one rim (1.4 percent) – from a bone-hematite-tempered vessel – has an everted rim.

Only a few of the rim sherds were large enough to measure the vessel's orifice diameter. These include only the sandy paste rim sherds: one rim greater than 18.0 cm in diameter; another two with 19.0-20.0 cm orifice diameters and a third with a 22.0 cm orifice diameter (and with a drilled hole on the rim); one rim greater than 13.0 cm in diameter and another greater than 16.0 cm in diameter; and four others with diameters between 10-14.0 cm. These orifice diameters indicate that sandy paste Goose Creek Plain vessels were only moderate in size, and likely were all jar forms.

Vessel Wall Thickness

In general, the sandy paste vessel sherds from the Strawberry Hill site are, on average, thicker at the base and on the vessel body walls than the grog-tempered ceramics found at the site (Table 7); the thickest body sherds occur in the grog-bone and bone-tempered vessel sherds. These differences are probably related to the larger height and volume of vessels made by Goose Creek/Mossy Grove potters;

Table 6. Rim profile and lip form for rim sherds from the Strawberry Hill site.

Paste-temper group	Direct-Ro	-Ro	-FL	Everted-Ro	N
sandy paste	30	17	1	0	48
sandy paste-hematite	2	2	0	0	4
grog	4	6	0	0	10
grog-sandy paste	5	1	0	0	6
grog-hematite	0	1	0	0	1
grog-hematite-sandy paste	1	0	0	0	1
bone-hematite	0	0	0	1	1
hematite	1	0	0	0	1
Totals	43	27	1	1	72

Ro=rounded lip; FL-flat lip

especially any vessels used for cooking and the serving of cooked foods, when compared to the grog and grog-hematite-tempered vessels. Thicker bases among the sandy paste vessels (and the one bone-tempered base), almost all round and conical, would also have been advantageous when manufacturing and using sturdy and durable vessels for cooking, storage, and food serving needs. These differences can be attributed to distinct technological and functional decisions made by potters on how to construct ceramic vessels that were to be used in domestic tasks.

In the case of the sandy paste-hematite and grog-sandy paste rims, the rims may have been made to be thicker than the vessel body walls to stand up to the cooking, stirring, and ladling of cooked food stuffs from these vessels and the rougher expected treatment of rims in general. The thinner grog-tempered and grog-tempered-sandy paste rim sherds may have come from relatively small vessels, including bowls, with thinner but not necessarily more uniform vessel walls (see Table 7).

Sherds with Drilled Holes

Ten rim or body sherds have drilled holes (Table 8; see Figure 8h). All of the sherds are from Goose Creek Plain, *var. unspecified* vessels. The drilled holes were apparently placed on the rim, about 30 mm below the vessel lip, probably “used to fasten a cover over the vessel mouth” (Aten and Bollich 2002:41), or to suspend a vessel. The drilled holes vary from 4.2-11.0 mm in diameter, suggesting they were used on vessels of different sizes. Aten and Bollich (2002:41) suggest that the locally manufactured ceramic vessels in Southeast Texas “were not strong enough to bear the tensional forces on such a hole from the weight of a suspended vessel and its contents.”

Table 7. Vessel wall thickness (in mm) for sherds from different paste-temper groups at the Strawberry Hill site.

Paste-temper group	Rim	Body	Base
sandy paste	6.7 ± 0.8	6.7 ± 0.8	9.2 ± 0.7
sandy paste-hematite	7.0 ± 0.2	6.4 ± 0.7	8.9 ± 0.5
grog	6.0 ± 0.5	6.2 ± 0.9	7.6
grog-sandy paste	6.4 ± 1.3	5.9 ± 0.9	0
grog-bone	0	7.3 ± 0.7	0
grog-bone-hematite-sandy paste	0	6.5	0
grog-hematite	0	6.4 ± 0.6	0
grog-hematite-sandy paste	0	6.3 ± 0.4	0
bone	0	9.2	9.5
bone-sandy paste	0	6.6 ± 0.1	0

Table 8. Sherds with drilled holes in the Strawberry Hill site ceramic assemblage.

Provenience	Sherd Type	Diameter of Drilled Hole (mm)
No Lot Number	plain sandy paste rim	11.0
No Lot Number	plain sandy paste body	5.0
Lot 0	plain sandy paste body	11.0
Lot 0	plain sandy paste body	6.7
Lot 0	plain sandy paste body	6.9
Lot 0	plain sandy paste body	7.5
Lot 8	plain sandy paste body	5.9
Lot 10	plain sandy paste body	4.2
Lot 29	plain sandy paste rim	8.0
Lot 42	plain sandy paste body	6.5

Bill Moore Sherds from the Strawberry Hill Site (41SJ160)

The Texas Archeological Research Laboratory at The University of Texas at Austin has a small sample of ceramic vessel sherds collected by Bill Moore in 1975 from an unknown part of the Strawberry Hill site. The collection includes three body sherds from Goose Creek Plain, *var. unspecified* vessels. Moore and Dockall (1988) mention lithic artifacts collected by Moore from the site.

41SJ160A Ceramic Vessel Sherds

Site 41SJ160A is southeast of the Strawberry Hill site and is located at the end of the highway project. Four plain body sherds of Goose Creek Plain, *var. unspecified* were collected from the surface of area A of the site. The two sherds analyzed in detail are from vessels fired in a reducing environment and cooled in the open air (see Figure 7g; see also Teltser 1993:Figure 2g). Neither sherd has any evidence of surface treatment, and the thickness of the body sherds ranges from 5.1-6.7 mm.

Burned Clay

Sixty-one pieces of burned clay were recovered in the Strawberry Hill assemblage (see Table 1). These are amorphous-shaped pieces of clay exposed to fire; none of the pieces have any stick or grass impressions as would be found on pieces of daub. The burned clay at the site is evidence for some use of hearths and earth ovens for cooking and heating activities at the site; localized heating would have fired sediments, producing pieces of burned clay. The limited amounts of burned clay found at the Strawberry Hill site suggest that the recovered pieces

represent incidental exposures of pit and oven walls, and dirt floors, to heating or fires.

Mossy Grove Ceramic Assemblages from Other Sites in Montgomery, Polk, San Jacinto, and Walker Counties in Southeast Texas

In this section I discuss other Mossy Grove ceramic assemblages in Montgomery, Polk, San Jacinto, and Walker counties in Southeast Texas (Figure 9). The purpose is to provide broad comparisons between the Strawberry Hill site ceramic assemblage and the ceramic assemblages from other contemporaneous sites in the same region, particularly in the use of sandy clays for vessel manufacture, the later use of grog and bone tempers in vessel manufacture, and the range of decorative methods and elements represented in the sherds from the various sites. For the most part, the comparisons are based on the analysis of ceramic sherd collections from a number of these sites that are held at the Texas Archeological Research Laboratory at The University of Texas at Austin (TARL), but in other cases, the comparisons I make are based only on published descriptions of particular site ceramic assemblages. Not including the ceramic sherds from the Strawberry Hill site itself, as part of this study more than 9680 ceramic vessel sherds were examined from 14 different archaeological sites.

For the purposes of later comparisons of ceramic vessel sherd assemblages dominated by sandy paste wares, Black (1991:Figure 1) provides a reconstruction of a common Goose Creek Plain vessel form (in this case from a site from Galveston Bay in Harris County, Texas): a jar with an everted rim and a rounded basal node that is 5.1 cm in diameter (Figure 10). This particular jar is 27.4 cm in height, with a 29.0 cm orifice diameter. The rim, with a flat lip, is

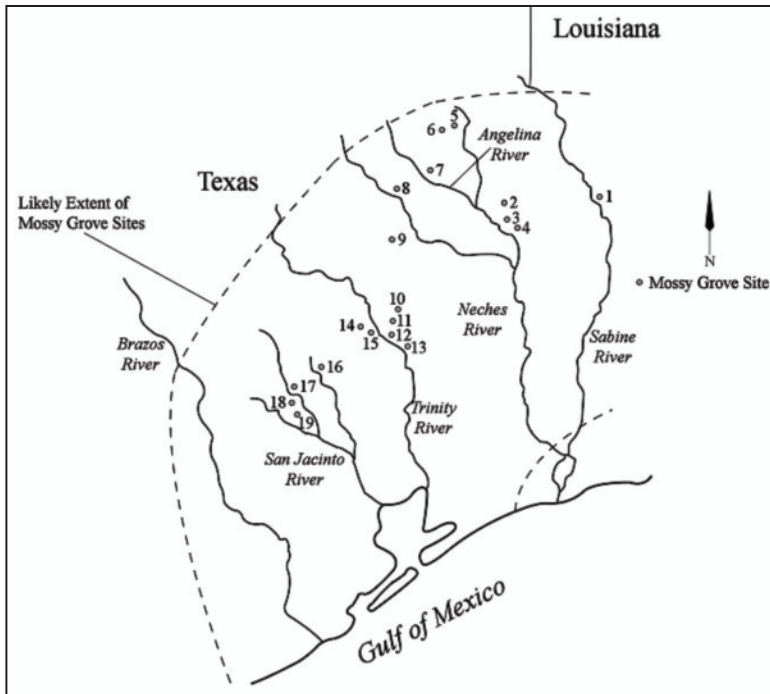


Figure 9. Selected Mossy Grove culture sites in Southeast and East Texas: 1, Coral Snake (16SA37); 2, Wolfshead (41SA117); 3, Runnells 1 (41SA87) and Runnells 2 (41SA86); 4, Jonas Short (41SA101); 5, Naconiche Creek (41NA236); 6, Boyette (41NA285); 7, Deshazo (41NA27); 8, George C. Davis (41CE19); 9, Westerman (41HO15); 10, Crawford (41PK69); 11, Burris 1 (41PK88) and Burris 2 (41PK89); 12, Jones Hill (41PK8); 13, 41PK21; 14, Houston (41SJ19); 15, Trichel (41SJ16); 16, Strawberry Hill (41SJ160); 17, 41MQ6; 18, 41MQ5; and 19, 41MQ4. Figure based on Story (1990:Figure 39).

3.2 mm thick, and the vessel body averages 5.6 mm in thickness.

West Fork of the San Jacinto River. Each have Mossy Grove components.

Montgomery County Sites

The first three sites from Montgomery County discussed in this section are from 1967 excavations conducted by Shafer (1968) at Lake Conroe on the

41MQ4

This site has a midden deposit with features, ceramic vessel sherds ($n=168$), and numerous Gary and Kent dart points (Shafer 1968:5-9 and Table 1). The ceramic sherds are from Goose Creek Plain, *var. unspecified* vessels, and they were concentrated from 0-1.0 ft. below surface in the midden deposits. The 41MQ4 collection at TARL has 99 Goose Creek Plain, *var. unspecified* body ($n=94$) and base ($n=5$) sherds, including two body sherds with drilled holes; the holes range from 5.4-7.1 mm in diameter.

41MQ5

41MQ5 is on an alluvial terrace landform near the West Fork of the San Jacinto River. Shafer's (1968:Table 2) excavations recovered ceramic vessel sherds ($n=273$) primarily between 0-2.0 ft. below surface, as well as numerous arrow points ($n=39$, including Perdiz and Catahoula) and dart points ($n=200$, primarily Gary and Kent types).

There are 262 ceramic vessel sherds in the TARL collections (Table 9). About 90 percent of the sherds are from sandy paste vessels, most of them Goose Creek Plain, *var. unspecified*. Three of the Goose Creek Plain, *var. unspecified* sherds have drilled holes with diameters that range from 5.5-12.7 mm, indicating their use on vessels of different sizes. The deco-

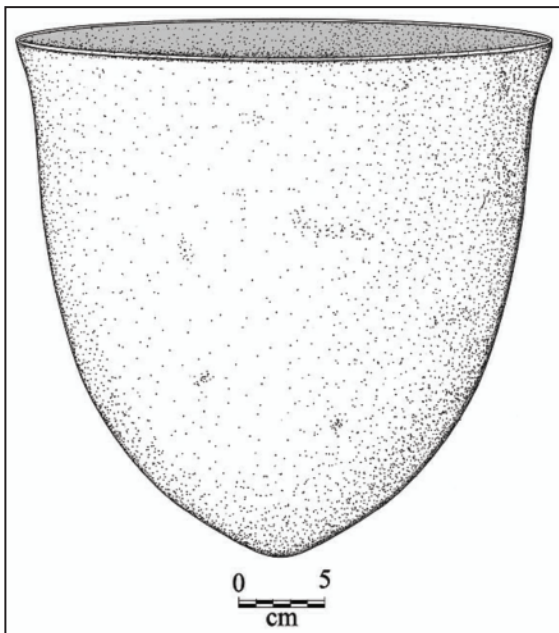


Figure 10. A Goose Creek Plain jar (after Black 1991:Figure 1).

Table 9. Ceramic vessel sherds from 41MQ5 in the TARL collections.

Ware	No. of plain sherds	No. of decorated sherds	N
Sandy paste	222	15	237
Grog-tempered	13	5	18
Grog-sandy paste	3	2	5
Bone-tempered	1	0	1
Bone-sandy paste	1	0	1
Totals	240	22	262

rated sandy paste sherds are from Goose Creek Red Filmed vessels (n=11 rim and body sherds), a tool punctated (n=1) body sherd with randomly placed punctations (Figure 11a), another body sherd with rows of tool punctations next to a straight incised line (Figure 11b), and two Goose Creek Incised body sherds with a curvilinear incised line or closely-spaced parallel incised lines.

Lawrence Aten had microscopically examined the red-filmed sherds from 41MQ5 in 1967. In a May 12, 1967 letter to Harry J. Shafer, on file at TARL, he noted that these are “identical to nearly all the red-filmed sherds from the Galveston Bay area that I have seen... The texture of the sandy paste is identical with that from the lower Trinity River area. The character of the red film is also identical.”

The remainder of the ceramic vessel sherds from 41MQ5 are from tempered vessels, including grog and bone temper (see Table 9). Twenty-eight percent of the sherds from tempered vessels (n=25) have decorative elements. Each of the decorated sherds are from grog-tempered and grog-tempered-sandy paste vessels, and they have parallel brushed (n=5) and parallel brushed-incised (n=2) decorative elements. These sherds are from Middle to Late Caddo period Bullard Brushed vessels.

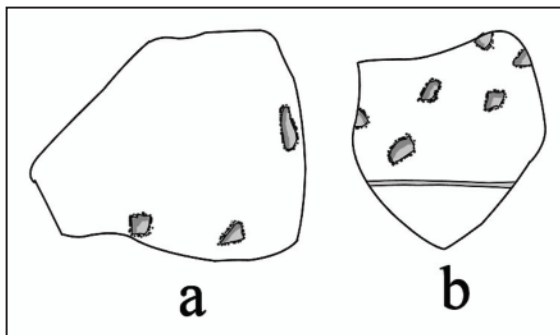


Figure 11. Selected sandy paste decorated sherds from 41MQ5.

41MQ6

Three different areas (Areas A-C) have archeological deposits at 41MQ6 (Shafer 1968:Figure 16), and there are ceramic vessel sherds from each area (Table 10); about 50 percent of the sherds are from Area B. Area A has a midden deposit and a large pit feature, while there is a burned clay feature in Area B, and a rock hearth in Area C.

More than 92 percent of the sherds from 41MQ6 are from Goose Creek Plain, *var. unspecified* vessels (see Table 10). About 0.4 percent (n=5) of these sandy paste sherds have drilled holes: one in Area A, two sherds in Area B, and two sherds in Area C. The drilled holes range from 3.7-9.2 mm in diameter.

Less than 1 percent of the sandy paste sherds have decorative elements – and these sherds occur only in Areas A and B. In Area A, two of the sandy paste sherds are lip notched, another sherd is from a Goose Creek Incised vessel with closely-spaced incised lines, and the last sherd is from a Goose Creek Incised vessel that has two horizontal incised lines below the lip; the lip is also notched. In Area B, four of the sandy paste sherds have rows of either fingernail or tool punctations (Goose Creek Punctated), while another sherd has a single straight incised line. The last sandy paste decorated sherd in Area B is a Rockport ware body sherd with an exterior asphaltum coating (see Ricklis 2013:91). According to Ricklis (2013:85), Rockport pottery “is related to the sandy paste Goose Creek ceramics of the upper Texas Coast, a region that was almost certainly the direct source for the spread of ceramic technology to the Central Coast area by ca. A.D. 1250, and possibly earlier.”

About 3.6 percent of the ceramic sherds from 41MQ6 are from grog-tempered vessels; these sherds are restricted to Areas B and C. The only decorated grog-tempered sherds are from utility ware vessels in Area B that include a rim sherd with 6+ horizontal incised lines (n=1), body sherds with fingernail punctated rows (n=2), two sherds with incised-punctated elements, and a fine ware rim sherd from a compound bowl with 1+ horizontal engraved lines at the bottom of the lower vessel panel. The grog-

Table 10. Ceramic vessel sherds at TARL from 41MQ6.

Ware	Gen.	A	B	C	N
Plain SP	0	309	569	237	1115
Dec. SP	0	4	6	0	10
Plain G	4	0	22	12	38
Dec. G	0	0	6	0	6
Plain G/SP	0	0	1	0	1
Dec. G/SP	0	0	0	1	1
Plain G-B	0	1	3	1	5
Dec. G-B	0	0	0	0	0
Plain B	1	0	7	0	8
Dec. B	0	0	0	2	2
Plain B/SP	4	15	6	0	25
Dec. B/SP	0	0	1	0	1
Totals	9	329	621	253	1212

SP=sandy paste; G=grog-tempered; B=bone-tempered

tempered horizontal incised rim and incised-punctated rim sherd (Figure 12a) are from Early Caddo period Kiam Incised vessels (see Suhm and Jelks 1962:Plate 45).

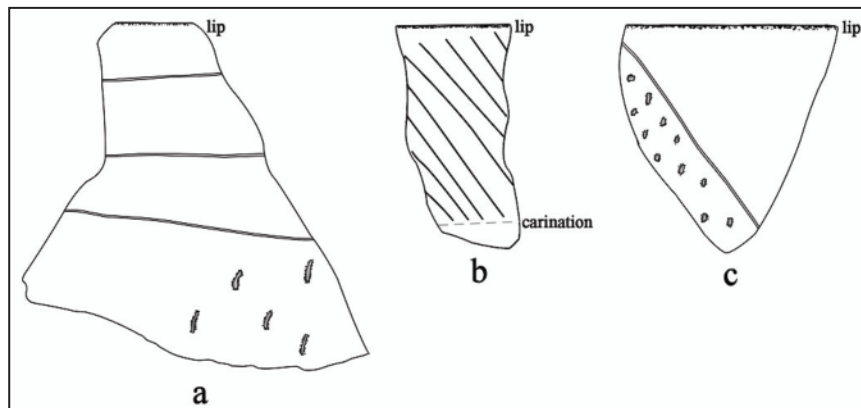
There are only two grog-sandy paste sherds in the 41MQ6 ceramic assemblage (see Table 10), a plain body sherd in Area B, and an engraved rim sherd from a carinated bowl in Area C (see Figure 12b). This rim has a series of diagonal engraved lines on the rim panel of the vessel.

None of the five grog-bone-tempered sherds (0.4 percent of the assemblage) from 41MQ6 have decorations. These sherds are present in each of the three

areas at the site (see Table 10). The bone-tempered sherds represent about 0.8 percent of the sherd assemblage at 41MQ6. Two of the bone-tempered sherds in Area C are decorated: one body sherd has a linear row of tool punctations, while a second body sherd has horizontal brushed-incised marks and lines on the rim and diagonal brushing marks on the vessel body; this sherd is from a Bullard Brushed vessel.

More than 2.1 percent of the vessel sherds from 41MQ6 are from vessels with bone temper and a sandy paste (see Table 10). These sherds are from only Areas A and B, and are relatively common in Area A (4.6 percent of the sherds from this area). The

Figure 12. Selected decorative elements on grog-tempered ceramic sherds from 41MQ6: a, Area B, incised-punctated, grog-tempered; b, Area C, engraved, grog-tempered-sandy paste; c, General, incised-punctated, grog-tempered-sandy paste.



one bone-tempered sandy paste decorated vessel sherd is from Area B: it has a linear row of tool punctations.

41MQ14

This site at the Conroe Reservoir has three areas with Goose Creek Plain, *var. unspecified* sherds: Area A (n=3), Area B (n=5), and Area C (n=41) (Aten 1983:Table 14.3). Aten (1983:Figure 14.5) dates Areas A and B to pre-A.D. 1000 contexts in the Conroe-Livingston area, but places Area C in the post-A.D. 1350 interval because of nine sherds of grog-tempered Baytown Plain.

41MQ197

A total of 91 ceramic vessel sherds from 41MQ197 (Perttula 2014) include 90 body sherds and one base sherd. These are sherds almost exclusively from sandy paste (n=87, 95.6 percent) Goose Creek Plain, *var. unspecified* vessels, as well as bone-sandy paste (n=1), grog-sandy paste (n=1) (cf. Baytown Plain, *var. San Jacinto*), and grog-tempered (n=2) wares (cf. Baytown Plain, *var. Phoenix Lake* paste). Two of the sherds and sherdlets are decorated: one of the grog-tempered body sherds has a single overhanging incised line, while a fine sandy paste Goose Creek Incised sherdlet has diagonal opposed incised lines along what must be the lower rim of a jar.

The Goose Creek Plain, *var. unspecified* sherds (n=87) have both a compact fine sandy paste (63.2 percent) and a coarse sandy paste (36.8 percent), which is consistent with this ware, as Aten and Bollich (2002:49) have noted that they have a “fairly wide range of grain size combinations.” They are from vessels (bowls and jars) with thin walls: the mean thickness of the body sherds is 5.50 ± 0.87 mm; the range in thickness is 3.1-7.9 mm. The one base sherd is 9.0 mm thick, and rounded, suggesting it came from a relatively durable jar. About 11.5 percent of the sherds have smoothing on their interior surfaces, compared with 29.9 percent that have smoothing on the exterior vessel surface. The smoothing served to better weld the clay coils together before firing. The paste of the sherds is not contorted, suggesting it was decently prepared for vessel shaping.

The one plain bone-tempered sandy paste sherd has a small amount of finely ground-up burned bone added to a fine sandy paste. It is from a moderately thick-walled (6.6 mm) vessel that was fired in a reducing or low oxygen environment, then cooled in the open air, leaving a thin oxidized lens on either side of the vessel core (see Figure 7f).

Both grog-tempered sherds, including the one body sherd with a straight and overhanging incised

line, are from 90-100 cm bs in one excavation unit. They are probably from the same vessel, a thin-walled (3.9-4.8 mm) bowl that was fired and cooled in an oxidizing or high oxygen environment (see Figure 7a).

The one Baytown Plain, *var. San Jacinto* sherd is grog-tempered, and has a naturally fine sandy paste. The sherd is from a thin-walled vessel (4.9 mm) that was fired and cooled in an oxidizing environment.

The dominance of plain sandy paste Goose Creek Plain, *var. unspecified* sherds from the site indicate that it was occupied by Mossy Grove culture groups that lived in Southeast Texas. The fine and coarse sandy paste pottery (and one bone-sandy paste, two grog-tempered, and one grog-tempered-sandy paste sherds) include bowls and cooking jars that have relatively thin body walls, and are occasionally smoothed on both interior and exterior vessel surfaces before firing. Firing of the vessels by the aboriginal potters was accomplished under heterogeneous conditions, where a number of vessels may have been placed to face into a fire, and regularly smothered or smudged to cause a reduction and darkening of interior or exterior vessel surfaces. Almost half of the sherds are from vessels that were fired in an oxidizing environment or incompletely oxidized during firing, and more than 35 percent of the sherds are from vessels fired in a reducing environment.

Aten's (1983:Figure 14.5) seriation of ceramic assemblages from the Conroe-Livingston area (including sites in Montgomery County) suggests that the prehistoric component at 41MQ197 dates after ca. A.D. 1000. Prior to that time, ceramic assemblages in this area were characterized only by Goose Creek Plain, *var. unspecified* sherds, but after ca. A.D. 1000, small amounts of Goose Creek Incised and Goose Creek Red-Filmed wares were present (but not at 41MQ197), along with bone-tempered sherds (as at 41MQ197) and grog-tempered Baytown Plain sherds. The bone-tempered and grog-tempered sherds at 41MQ197 comprise only 4.4 percent of the sherd assemblage. Bi-modal peaks in the frequency of bone-tempered and grog-tempered sherds in Aten's (1983:Figure 14.5) seriation do not permit a more refined chronological estimation in the post-A.D. 1000 period, although it is possible that the occupation at 41MQ197 could date as early as ca. A.D. 1000 (because of the presence of a Goose Creek Incised sherd) to as late as after ca. A.D. 1400 (based on peaks in the frequency of bone-tempered and grog-tempered sherds in Aten's seriation).

Polk County Sites

Jones Hill Site (41PK8)

The Jones Hill site at Lake Livingston is situated on an upland ridge on the east side of the Trinity River valley (McClurkan 1967, 1968:3). The excavations disclosed two stratified midden zones (the lower Zone 2 and the upper Zone 4) with abundant archeological materials. Although the radiocarbon dates have wide standard deviations, they are in stratified order: uncorrected and uncalibrated radiocarbon dates from Zone 2 are A.D. 540 ± 190 and A.D. 980 ± 120 , while the Zone 4 dates range from A.D. 1140 ± 80 and A.D. 1560 ± 100 (McClurkan 1968:11). The excavations identified 13 cultural features, including eight hearths, three adult human burials, and two cremations. The hearths are in Zone 2 ($n=3$) and Zone 4 ($n=5$). The burials and cremations are in Zone 2.

Two partially reconstructed ceramic vessels are in the assemblage from the Jones Hill site, one from Zone 2 (Vessel 1); the zone association of Vessel 2 is not provided in McClurkan (1968:39):

SITE NAME OR SITE NUMBER: Jones Hill (41PK8)
 VESSEL NO.: #1 (see McClurkan 1968:39 and Figure 20); may be associated with Burial 1
 VESSEL FORM: Jar (Figure 13a)
 NON-PLASTICS AND PASTE: Sandy paste
 RIM AND LIP FORM: Direct rim and rounded lip
 CORE COLOR: G (fired in a reducing environment and cooled in the open air)
 INTERIOR SURFACE COLOR: Dark grayish-brown
 EXTERIOR SURFACE COLOR: Brown; fire clouds on the rim and body

WALL THICKNESS (IN MM): Rim, 6.6 mm
 INTERIOR SURFACE TREATMENT: None
 EXTERIOR SURFACE TREATMENT: None
 HEIGHT (IN CM): 10.2
 ORIFICE DIAMETER (IN CM): 13.6
 DIAMETER AT BOTTOM OF RIM OR NECK (IN CM): N/A
 BASE DIAMETER (IN CM) AND SHAPE OF BASE: 3.4 cm, circular and conical
 ESTIMATED VOLUME (IN LITERS): 0.8
 DECORATION (INCLUDING MOTIF AND ELEMENTS WHEN APPARENT): Plain
 PIGMENT USE AND LOCATION ON VESSEL: None
 TYPE AND VARIETY (IF KNOWN): Goose Creek Plain, *var. unspecified*

SITE NAME OR SITE NUMBER: Jones Hill (41PK8)
 VESSEL NO.: #2 (see McClurkan 1968:39 and Figure 21)
 VESSEL FORM: Jar with two drilled holes (6.8 mm in diameter) on one side of the rim (see Figure 13b)
 NON-PLASTICS AND PASTE: Bone
 RIM AND LIP FORM: Direct rim and rounded lip
 CORE COLOR: F (fired in a reducing environment and cooled in the open air)
 INTERIOR SURFACE COLOR: Dark yellowish-brown; fire clouds on the rim and body
 EXTERIOR SURFACE COLOR: Dark yellowish-brown; fire clouds on the rim and body; organic residue on the rim and body
 WALL THICKNESS (IN MM): Rim, 9.0 mm
 INTERIOR SURFACE TREATMENT: None

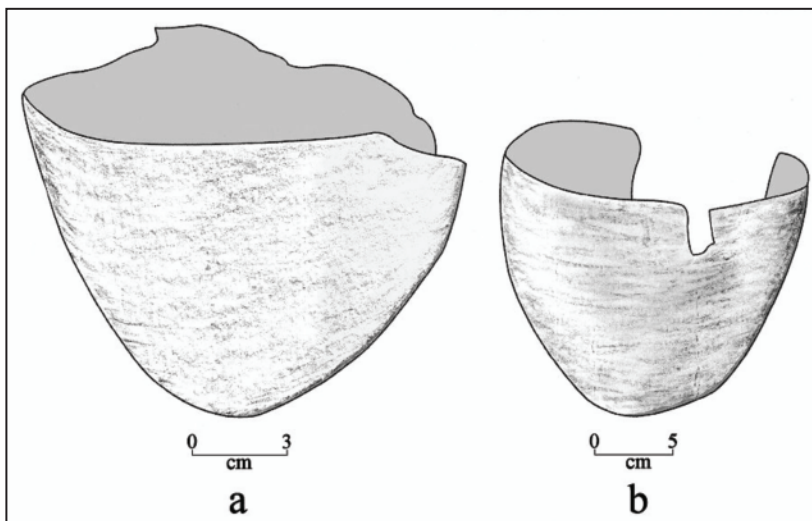


Figure 13.
 Goose Creek Plain, *var. unspecified*
 jar vessel section and
 bone-tempered jar section from the
 Jones Hill site:
 a, Vessel 1;
 b, Vessel 2.

EXTERIOR SURFACE TREATMENT:
Smoothed
HEIGHT (IN CM): 15.2+
ORIFICE DIAMETER (IN CM): 17.8
DIAMETER AT BOTTOM OF RIM OR NECK
(IN CM): N/A
BASE DIAMETER (IN CM) AND SHAPE OF
BASE: N/A (missing)
ESTIMATED VOLUME (IN LITERS): 1.6
DECORATION (INCLUDING MOTIF AND
ELEMENTS WHEN APPARENT): There
are two hard to discern vertical rows of
fingernail punctations and one short horizontal
row of fingernail punctations. McClurkan
(1968:39) describes the vessel as having
“horizontal and vertical rows of faint, ill-
defined discontinuous fingernail impressions.”
PIGMENT USE AND LOCATION ON VES-
SEL: None
TYPE AND VARIETY (IF KNOWN): Uniden-
tified utility ware

McClurkan (1968:Tables 2 and 3) reported that 2,498 ceramic vessel sherds were recovered in the excavations at the Jones Hill site. Most of these sherds are from Areas A and B (n=2,197); the TARL collections from the site comprise 2,226 sherds. Vertical provenience data indicates that plain sandy paste sherds from Goose Creek Plain, *var. unspecified* vessels are present throughout the archeological deposits to a depth of 7.0 ft. bs, but the tempered wares (grog, grog-bone, and bone) are concentrated between 0.5-3.5 ft. below surface (McClurkan 1968:Table 2). Furthermore, most of the decorated sherds in Areas A and B (n=42) are from 0.5-3.5 ft. below surface (McClurkan 1968:Table 3), and are likely from tempered vessels (note that McClurkan provided no tempering data in this table), and only 10 decorated sherds are in the lowermost (3.5-5.5 ft. below surface) deposits.

In the TARL collections from the Jones Hill site, 94 percent of the sherds are from sandy paste vessels

(Table 11). Only 0.6 percent of the sandy paste sherds are from decorated vessels; three sandy paste sherds have drilled holes (3.1-9.6 mm in diameter) that may have been used to help fasten down a cover over the mouth of specific vessels. Sherds from grog-tempered vessels account for 4 percent of the ceramic assemblage, and 7.7 percent of these sherds are from decorated vessels. Grog-tempered sandy paste sherds account for 0.4 percent of the assemblage, while the grog-bone-tempered, bone-tempered, and bone-tempered-sandy paste sherds represent only 0.5, 0.7, and 0.3 percent, respectively, of the Jones Hill site ceramic sherd assemblage.

The decorated sherds in the sandy paste wares at the Jones Hill site are from Goose Creek Incised and Goose Creek Red-Filmed vessels (Table 12). The other decorated sherds (n=9) are from tempered utility wares. These include brushed body sherds from grog or bone-tempered post-A.D. 1200 Bullard Brushed vessels, incised or punctated grog-tempered vessels, and a grog-tempered-sandy paste vessel with a straight applied ridge on the vessel body.

41PK21

This site is on the east side of the Trinity River, just upstream from the dam at Lake Livingston (McClurkan 1968:Figure 1). TARL has a surface collection from 41PK21 obtained and donated by Nunley in 1962. It includes 29 ceramic vessel sherds from several different ceramic wares. This includes 16 Goose Creek Plain, *var. unspecified* rim and body sherds, and one Goose Creek Incised vessel with a single horizontal incised line on the interior vessel surface. Three sandy paste bone-tempered body sherds have parallel incised lines, and there are also a plain grog-tempered (n=1) body sherd, a grog-tempered body sherd with parallel incised lines, and a grog-bone-tempered body sherd with opposed incised lines.

The principal decorated sherds in this collection from 41PK21 are six sherds from grog-tempered

Table 11. Ceramic sherds from the Jones Hill site (41PK8) in TARL.

Ware	No. of plain sherds	No. of decorated sherds	N
Sandy paste	2079	13	2092
Grog-tempered	84	7	91
Grog-sandy paste	8	1	9
Grog-bone-tempered	11	0	11
Bone-tempered	15	1	16
Bone-sandy paste	7	0	7
Totals	2204	22	2226

Table 12. Decorative methods and elements in the ceramic wares from the Jones Hill site.

Decorative methods and elements	Rim	Body	N
Sandy paste			
<i>Incised</i>			
horizontal and diagonal opposed lines	0	1	1
<i>Red-Filmed</i>			
ext. red-filmed	0	12	12
Grog-tempered			
<i>Brushed</i>			
parallel brushed marks	0	3	3
<i>Incised</i>			
rectilinear incised el.	0	1	1
straight incised line	0	1	1
<i>Punctated</i>			
fingernail punctated row	0	1	1
tool punctated row	0	1	1
Grog-tempered-sandy paste			
<i>Appliqued</i>			
straight appliqued ridge	0	1	1
Bone-tempered			
<i>Brushed</i>			
parallel brushed marks	0	1	1
Totals	0	22	22

Marksville Stamped vessels, including *var. Manny* (n=2) and *var. Tryoville* (n=1) (Brown 1998:33-35); these vessel sherds date to the middle to late Marksville period in the Lower Mississippi valley, from ca. A.D. 100-300. These sherds have broad parallel, horizontal-vertical, straight, to curvilinear incised lines with either dentate stamped rows (*var. Troyville*) or simple implement-rocked stamped zones (*var. Manny*).

Later excavations by McClurkan (1968:27) in a midden deposit at the site recovered 366 ceramic vessel sherds, 96.5 percent from Goose Creek Plain,

var. unspecified sandy paste vessels, including rim, body, and base sherds. Six grog-tempered plain body sherds (1.6 percent) are in the assemblage, along with three more Marksville Stamped sherds (McClurkan 1968:Table 19). The recovery of a high proportion of Goose Creek Plain, *var. unspecified* sherds, the Marksville Stamped sherds (see McClurkan 1968:Figure 18c-e), and the number of contracting stem dart points suggests the main occupation at 41PK21 took place during the early part of the Mossy Grove culture, before A.D. 300-400.

41PK25

This site is on a Caney Creek alluvial terrace at Lake Livingston. At 41PK25, the only sherds (n=3) in the TARL collections are from grog- (n=1) and grog-bone-tempered (n=2) vessels. The three sherds have either parallel (n=2) or opposed (n=1) brushing marks on the body of post-A.D. 1200 utility ware Bullard Brushed jars.

The 1962 site form for the site indicates that over 140 ceramic vessel sherds were collected from 41PK25 in a surface collection and a test unit excavation. About 61 percent of the sherds were identified as sandy paste, almost 92 percent from Goose Creek Plain vessels. The few decorated sandy paste sherds had tool punctated (n=1), incised (n=1), trailed (n=1), brushed (n=2), and fingernail punctated (n=2) decorative elements. Approximately 9.6 percent of the sample were from ancestral Caddo bone-tempered vessels, including those with no decorative elements (n=7) as well as sherds with brushed (n=3), brushed-punctated (n=1), incised (n=2), and trailed (n=1) elements. The remainder of the sherds in the 1962 collection were from ancestral Caddo grog-tempered vessels, among them 29 plain sherds, two trailed sherds, four incised sherds, four brushed sherds, and five sherds from punctated vessels. The occurrence of both brushed and trailed bone-tempered and grog-tempered sherds at 41PK25 suggests that the site was occupied after ca. A.D. 1500.

Crawford Site (41PK69)

Excavations at the Crawford site (41PK69) in the Trinity River basin recovered 293 ceramic sherds from block and unit excavations (Ensor and Carlson 1988:Tables 41-43). They are equally divided between sandy paste Goose Creek series vessel sherds (n=146) and grog-tempered, bone-tempered, and grog-bone-tempered plain and decorated sherds (n=147). The sandy paste Goose Creek ceramic sherds, including Goose Creek Plain, *var. unspecified* (n=141) (see Ensor and Carlson 1988:Figure 53b-c) and Goose Creek Red-Filmed (n=5), are from a buried Woodland period component that dated as late as ca. A.D. 800 (Ensor and Carlson 1988:259).

The later ceramic-bearing component at the Crawford site has grog-tempered incised (n=9) sherds, grog-tempered plain sherds (n=64), plain bone-tempered sherds (n=12), incised-punctated bone-tempered sherds (n=2), plain grog-bone-tempered sherds (n=36), brushed grog-tempered sherds (n=13), grog-tempered incised-punctated sherds (n=7), and punctated grog-tempered sherds (n=3). Also in this assemblage is a single sherd from a long-stemmed pipe (Ensor and Carlson 1988:Figure 52e). At least two of

the sherds classified as coming from grog-tempered incised vessels (Ensor and Carlson 1988:Figure 52c-d) are actually from post-A.D. 1400 Poynor Engraved vessels that were manufactured in the Neches River basin in East Texas. The occurrence of these sherds along with a number of grog-tempered sherds with brushing marks (likely from Bullard Brushed vessels), the most common decorative element in the later assemblage, suggests that this later component at the Crawford site postdates A.D. 1400. Although Ensor and Carlson (1988:202) classify the plain grog-tempered sherds as Baytown Plain, they suggest that the “grog-tempered ceramics at the Crawford Site are related to Caddoan [sic] ceramics further north and east,” not to Texas Gulf Coast ceramic assemblages. The bone-tempered plain wares from the Crawford site may also be from Caddo vessels, since bone-tempered ceramics are relatively common at different times in several parts of East Texas occupied by Caddo peoples, including the middle Sabine River and in sites in the Angelina River basin (Perttula 2015:Figure 11). Bone-tempered wares thought to be of local manufacture occur between ca. A.D. 950-1350 in Galveston Bay ceramic assemblages (Aten 1983:244).

41PK88 (Burris 1)

The Burris 1 site (41PK88) is on an alluvial terrace of a tributary stream to the Trinity River. It has a dense midden deposit (McClurkan 1968:59-60). Features in the midden include a hearth and a pit with several ground stone tools. A sample of more than 4,370 ceramic vessel sherds were recovered in the University of Texas excavations, including 742 sherds with decorative elements and more than 72 percent of the sherds are from Goose Creek Plain, *var. unspecified* vessels (McClurkan 1968:Tables 29-31). The majority of the recovered sherds are from 0-1.5 ft. bs in the archaeological deposits.

The sample of ceramic vessel sherds in the TARL collections from the Burris 1 site include the sherds recovered in McClurkan's work as well as vessel sherds from additional excavations conducted by the Houston Archeological Society in 1964 at the site. These sherds, totaling 6,042 ceramic vessel sherds, are considered a single assemblage in Table 13; this is the largest sherd assemblage in the comparative sample of sherds from sites in Montgomery, Polk, San Jacinto, and Walker counties. The principal locally produced ceramic wares at the Burris 1 site are sandy paste Goose Creek vessels, almost all of which are Goose Creek Plain, *var. unspecified*; only 0.8 percent of the sandy paste sherds have decorative elements. The bone-tempered sandy paste vessel sherds, also thought to be of local manufacture

Table 13. Ceramic sherd assemblage from the Burris 1 site.

Ware	Plain	Decorated	Percent Decorated	Percent of Assemblage
Sandy paste	4651	36	0.8	77.8
Bone-sandy paste	22	0	0	0.4
Grog-tempered	503	490	49.8	16.4
Grog-tempered-sandy paste	17	15	46.9	0.5
Grog-bone-tempered	127	66	34.2	3.2
Grog-bone-tempered-sandy paste	1	0	0	Trace
Bone-tempered	44	70	61.4	1.9
Totals	5365	677	12.2	100

because of the use of a coarse sandy paste, represent only 0.4 percent of the Burris 1 sherd assemblage; notably, none of the sandy paste bone-tempered sherds are decorated.

The remainder of the ceramic vessel sherds from the Burris 1 site are from post-ca. A.D. 900 ancestral Caddo grog, grog-bone, or bone-tempered vessels, most of which were apparently from decorated utility ware and fine ware vessels. These sherds comprise 22.0 percent of the assemblage (see Table 13), and between 34.2-61.4 percent of these sherds – and 94.7 percent of all the decorated sherds from the site are from tempered vessels – have decorative elements on them. Of these tempered wares, more than 74.5

percent of the sherds are from grog-tempered vessels. Another 14.5 percent are from grog-bone-tempered sherds, 8.6 percent are from bone-tempered vessels, and 2.4 percent are from grog-tempered-sandy paste vessels (see Table 13).

Sherds with drilled holes are notable in the Burris 1 ceramic assemblage, with 32 sherds spread among the sandy paste Goose Creek Plain, *var. Burris* (n=13) and tempered ancestral Caddo sherds: 13 grog-tempered, two grog-bone-tempered, and four bone-tempered sherds with drilled holes. The mean diameter of the drilled holes in these wares ranges from 6.32 mm (Goose Creek Plain) to 6.62 mm (grog-tempered sherds), suggesting a similar use for such drilled

Figure 14. Selected decorative elements on sandy paste sherds from the Burris 1 site:
a, horizontal and cross-hatched incised;
b, horizontal incised lines beneath a row of tool punctations;
c, rectilinear hatched incised;
d, horizontal and vertical incised lines.

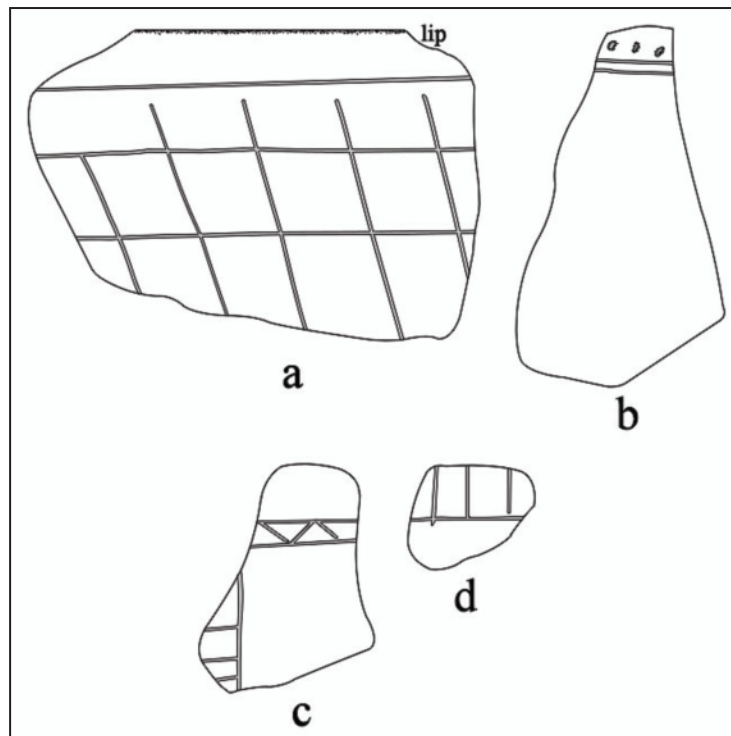


Table 14. Decorative methods and elements in the sandy paste Goose Creek wares at the Burris 1 site.

Decorative method and elements	Rim	Body	N
<i>Incised</i>			
diagonal incised lines	0	1	1
interior horizontal incised lines	0	1	1
8+ horizontal incised lines	1	0	1
horizontal and cross-hatched incised lines	1	0	1
horizontal-vertical incised lines	0	1	1
opposed incised lines	0	1	1
parallel incised lines	0	7	7
rectilinear hatched zones	0	1	1
straight incised line	0	5	5
<i>Incised-Punctated</i>			
horizontal incised lines below row of tool punctations	0	1	1
<i>Lip Notched</i>	9	0	9
<i>Punctated</i>			
fingernail punctated row	0	3	3
tool punctated row	0	2	2
<i>Red Filmed</i>			
exterior red-filmed surface	0	1	1
interior red-filmed surface	0	1	1
Totals	11	25	36

holes. The wide range in the drilled hole diameters on the Goose Creek Plain sherds (2.8-11.8 mm), and the large standard deviation in hole diameters (2.65 mm) of these sherds compared to the standard deviation of the diameter of the holes in the tempered wares (0.87-1.55 mm) suggests that Goose Creek Plain vessels of different sizes and orifice diameters had drill holes. As mentioned above, it seems most likely that these drilled holes were not for suspension of vessels, but for use in holding down a cover of some kind over the vessel mouth. It is likely that the drilled holes were added to ancestral Caddo vessels by the local Mossy Grove group, rather than by Caddo potters at the time of manufacture.

The few decorated sandy paste sherds in the Burris 1 assemblage (Table 14) are dominated by Goose Creek Incised vessels (n=19, 53 percent of the decorated sandy paste sherds) with simple geometric elements (Figure 14a, c-d) and Goose Creek Plain, *var. Burris* lip notched vessels (n=9, 25 percent). One sandy paste sherd has incised-punctated elements that

consist of closely-spaced horizontal incised lines beneath a row of tool punctations (Figure 14b).

The remainder of the decorated sandy paste sherds from the Burris 1 site include sherds with a row of either fingernail or tool punctations (14 percent of the sandy paste decorated sherds in the assemblage), and two sherds (5.5 percent) with a red-filmed surface (see Table 14). These are from Goose Creek Punctated and Goose Creek Red-Filmed vessels, respectively.

Although not decorated, one sandy paste body sherd at the Burris site has an asphaltum coating on its exterior surface. This sherd is likely from a Rockport ceramic vessel produced by a Central Texas Coast Karankawa potter (see Ricklis 2004, 2013).

There are several vessel sections in the Burris 1 assemblage; these are vessel sections of utility ware and fine ware represented by multiple rim and/or body sherds from the same vessel, sometimes conjoinable, sometimes not. This includes three grog-tempered vessel sections, two grog-bone-tempered

vessel sections, and two bone-tempered vessel sections.

The first of the grog-tempered vessel sections has three body sherds with vertical brushed-incised marks, probably from the body of a Bullard Brushed jar. The second vessel section has three rim sherds and one body sherd with a row of fingernail punctations below the vessel lip. The third grog-tempered vessel section has 36 body sherds with a horizontal incised line at the rim-body juncture and vertical brushing marks on the vessel body; this vessel section may be from a Pease Brushed-Incised jar.

The first of the grog-bone-tempered vessel sections in the assemblage is represented by three body sherds with parallel brushed marks, likely from a Bullard Brushed vessel. The vessel section has a 4.9 mm drilled hole. The second vessel section is a Bullard Brushed jar with two rim sherds and 22 body sherds. The rim has tool punctations at the lip as well as horizontal brushing marks, while the vessel body has vertical brushing marks.

The first bone-tempered vessel section, with five body sherds, has curvilinear lines with hatched areas as well as an excised circle element (see Figure 17e-e'). These sherds are likely from a Poynor Engraved vessel (see Suhm and Jelks 1962; Perttula 2011). The second vessel section with bone temper has four rim and 20 body sherds with vertical and horizontal incised lines.

The decorated rim and body sherds from ancestral Caddo tempered utility wares at the Burris 1 site include 58 rim sherds and 549 body sherds (Table 15). The utility wares represent 94.7 percent of the decorated Caddo vessel sherds at the Burris site, and sherds from fine wares (four rim sherds and 30 body sherds, see below) only 5.3 percent of the decorated Caddo vessel sherd assemblage.

As an assemblage, approximately 45.8 percent of the sherds, including 36 percent of the rim sherds, have incised decorative elements from several different types, including Davis Incised, Dunkin Incised, and Maydelle Incised, while another 24.8 percent – and 29.0 percent of the rim sherds – are from brushed Bullard Brushed vessels. Sherds with brushed-incised elements, from Bullard Brushed, Pease Brushed-Incised, and Spradley Brushed-Incised vessels, comprise 10.9 percent of the utility wares (although no rim sherds). Sherds from incised-punctated vessels comprise 16 percent of the utility ware rim sherds and 6.2 percent of the assemblage, and Weches Fingernail Impressed, *var. Weches* vessel sherds (Stokes and Woodring 1981) are well represented. Fingernail and tool punctated rim and body sherds account for 9.7 percent of the utility wares, and there are small percentages of applied (0.2 percent), brushed-incised-punctated (0.3 percent), brushed-punctated

(1.1 percent), incised-applied (0.2 percent), pinched-brushed (0.3 percent), and trailed (0.3 percent) and trailed-punctated (0.2 percent) sherds from Foster Trailed-Incised vessels (see Table 15). As will be discussed below, the decorated utility ware sherds are from at least three components: a pre-A.D. 1200 Early Caddo period component; a ca. A.D. 1400-1680 Late Caddo period component; and a ca. A.D. 1680-1730 Historic period component.

The one applied sherd from an ancestral Caddo ceramic vessel in the Burris 1 site assemblage has a straight applied ridge (see Table 15). A number of Late Caddo period types have applied elements either on the vessel rim and/or the body, among them La Rue Applied, McKinney Applied, Nash Neck Banded, Pease Brushed-Incised, and Emory Punctated-Incised.

Sherds with brushed, brushed-incised, brushed-incised-punctated, and brushed-punctated decorative elements are common in the Burris 1 site Caddo utility wares (see Table 15), and the proportion of sherds with brushing elements (37.1 percent) in the Burris 1 assemblage is consistent with a post-A.D. 1400 Frankston phase ceramic assemblage in East Texas. Most of these are from Bullard Brushed jars with diagonal or horizontal brushing marks on the rim, and opposed, overlapping, and vertical brushing marks on the body. A few of the brushed-incised sherds with parallel brushing marks and diagonal or opposed incised lines are likely from Pease Brushed-Incised jars, as are the two body sherds with brushed-incised-punctated decorative elements (see Table 15). The rim and body sherds with brushed-punctated decorative elements are from Bullard Brushed vessels (see Suhm and Jelks 1962:21).

Thirteen brushed-incised body sherds with parallel brushed marks and overlying incised lines are from Spradley Brushed-Incised vessels. Spradley Brushed-Incised utility ware is found on Historic Caddo Allen phase sites in the Neches-Angelina river basins in East Texas. It consists of parallel brushing elements with overlapping straight incised lines that are opposed or perpendicular to the brushing (Marceaux 2011:140 and Figure 5.2).

The ancestral Caddo rim and body sherds from the Burris 1 site have incised decorative elements with diagonal, diagonal opposed, horizontal, and horizontal-cross-hatched incised lines (see Table 15). These are from Davis Incised and Dunkin Incised vessels (Figure 15b-c) made in Early Caddo period times. Other sherds have parallel incised lines, including a set of sherds with broad parallel incised lines, or simple geometric elements; only 2 percent of the sherds have curvilinear or semi-circular incised elements (see Table 15).

Table 15. Decorative methods and elements on ancestral Caddo tempered utility ware vessels at the Burris 1 site.

Decorative method and elements	Rim	Body	N
<i>Appliqued</i>			
straight appliqued ridge	0	1	1
<i>Brushed</i>			
diagonal brushed marks	1	0	1
horizontal brushed marks	15	0	15
horizontal-diagonal brushed marks	1	0	1
horizontal-vertical brushed marks	0	2	2
opposed brushed marks	0	9	9
overlapping brushed marks	0	2	2
parallel brushed marks	0	115	115
vertical brushed marks	0	3	3
vertical and overlapping brushed marks	0	2	2
<i>Brushed-Incised</i>			
opposed brushed-incised marks and lines	0	6	6
parallel brushed-incised marks and lines	0	42	42
parallel brushed marks-diagonal incised lines	0	2	2
parallel brushed marks-opposed incised lines	0	1	1
parallel brushed marks-overlying opposed incised lines	0	13	13
vertical brushed-incised marks and lines	0	2	2
<i>Brushed-Incised-Punctated</i>			
vertical brushing marks [body]-straight incised line-tool punctated row	0	1	1
vertical brushed marks-tool punctated row-diagonal brushed-incised marks and lines	0	1	1
<i>Brushed-Punctated</i>			
horizontal brushed marks-tool punctated row at the lip	3	0	3
horizontal-diagonal brushed marks-tool punctated row-opposed brushed marks [body]	1	0	1
parallel brushed marks-tool punctated row through the brushing	0	1	1
vertical brushed marks-tool punctated row above the brushing	0	1	1
vertical brushed marks-tool punctated row through the brushing	0	1	1

Table 15. Decorative methods and elements on ancestral Caddo tempered utility ware vessels at the Burris 1 site (continued).

Decorative method and elements	Rim	Body	N
<i>Incised</i>			
cross-hatched incised lines	0	12	12
curvilinear incised lines	0	4	4
diagonal incised lines	4	0	4
sets of diagonal incised lines	1	0	1
diagonal opposed incised lines	1	7	8
2+ horizontal incised lines	1	0	1
3-7+ horizontal incised lines	9	1	10
horizontal incised lines	3	2	5
horizontal-cross-hatched incised lines	1	0	1
horizontal-diagonal opposed incised lines	0	10	10
horizontal-semi-circular incised lines	0	2	2
horizontal-vertical incised lines	0	4	4
broad opposed incised lines	0	6	6
opposed incised lines	0	6	6
broad parallel incised lines	0	88	88
closely-spaced parallel incised lines	0	1	1
parallel incised lines	0	94	94
sets of parallel incised lines	0	1	1
rectilinear incised lines	0	1	1
straight incised line	0	16	16
broad vertical incised lines	0	1	1
zig-zag incised lines	0	1	1
<i>Incised-Appliqued</i>			
diagonal opposed incised lines-horizontal and vertical appliqued fillets	1	0	1
<i>Incised-Punctated</i>			
circular incised zone with circular punctations	0	1	1
diagonal incised lines-tool punctated-filled zone	0	1	1
diagonal-horizontal incised zone filled with circular punctations	0	2	2
horizontal incised lines and circular punctated row	1	0	1
horizontal incised lines between rows of fingernail punctations	8	20	28
horizontal-diagonal incised lines above tool punctated row	0	1	1
horizontal-diagonal incised lines and zone filled with circular punctations	0	1	1
parallel incised lines-tool punctated row	0	1	1
straight incised line between tool punctated rows	0	1	1
zoned incised el. filled with circular punctations	0	1	1

Table 15. Decorative methods and elements on ancestral Caddo tempered utility ware vessels at the Burris 1 site (continued).

Decorative method and elements	Rim	Body	N
<i>Punctated</i>			
fingernail punctated rows	1	29	30
diagonal tool punctated rows	1	0	1
diagonal-parallel tool punctated rows	0	1	1
horizontal-diagonal tool punctated rows	1	0	1
tool punctated row/rows	1	25	25
<i>Trailed</i>			
curvilinear trailed lines	0	1	1
parallel trailed lines	0	1	1
<i>Trailed-Punctated</i>			
tool punctated rows [rim]-curvilinear trailed lines [body]	0	1	1
Totals	58	549	607

One distinct incised-appliqued rim sherd is from a Pease Brushed-Incised vessel (see Figure 15a). It has diagonal opposed incised lines in panels between horizontal and vertical appliqued fillets.

The incised-punctated sherds from ancestral Caddo vessels at the Burris 1 site are primarily from Early

Caddo period Weches Fingernail Impressed, *var. Weches* vessels (see Figure 15f-h). These have horizontal incised lines between rows of highly arched fingernail punctations. Other sherds in this decorative category have triangular zones filled with punctations of one form or another (see Table 15).

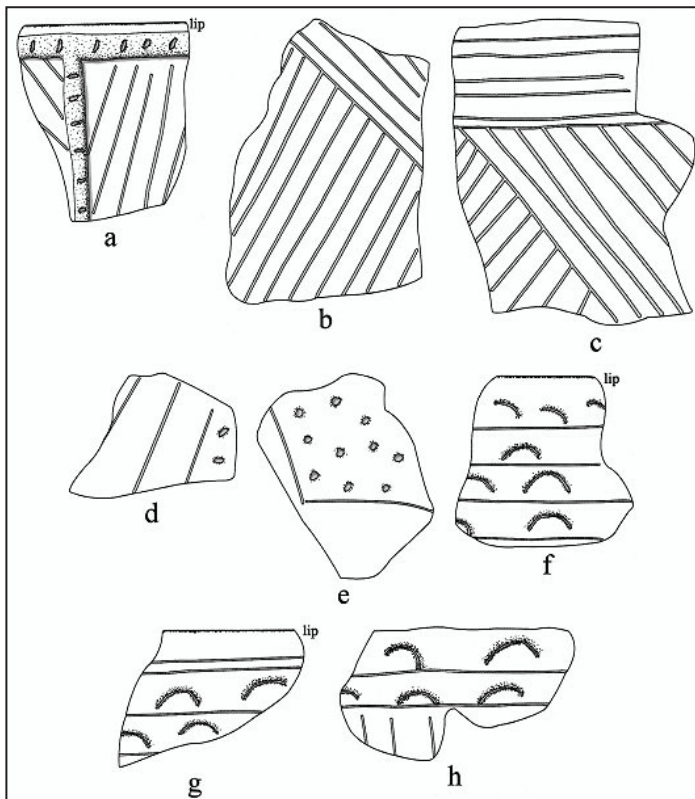
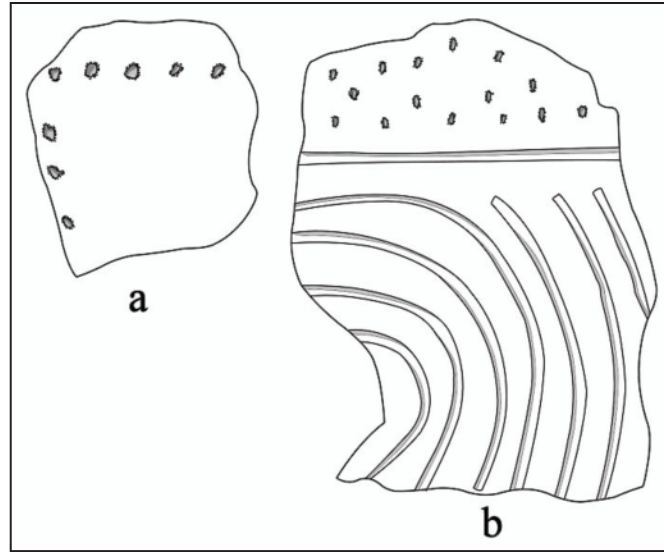


Figure 15. Selected decorative elements on tempered utility ware sherds from the Burris 1 site:

- a, Pease Brushed-Incised appliqued-incised rim sherd;
- b-c, Dunkin Incised body sherds;
- d, incised-punctated body sherd;
- e, diagonal-horizontal incised zone with circular punctations;
- f-g, Weches Fingernail Impressed, *var. Weches* rim sherd;
- h, Weches Fingernail Impressed, *var. Weches* lower rim-body sherd.

Figure 16. Selected decorative elements on tempered utility ware sherds from the Burris 1 site:
a, tool punctated rim sherd;
b, Foster Trailed-Incised, var. *Moore* lower rim-body sherd.



Two sherds in the Burris 1 assemblage have horizontal pinched ridges on the rim and vertical brushing marks on the vessel body (see Table 15). These rims are from Bullard Brushed vessels (Suhm and Jelks 1962:21).

Both fingernail and tool punctated rim ($n=4$) and body ($n=55$) sherds are among the ancestral Caddo vessel sherds at the Burris 1 site (see Table 15). In most cases, it is apparent that the punctated rows run horizontally around the rim, but one rim sherd has horizontal and diagonal tool punctated rows (Figure 16a).

Three body sherds in the collection are from Foster Trailed-Incised vessels, two from var. *unspecified* vessels and one from a var. *Moore* jar (see Figure 16b). This particular variety of Foster Trailed-Incised has a tool punctated rim and curvilinear trailed lines on the vessel body, and dates from ca. A.D. 1680-1730 (Schambach and Miller 1984:121 and Figure 11-10).

There are only 34 rim and body sherds in the Burris 1 assemblage from ancestral Caddo tempered fine ware vessels (Table 16). They include sherds from engraved (73.5 percent of the fine wares), engraved-punctated-brushed (17.6 percent), red slipped (5.9 percent), and trailed (2.9 percent) vessels.

The engraved rim sherds from ancestral Caddo tempered vessels at the Burris 1 site includes one with horizontal and vertical engraved lines and another with slanting scroll lines and curvilinear scroll fill zones (Figure 17f). This latter sherd is likely from one of the varieties of Late Caddo period Titus phase Ripley Engraved vessels that have slanting scrolls and scroll fill zones, including var. *Gandy*, var. *Galt*, var. *Caldwell*, and var. *Carpenter* (see Perttula 2005). A Ripley Engraved bottle sherd in the assemblage has a curvilinear engraved line on it with a series of large

excised pendant triangles (Figure 17g). Other vessel sherds also from Late Caddo period vessels includes a body sherd with an engraved bracket with tick marks on one curvilinear engraved line (Figure 17c), four body sherds with curvilinear engraved lines, bracket dividers, and a hooked arm element (Figure 17b), and a body sherd with horizontal engraved lines with excised tick marks may be from an Historic Caddo Patton Engraved vessel.

One pre-A.D. 1200 engraved sherd in the Burris 1 assemblage is a body sherd with curvilinear engraved lines adjacent to a broad excised zone (see Figure 17a). This sherd may be from a Holly Fine Engraved vessel (see Suhm and Jelks 1962:77).

A distinctive set of fine ware rim and body sherds in the Burris 1 decorated sherd assemblage are from a Late Caddo period vessel with an engraved scroll motif, hatched and cross-hatched scroll fill zones, and a row of fingernail punctations at the top of the rim (see Figure 17d and Table 16). With the exception of the punctations, it resembles an Avery Engraved carinated bowl from the Hatchel site (41BW3) on the Red River in East Texas (see Suhm and Jelks 1962:Plate 2l).

Two fine ware body sherds have a hematite-rich clay slip added to the exterior vessel surface as a decoration. The use of a red slip on grog-tempered vessels is a relatively common decorative method in Middle and Late Caddo period ceramic assemblages in the upper Neches, upper Sabine, and upper Sulphur River basins in East Texas, suggesting the source area for the vessel sherds from the Burris 1 site. The one Keno Trailed, var. *unspecified* body sherd in the Burris 1 ceramic assemblage has diagonal opposed trailed lines (see Figure 17h). The presence of a Keno Trailed sherd in the ancestral Caddo tempered vessel sherds from the site also suggests that the Burris 1

Table 16. Decorative methods and elements on ancestral Caddo tempered fine ware vessels at the Burris 1 site.

Decorative method and elements	Rim	Body	N
<i>Engraved</i>			
bracket element with tick marks on one curvilinear engraved line	0	1	1
cross-hatched engraved zone	0	1	1
curvilinear engraved line	0	1	1
curvilinear engraved line with excised pendant triangle el.	0	1	1
curvilinear engraved lines and broad excised zone	0	1	1
curvilinear engraved lines-bracket dividers and hooked arm element	0	4	4
horizontal engraved lines with excised tick marks	0	1	1
horizontal-diagonal engraved lines	0	1	1
horizontal-vertical engraved lines	1	0	1
opposed curvilinear engraved lines	0	1	1
parallel engraved lines	0	1	1
parallel engraved lines and interior straight engraved line	0	1	1
slanting scroll element with curvilinear scroll fill zone	1	0	1
interior straight engraved line	0	1	1
straight engraved line	0	8	8
<i>Engraved-Punctated-Brushed</i>			
slanting engraved scroll with hatched and cross-hatched scroll fill zones-fingernail punctated row at the top of the rim	2	4	6
<i>Red-Slipped</i>			
ext. red-slipped surface	0	2	2
<i>Trailed</i>			
diagonal opposed trailed lines	0	1	1
Totals	4	30	34

site was at least occupied after ca. A.D. 1650 or later, during Historic Caddo period times (post-ca. A.D. 1680).

Burris 2 (41PK89)

The Burris 2 site is in the Caney Creek valley, opposite the Burris 1 site, a short distance from the confluence of the creek with the Trinity River (McClurkan 1968:29). The midden deposits there contained a large sample of ceramic vessel sherds (n=487), dart points (n=72, primarily Gary points) and arrow points (n=21, primarily Alba and Perdiz points) (McClurkan 1968:Tables 22 and 23).

The TARL collection of vessel sherds from the Burris 2 site has 468 sherds (Table 17). Approximately 80 percent of the plain sherds are from Goose Creek Plain, *var. unspecified* vessels, including two sherds with drilled holes. Only 3.5 percent of the sandy paste sherds have decorative elements. The remainder of the vessel sherds (n=127) are from vessels tempered either with grog or bone, and 36 percent of these sherds are from vessels with rim and/or body decorative elements.

The decorated sandy paste sherds from the Burris 2 site include four Goose Creek Incised sherds with diagonal or parallel incised lines (Table 18), and four incised-punctated sherds, including one rim with horizontal and vertical scroll lines with adjacent

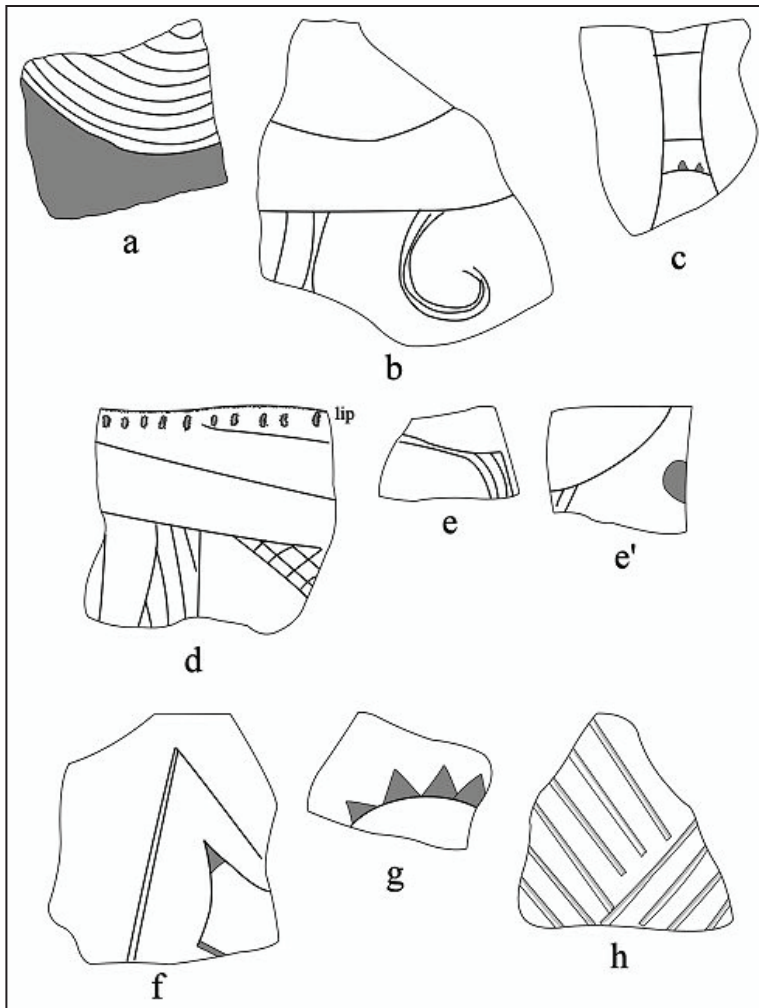


Figure 17, A. Selected decorative elements on ancestral Caddo tempered fine ware sherds from the Burris 1 site:

- a, body sherd with curvilinear engraved lines and broad excised zone;
- b, bottle body sherd with curvilinear engraved lines-bracket element-hooked arm element;
- c, bottle body sherd with curvilinear bracket element and line with tick marks;
- d, rim sherd with engraved scroll motif, hatched and cross-hatched scroll fill zones-fingernail punctated row at top of the rim;
- e-e', curvilinear engraved and curvilinear hatched areas-excised circle element from vessel section;
- f, rim sherd with slanting scroll element and curvilinear scroll fill zone;
- g, bottle body sherd with curvilinear engraved line-excised pendant triangle elements;
- h, Keno Trailed body sherd.

horizontal and vertical rows of small tool punctations (Figure 18); very similar incised-punctated sherds from one vessel have been reported from the Jones Hill site (41PK8) (see McClurkan 19968:Figure 18k-l). Three other sandy paste sherds (Goose Creek Punctated) have rows of circular or fingernail punctations, as well as a sandy paste rim sherd with diagonal brushing marks.

About 47 percent of the grog-tempered decorated sherds from the Burris 2 site have brushed or brushed-

incised decorative elements (see Table 18). These Caddo utility ware ceramics date to after ca. A.D. 1200, but given the proportional frequency of brushed sherds in the decorated sherd assemblage, it is more likely that these sherds are from post-A.D. 1400 Caddo Bullard Brushed vessels. One sherd with parallel brushed marks and overlying opposed incised lines may be from a Spradley Brushed-Incised vessel; sherds of this type are found in post-A.D. 1680 Caddo contexts in the Neches and Angelina River basins in

Table 17. TARK collection of ceramic vessel sherds from the Burris 2 site.

Ware/Temper	No. of plain sherds	No. of decorated sherds	N
Sandy paste	329	12	341
Grog-tempered	53	38	91
Grog-bone-tempered	11	4	15
Bone-tempered	13	3	16
Bone-sandy paste	4	1	5
Totals	410	58	468

Table 18. Decorative methods and elements present in the decorated sherds from the Burris 2 site.

Decorative method and element	Rim	Body	N
Sandy paste			
<i>Brushed</i>			
diagonal brushed marks	1	0	1
<i>Incised</i>			
diagonal opposed incised lines	0	1	1
parallel incised lines	0	3	3
<i>Incised-Punctated</i>			
horizontal-vertical incised lines with adjacent tool punctated rows	1	2	3
straight incised line-adjacent circular punctated zone	0	1	1
<i>Punctated</i>			
circular punctated rows	0	1	1
finger nail punctated rows	0	1	1
single circular punctation	0	1	1
Grog-tempered			
<i>Brushed</i>			
overlapping brushed	0	1	1
parallel brushed	0	11	11
<i>Brushed-Incised</i>			
opposed brushed-incised marks and lines	0	1	1
parallel brushed-incised marks and lines	0	3	3
parallel brushed marks-overlying opposed incised lines	0	2	2
<i>Incised</i>			
cross-hatched incised lines	0	2	2
diagonal opposed incised lines	0	1	1
4+ horizontal incised lines	1	0	1
opposed incised lines	0	2	2
parallel incised lines	0	7	7
<i>Incised-Punctated</i>			
tool punctated row above vertical incised lines	0	1	1

Table 18. Decorative methods and elements present in the decorated sherds from the Burris 2 site (continued).

Decorative method and element	Rim	Body	N
<i>Punctated</i>			
fingernail punctated rows	0	1	1
tool punctated rows	1	1	2
<i>Engraved</i>			
straight engraved line	0	1	1
<i>Engraved-Brushed</i>			
hatched triangle element-horizontal brushed marks	0	1	1
<i>Grog-bone-tempered</i>			
<i>Brushed</i>			
opposed brushed marks	0	1	1
<i>Brushed-Incised</i>			
vertical brushed-incised marks and lines	0	1	1
<i>Incised</i>			
parallel incised lines	0	1	1
straight incised line	0	1	1
<i>Bone-tempered</i>			
<i>Brushed</i>			
horizontal brushed [rim]-diagonal brushed [body]	0	1	1
opposed brushed marks	0	1	1
parallel brushed marks	0	1	1
<i>Bone tempered-sandy paste</i>			
<i>Punctated</i>			
tool punctated row	0	1	1
Totals	4	53	57

East Texas (see Perttula 2013). The grog-tempered sherds with incised (n=13) and incised-punctated (n=1) decorative elements are from Maydelle Incised vessels, a common Late Caddo period utility ware.

The remainder of the grog-tempered decorated sherds from the Burris 2 site are from engraved fine ware vessels (see Table 18). One body sherd has a single straight engraved, while the other may be from a post-A.D. 1400 Poynor Engraved carinated bowl

with a hatched triangle engraved element on the rim panel, and the vessel body covered with horizontal brushing marks.

The grog-bone-tempered decorated sherds at the Burris 2 site are all from utility ware vessels. This includes two brushed and brushed-incised sherds from Bullard Brushed vessels, and two sherds with simple incised elements (see Table 18). The three bone-tempered decorated sherds are from brushed

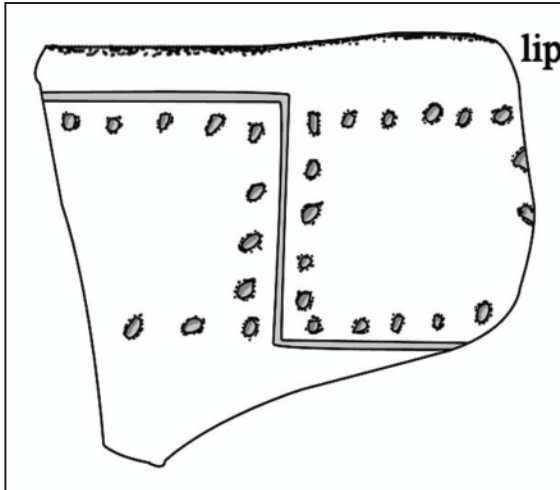


Figure 18. Incised-punctated sandy paste rim sherd from the Burris 2 site.

vessels, including a Bullard Brushed sherd with horizontal brushed marks and diagonal brushed marks on the vessel body. The one bone-tempered sandy paste decorated sherd has a single row of tool punctations.

41PK90

Houston Archeological Society 1964 archeological investigations at 41PK90 on Caney Creek at Lake Livingston recovered 89 ceramic vessel sherds that are curated at TARL. About 40 percent ($n=36$) of the sherds from the site are rim, body, and base sherds from Goose Creek Plain, *var. unspecified* vessels.

Another 46 percent of the sherds ($n=41$) from 41PK90 are from grog-tempered vessels, including two body sherds with parallel incised lines, one body sherd with a straight incised line, and a body sherd with rows of tool punctations; these sherds are likely to be from vessels that have been manufactured by Caddo potters living in East Texas. Two other sherds (2.2 percent) in the assemblage have a sandy paste but are tempered with grog; one of these has curvilinear incised lines. About 3 percent of the sherds are from grog-bone-tempered vessels, among them one body sherd with closely-spaced parallel incised lines and a second sherd with parallel brushing marks. Finally, 7.9 percent ($n=7$) of the vessel sherds from 41PK90 are tempered only with burned bone. One of these body sherds has parallel brushed-incised marks and lines. The recovery of brushed and brushed-incised sherds from grog-bone- and bone-tempered vessels, as well as the frequency of tempered wares, suggests that the principal occupation of 41PK90 occurred after ca. A.D. 1200, when brushed utility ware vessels began to be manufactured by East Texas Caddo potters in much of East Texas (see Perttula

2013); some of these vessels were widely traded/exchanged with non-Caddo peoples.

41PK144 and 41PK145

The Houston Archeological Society conducted archeological investigations at both 41PK144 and 41PK145 in 1969; these sites are at Lake Livingston: 41PK144 on Jennings Branch and 41PK145 on the Trinity River at the confluence with Kickapoo Creek. At both sites, only Goose Creek Plain, *var. unspecified* rim, body, and base sherds were recovered, including 48 sherds at 41PK144 and 11 body sherds at 41PK145.

41PK248

41PK248 on the Alabama-Coushatta Reservation has a Mossy Grove component with calibrated radiocarbon dates of A.D. 210-390 and A.D. 670-890 (Willis 2007). Ceramic sherds ($n=37$) recovered in the component are from sandy paste Goose Creek Plain vessels (Perttula 2007:Table 3), along with two plain tempered vessel sherds, one tempered with bone and hematite and the other tempered with bone and grog. These particular sherds may be associated with a post-A.D. 900 occupation of the site, and may be from vessels manufactured by East Texas Caddo potters (Willis 2007:32) or from potters along the Texas Gulf Coast (Perttula 2007:C-4).

The Goose Creek Plain, *var. unspecified* sherds from 41PK248 are from compact and smoothed vessels made by coiling. The smoothing served to better weld the coils together before firing. The paste is not contorted, thus suggesting it was decently prepared for vessel shaping, and the rim and body walls are also quite uniform in thickness: another indication of some measure of ceramic craftsmanship. The sandy paste vessels have thin walls: rims are 5.87 ± 0.77 mm in thickness (range of 4.9-7.0 mm); body sherds have a mean thickness of 5.55 ± 0.82 mm (range 3.6-6.9 mm). The rims may have been made to be thicker than the vessel body walls to stand up to the cooking, stirring, and ladling of cooked food stuffs from these vessels and the rougher expected treatment of rims in general. All six of the rims have rounded lips, with direct or vertical standing walls (Perttula 2007:Figure 1b). The largest rim has a 15 cm orifice diameter and is likely from a shallow and not particularly large bowl. Other sherds are probably from cooking jars; two sherds from Unit 3 have preserved organic residues on exterior surfaces (see Perttula 2007:Table 3) from the charring of food stuffs. A few sherds have fire clouding.

San Jacinto County Sites

Trichel Site (41SJ16)

Texas Archeological Salvage Project excavations at the Trichel site at Lake Livingston were done in 1965 (McClurkan 1967, 1968:21). The site is on a low ridge about 0.25 miles west of the Trinity River. Of the 506 ceramic vessel sherds found in the work, more than 81 percent are from Goose Creek Plain, *var. unspecified* sherds; seven decorated sherds are from sandy-paste vessels (McClurkan 1968:Table 14), but the decorative elements on these sherds is not specified in McClurkan (1968:Table 15). The remainder of the ceramic vessel sherds include plain and/or decorated sherds from grog-tempered (n=58), grog-bone-tempered (n=4), and bone-tempered (n=17) vessels. At least one sherd is from an early Caddo (ca. A.D. 900-1200) Weches Fingernail Impressed, *var. Weches* vessel (see McClurkan 1968:Figure 18b; Stokes and Woodring 1981), and other decorated sherds are likely from brushed, incised, punctated, and incised-punctated vessels.

The small TARL collection of ceramic vessel sherds from the Trichel site includes one Goose Creek Plain, *var. unspecified* body sherd, plain grog-tempered sherds (n=3), and four decorated sherds from grog-tempered vessels. These sherds have either rows of fingernail (n=2) or tool punctations.

Pats Lake Site (41SJ17)

The Houston Archeological Society conducted excavations at the Pats Lake site (41SJ17) in 1965 and 1969. The site is on an alluvial terrace of the Trinity River across from the confluence of Kickapoo Creek and the river.

There are 75 ceramic vessel sherds in the TARL collections from the site. About 65 percent of the sherds (n=49) are from Goose Creek Plain, *var. unspecified* rim, body, and base sherds. Twenty percent of the vessel sherds (n=15) are from vessels tempered with grog, and four of the grog-tempered sherds are from decorated vessels. These include two sherds from Caddo-manufactured Bullard Brushed vessels with vertical brushing marks, a third sherd with parallel incised lines, and the last sherd having a single tool punctated element. The brushed sherds from Bullard Brushed vessels in the assemblage are indicative of some use of the Pats Lake site after ca. A.D. 1200, and probably more likely after ca. A.D. 1400. This latter date seems reasonable given a Poynor Engraved, *var. Cook* rim sherd from the 1965 surface collection by the Houston Archeological Society.

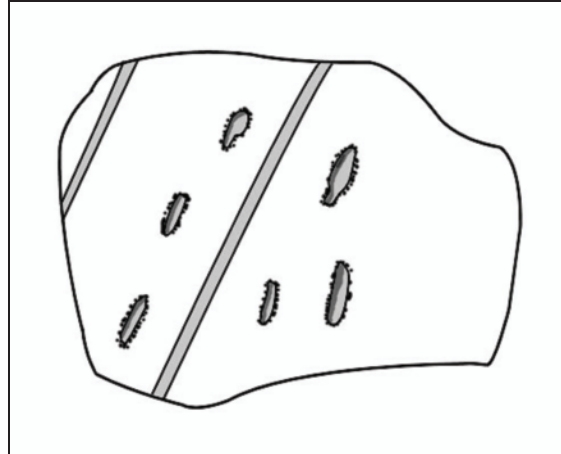


Figure 19. Grog-bone-tempered body sherd from the Pats Lake site (41SJ17) with incised-punctated decorative elements.

Only 8.0 percent of the ceramic sherds (n=6) from the Pats Lake site are from vessels made with grog and bone temper. One of this is a body sherd probably from a Maydelle Incised vessel with incised zones filled with tool punctations (Figure 19), while the other sherds are plain. Another plain body sherd is from a vessel with grog and crushed hematite temper. Lastly, 5.3 percent (n=4) of the plain body and base sherds from the site are from bone-tempered vessels.

Houston Site (41SJ19)

Work at the Houston site (41SJ19) at Lake Livingston, about 1.5 miles from the Trinity River, recovered 1,077 ceramic vessel sherds in the Mossy Grove archeological deposits, primarily between 1.0-2.5 feet below surface (McClurkan 1968:Table 9). About 98.2 percent of the sherds are plain, and only 19 have decorative elements. The principal ceramic ware is sandy paste Goose Creek Plain, *var. unspecified* (n=1015), while 21 plain sherds are from grog-tempered vessels; another 16 sherds are from bone-tempered vessels. Six sherds had no obvious temper.

The few decorated sherds are from 0.5-2.5 feet below surface. They include sherds with brushing marks (n=7), incised lines (n=5), punctations (n=5), and engraved lines (n=2). McClurkan (1968:Table 9) indicated that 42 percent of the decorated sherds are from sandy paste vessels, another 42 percent were from grog-tempered vessels, and 16 percent were from bone-tempered vessels, but he provided no information on the paste or temper of the decorated sherds, and he provided no illustrations of the specific decorated sherds. The fact that brushed sherds are common in the decorated sherds from the Houston site indicates that it was occupied at least after A.D.

1200; this is also indicated by the recovery of Perdiz and Bassett arrow points (McClurkan 1968:Table 12).

The small TARL ceramic collections from the Houston site are from 1964-1965 Texas Archeological Salvage Program excavations and 1968 work done by the Houston Archeological Society. These include 10 vessel sherds and one ceramic bead. The sherds include a Goose Creek Plain, *var. unspecified* rim (n=1), a plain grog-bone-tempered rim sherd, and eight decorated body sherds. Among these are one Goose Creek Incised sherd with cross-hatched lines, and another sandy paste sherd with rows of small circular punctations; the other six sherds are from tempered vessels: five tempered with grog and the other tempered with bone.

Four of the five grog-tempered decorated body sherds have either rows of fingernail (n=2) or tool punctations (n=2). The other grog-tempered sherd has parallel incised lines. The one bone-tempered decorated sherd in this collection from the Houston site has parallel brushed marks, and is likely from a Bullard Brushed vessel made after ca. A.D. 1200 by an East Texas Caddo potter.

The one ceramic bead from the Houston site is a rare find, because ceramic beads are known to be present in no more than three sites in Southeast Texas (Gus Costa, October 2017 personal communication). This bead is 24.8+ mm in length and 10.2 mm in diameter. It has no apparent temper, and was fired and cooled in an oxidizing environment. The perforation or hole in the bead is only 0.8 mm in diameter.

Oil Field Road Site (41SJ156)

There are both sandy paste and grog-tempered vessel sherds in TARL, along with much of an engraved compound bowl (see below). The sherds (n=7) and vessel section were donated to TARL by Wayne B. Neyland.

The vessel sherds are from the surface of the Oil Field Road site. Almost 43 percent of the sherds are from Goose Creek Plain, *var. unspecified* body sherds, and 14 percent of the sherds are plain grog-tempered body sherds. The remaining 43 percent are grog-tempered body sherds from the same vessel, which is decorated with parallel applied ridges, probably running vertically down the vessel body. These sherds are likely from a post-A.D. 1650 Cass Appliqued jar (see Suhm and Jelks 1962:25 and Plate 13).

The one vessel in the TARL collections from the Oil Field Road site is a grog-tempered compound bowl of undetermined type with engraved decorative elements (Martin et al. 1995:Figure 15). These elements, as discussed below, are consistent with the

vessel having been manufactured in East Texas by a Caddo potter sometime after ca. A.D. 1400.

SITE NAME OR SITE NUMBER: Oil Field Road site (41SJ156)

VESSEL NO.: 1

VESSEL FORM: Compound bowl with drilled repair holes (6-8 mm in diameter) on the upper panel and vessel body. There are two sets of drilled holes ca. 2 cm apart on the upper panel, and three sets of drilled holes ca. 1.5-1.9 cm apart on the vessel body

NON-PLASTICS AND PASTE: Grog

RIM AND LIP FORM: Everted rim and a rounded lip

CORE COLOR: B (fired and cooled in a low oxygen or reducing environment)

INTERIOR SURFACE COLOR: Very dark grayish-brown

EXTERIOR SURFACE COLOR: Very dark grayish-brown; fire clouds on the vessel body

WALL THICKNESS (IN MM): Rim, 4.9 mm

INTERIOR SURFACE TREATMENT:

Smoothed

EXTERIOR SURFACE TREATMENT: Burnished

HEIGHT (IN CM): 12.6+

ORIFICE DIAMETER (IN CM): 24.7

DIAMETER AT BOTTOM OF RIM OR NECK (IN CM): 25.1

BASE DIAMETER (IN CM) AND SHAPE OF BASE: N/A; base section is missing

ESTIMATED VOLUME (IN LITERS): 2.5+

DECORATION (INCLUDING MOTIF AND ELEMENTS WHEN APPARENT): The upper rim panel of the vessel is plain, as is the vessel body, but there are two distinct engraved motifs on the lower panel, each repeated only one time on the vessel. The first consists of narrow concentric semi-circular zones filled with either hatched or cross hatched engraved lines (Figure 20). A portion of a single semi-circular engraved line is present between the hatched and cross hatched zones. The second engraved motif begins next to the first and has three closely-spaced slanted scroll lines that begin at two closely-spaced vertical curvilinear engraved lines (Figure 20).

PIGMENT USE AND LOCATION ON VESSEL: None

TYPE AND VARIETY (IF KNOWN): Unidentified fine ware

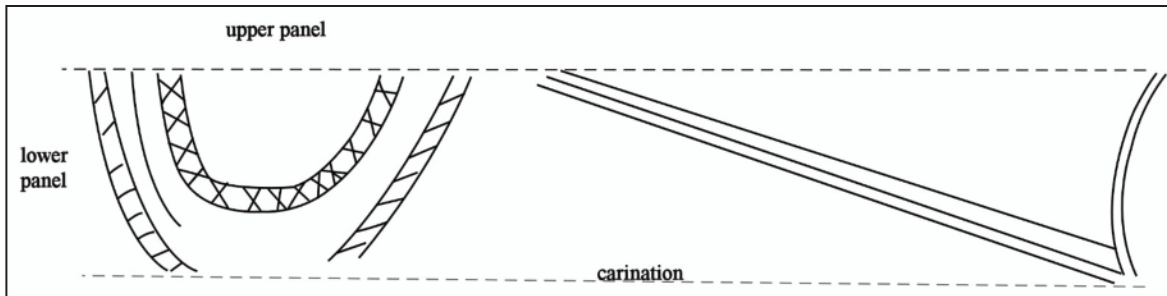


Figure 20. Engraved compound bowl from the Oil Field Road site.

Walker County Sites

41WA47

Radiocarbon-dated archeological components at 41WA47 in Huntsville State Park in the San Jacinto River basin have aboriginal ceramic vessel sherds (n=266). The earliest component has calibrated (1 sigma) radiocarbon dates that range from A.D. 130-900, falling squarely in the Woodland period, while the other two dates indicate use of the site also between A.D. 1000-1030 and A.D. 1460-1630 (Greaves 2002:Table 5-5). The Woodland period ceramic sherds at the site are from sandy paste Goose Creek Plain, *var. unspecified* (n=253) and Goose Creek Incised (n=5) vessels; one sandy paste sherd has lip notching (Greaves 2002:Figure 5-13b), a common Goose Creek decorative element. The sherds (n=7) from the later Late Prehistoric components are tempered either with shell, burned bone, or grog. These particular sherds have incised and brushed decorative elements (Greaves 2002:Table 5-12), and are likely to have come from vessels made by East Texas Caddo potters see Greaves 2002:76).

41WA97

Test excavations at 41WA97 in the San Jacinto River basin in the Sam Houston National Forest recovered a small sample of ceramic sherds (n=28) in association with Gary dart points (Boyd and Howard 1988). The ceramic sherds are from vessels with a sandy paste and no temper, and include rim and body sherds from Goose Creek Plain (n=26), Goose Creek Incised (n=1), and one sandy paste sherd with "possible round and arcuate punctations" (Boyd and Howard 1988:17). The Goose Creek Incised rim sherd has lip notches along with incised diagonal lines offset from a horizontal incised line; Boyd and Howard (1988:18) note that this rim has "two possible punctations...located near the intersection of the horizontal and diagonal lines."

Derrick Adams (41WA100)

Moore (1990) reports the occurrence of grog-tempered Caddo ceramic sherds at the Derrick Adams site (41WA100). The sherds have punctated and incised-punctated decorative elements, and are likely from vessels made by East Texas Caddo potters in pre-A.D. 1200 times.

41WA105

At 41WA105 in Huntsville State Park, 48 ceramic sherds have been recovered in work reported by Davis et al. (1994). More than 72 percent of the sherds are from Goose Creek Plain, *var. unspecified* vessels, and these sherds came from as deep as 150 cm below surface in the archeological deposits, and are the earliest ceramics in use at the site. The remainder of the sherds are from grog-tempered or bone-tempered vessels of ancestral Caddo manufacture; one body sherd has parallel engraved lines (Davis et al. 1994:96). They are likely associated with the one recovered Perdiz arrow point in the chipped stone tool assemblage, while the Goose Creek Plain ceramics are from a Woodland period Mossy Grove occupation with Gary and Kent dart points.

41WA185

Radiocarbon-dated archeological deposits at 41WA185 indicate that there are two ceramic-bearing components at the site, one dated between A.D. 590-895 (1 sigma calibration) and A.D. 1310-1445 (1 sigma calibration) (Gadus and Fields 1997). The ceramic sherds (n=18) from the earlier deposits are from Goose Creek Plain vessels with no temper or sand temper (Gadus and Fields 1997:10). The ceramic sherds (n=27) from the later component are likely from vessels manufactured in the Caddo area of East Texas given the occurrence of sherds from at least three different decorated vessels, and these sherds are tempered with grog or bone. Several of these sherds are from decorated vessels, including sherds from Bullard Brushed vessels with brushed-punctated or

brushed elements (see Gadus and Fields 1997:Figure 4), consistent with the 14th and 15th century A.D. radiocarbon dates from the site, and three sherds “with single or two parallel engraved/incised lines” (Gadus and Fields 1997:10).

Summary and Conclusions

The Strawberry Hill site (41SJ160) is a Mossy Grove culture site on Winters Bayou in the Big Thicket area of the Trinity River basin in Southeast Texas. The site was excavated by Texas State Department of Highways and Public Transportation, and a large assemblage of both ceramic and lithic artifacts were recovered in the work (Keller and Weir 1979). Of particular interest for this study was the recovery of a considerable sample of Goose Creek Plain ceramic vessel sherds, as well as sherds from ancestral Caddo tempered vessels likely made by potters in East Texas after ca. A.D. 900.

The work reported by Keller and Weir (1979:37) concluded that the site “is a small multi-component site that was probably geared to the exploitation of some particular resource or group of resources.” The first of the two principal components at the site dates to the Woodland period (ca. 500 B.C.-A.D. 800) and has Gary and Kent dart points and sandy paste Goose Creek Plain ceramics, while the second component dates after ca. A.D. 900 and has Catahoula and Colbert arrow points, sandy paste ceramic vessel sherds, and ancestral Caddo tempered (i.e., grog, grog-bone, and bone-tempered) ceramic vessel sherds.

The adoption and use of sandy paste Goose Creek Plain pottery by Woodland period hunter-gatherer

foragers in eastern and southeastern Texas was apparently a better way to cook foods than the hot rock cooking/stone boiling in hide-lined pits or basketry of earlier times because stews/broths could instead be cooked and simmered in ceramic vessels. Traditional and new food stuffs could be prepared in ways that were more effective, probably through indirect cooking as there is not much evidence of sooting or spalling on Goose Creek pottery, and probably also “to maximize the food value of what...[Mossy Grove culture peoples] were cooking, by leaving it in the stew pot instead of vulnerable to partial loss over open flames” (Anderson 2005:205). The introduction of this new cooking technology after ca. 2500 years ago in Southeast and East Texas was not apparently associated with the use of any agricultural domesticate or the simmering of starchy foods; only after ca. A.D. 800, in East Texas, were domesticated plant foods beginning to be prepared with a cooking technology where foods were prepared in ceramic vessels that were set directly over or in fire.

Sandy paste pottery is some of the earliest pottery made and used by Native Americans in East Texas and Southeast Texas. The earliest pottery in these regions – Tchefuncte pottery – may date as early as 2500 years ago, if not several hundred years earlier (see Webb et al. 1969; Hays and Weinstein 2010). 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

Table 19. Dated sites in eastern Texas and western 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 (Tallow Grove, Naconiche Creek, Boyette)	2230-1810 B.P.*	Perttula 2008
41RK222	2150-1550 B.P.	Rogers et al. 2001
41PK248	2030-1060 B.P.**	Mike Wilder, 2007 personal communication; Willis 2007; Perttula 2007
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 A.D. 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

Texas; the presence of Marksville Stamped sherds at Mossy Grove sites such as 41PK21 confirms the early end of the estimated age of Mossy Grove ceramics. More recent dating of archeological components with Goose Creek Plain sandy paste pottery indicates that this distinctive plain ware was made beginning about and after 2500 years ago. Table 19 lists a range of these dated sites with sandy paste pottery – 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.

These dated sites range as late as ca. A.D. 900, 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. Based on the Table 19 radiocarbon and OSL-dated summary of sites with Goose Creek Plain sherds and the presumed timing in the adoption of arrow points, then, the earliest Mossy Grove sandy paste ceramic assemblage could date conservatively to anywhere from ca. 2470-1250 years ago in the region. However, there appears to be little question that the earlier Woodland period archeological deposits in the region that have Goose Creek Plain sandy paste pottery and Gary and Kent dart points date to the earlier part of the Mossy Grove culture, and are affiliated with both inland Southeast and East Texas aboriginal groups, while later post-A.D. 800-900 Mossy Grove components have a series of different associated arrow point forms (such as Alba, Perdiz, and Bassett) as well as grog or grog-bone-tempered ceramics from vessels that primarily originated among Caddo potters in East Texas or from potters living along the upper Texas coast.

In the sandy paste pottery assemblages from Lake Naconiche in East Texas (Pertulla 2002, 2008), including the Tallow Grove (41NA231), Naconiche

Creek (41NA236), and Boyette (41NA285) sites – otherwise dominated by plain vessels, as are all Mossy Grove sites – there are a number of lip notch-decorated vessel rims. These distinctive rims from Goose Creek Plain vessels come from archeological deposits dated from cal. 2230-1985 B.P. and cal. 2075-1830 B.P. at two sites at Lake Naconiche. Consequently, lip notched sandy paste vessel rims, herein identified as Goose Creek Plain, *var. Burris*, may thus be an excellent horizon marker for the period between 2230-1830 years ago, should these dates be independently verified in future Mossy Grove culture ceramic analyses.

Including the Strawberry Hill site ceramic assemblage, the broad comparative analysis of Mossy Grove culture ceramics in the Conroe-Livingston area of Southeast Texas (see Figure 9), including 24 sites in Montgomery, Polk, San Jacinto, and Walker counties, comprises 15,214 ceramic vessel sherds, seven vessel sections, and three more or less whole vessels, as discussed above. The largest ceramic vessel sherd assemblages are from the Burris 1 (41PK88) (n=6,042), Jones Hill (41PK8) (n=2,226), Strawberry Hill (41SJ160) (n=1,830), 41MQ6 (n=1,212), Houston (41SJ19) (n=1,077), and Burris 2 (41PK89) (n=468) sites, and these assemblages are employed for comparisons with each other in terms of paste and temper characteristics and decorative methods and elements.

The sites are readily divided into two groups, those where sandy paste Goose Creek Plain and decorated vessel sherds comprise more than 92 percent of assemblages (Group I) or less than 80 percent of assemblages (Group II in Table 20). Conversely, these same two groups of assemblages have significantly different proportions of tempered ancestral Caddo ceramics, especially plain or decorated sherds from grog-tempered and grog-tempered-sandy paste vessels: in Group I sites, grog- and grog-tempered-sandy paste sherds comprise only between 2.7-4.5 percent of the assemblages, while in

Table 20. Paste and temper characteristics of Southeast Texas Mossy Grove sites (in percent).

Sites	SP	G	G-SP	G-B	G-H	B/B-SP	N
Group I							
41SJ19	95.5	2.7	0	0	0	1.8	1071
41PK8	94.0	4.1	0.4	0.5	0	1.0	2226
41MQ6	92.8	3.6	0.2	0.4	0	3.0	1212
Group II							
41SJ160	79.8	9.1	7.8	0.7	2.0	0.5	1830
41PK88	77.6	16.4	0.5	3.2	0	2.3	6042
41PK89	72.8	19.5	0	3.2	0	4.5	468

Group II sites, the proportion is 16.9-19.5 percent. The Strawberry Hill site is one of the Group II assemblages. Grog-bone-tempered vessel sherds are also more abundant in Group II assemblages.

The occurrence of tempered ancestral Caddo tempered ceramic vessel sherds is evidence that each of the six sites in Groups I and II were occupied after ca. A.D. 900, when Caddo ceramic vessels began to be made by East Texas potters, and also began to be traded or exchanged with local Southeast Texas groups. The low proportions of tempered wares in the Group I sites suggests the principal Mossy Grove occupations there took place between ca. A.D. 100-

900. The Group II occupations have both significant pre- and post-A.D. 900 periods of use, and the range of decorated ancestral Caddo ceramic vessel sherds attests to substantial use of these sites after ca. A.D. 1400, and as late as the late 17th-early 18th century at the Burris 1 site.

In the Group I sites, there are very low proportions of sherds with decorative elements, ranging in the sandy paste sherds from a trace to 1.7 percent of the sherd assemblages, and only 0.4-1.6 percent of the assemblages have tempered decorated sherds (Table 21). In the Group II sites, the proportion of decorated

Table 21. Decorative methods represented in sandy paste and ancestral Caddo tempered vessel sherds from selected Southeast Texas Mossy Grove sites.

Decorative methods	SJ19	PK8	MQ6	SJ160	PK88	PK89
Sandy Paste						
Goose Creek Brushed	0	0	0	0	0	1
Goose Creek Incised	5	1	2	4	19	4
Goose Creek Incised- Punctated	0	0	0	0	1	4
Goose Creek Plain, <i>var. Burris</i>	0	0	3	2	9	0
Goose Creek Punctated	5	0	4	0	5	3
Goose Creek Red-Filmed	0	0	12	0	2	0
Ancestral Caddo						
tempered						
Appliqued	0	1	0	0	1	0
Brushed	8	4	0	2	150	16
Brushed-Incised	0	0	1	1	68	7
Brushed-Punctated	0	0	0	0	7	0
Incised	2	2	1	36	278	15
Incised-Appliqued	0	0	0	0	1	0
Incised-Punctated	0	0	4	0	38	1
Lip Notched	0	0	0	1	0	0
Pinched-Brushed	0	0	0	0	2	0
Punctated	5	2	0	4	59	4
Trailed	0	0	0	0	3	0
Engraved	2	0	2	2	25	1
Engraved-Brushed	0	0	0	0	0	1
Engraved-Punctated	0	0	0	0	6	0
Red-Slipped	0	0	0	1	2	0
Trailed	0	0	0	0	1	0
Rockport	0	0	1	0	0	0
Totals	27	10	30	53	677	57

sandy paste sherds remains low (0.3-2.6 percent), but the proportion of sherds in the assemblage that are from decorated ancestral Caddo tempered wares ranges from 2.6 percent at the Strawberry Hill site to 10.6 percent in the Burris 1 assemblage (Table 21).

In the sandy paste Goose Creek wares in the Group I and II sites, only Goose Creek Incised sherds are present in both groups (see Table 21). They are much more common in the Group II decorated sandy paste sherds, however, representing 50 percent of the decorated sherd sample (n=54 sherds) compared to 25 percent in the Group I decorated sherd assemblage (n=32). In Group I, the most common decorated sandy paste sherds have red-filmed (38 percent) and punctated (28 percent) elements, while lip notched (20 percent), incised-punctated (9 percent) and brushed (2 percent) sherds are more abundant in the Group II assemblage; Goose Creek Red-Filmed sherds only account for 4 percent of the Group II sandy paste decorated sherds.

As mentioned above, decorated ancestral Caddo tempered vessel sherds are present in all six of the Group I and II sites, but in different proportions by component. In two of the three Group I components (41MQ6 and 41SJ19), ancestral Caddo decorated vessel sherds account for between 26.7-63 percent of the decorated sherds in their assemblages; at 41PK8, 90 percent of the decorated sherds in the assemblage are from ancestral Caddo vessels (see Table 21). In each of the Group II Mossy Grove culture sites, the proportion of decorated sherds from ancestral Caddo tempered wares ranges from 79-95 percent. In Group I, most of the decorated Caddo vessel sherds (n=25), although uncommon, have brushed (48 percent), punctated (28 percent), and incised-punctated (16 percent) decorative elements. In Group II assemblages, where decorated sherds from Caddo sites are relatively abundant (n=694 sherds), especially at the Burris 1 site, sherds from incised (47 percent), brushed (24 percent), brushed-incised (11 percent), and punctated (10 percent) vessels are well represented (see Table 21). Given the common occurrence of sherds from tempered Caddo brushed vessels in both Groups I and II, the post-A.D. 1200 use of these Mossy Grove sites was considerable, given that the manufacture and use of brushed vessels is a feature of post-A.D. 1200 Caddo ceramic traditions in much of East Texas (see Perttula 2013, 2015). These ancestral Caddo vessels most likely originated in the Neches-Angelina river basins in East Texas.

Decorated sandy paste ceramics in these Mossy Grove culture sites in Montgomery, Polk, and San Jacinto counties include the following types: Goose Creek Brushed, Goose Creek Incised, Goose Creek Incised-Punctated, Goose Creek Plain, *var. Burris*, Goose Creek Punctated, and Goose Creek Red

Filmed (Table 22). Goose Creek Incised and Goose Creek Punctated types are best represented in sites in both Groups I and II, followed by lip notched Goose Creek Plain, *var. Burris*. Goose Creek Brushed is present only in post-A.D. 1200 contexts at the Burris 1 site, and this style of vessel decoration was likely adopted as a decorative style by Mossy Grove potters based on ancestral Caddo Bullard Brushed vessels they had seen and used in Mossy Grove communities. Goose Creek Punctated sherds are present only in Group II sites. Aten (1983:Figure 14.5) suggests that all of the decorated sandy paste vessel sherds in these Mossy Grove sites postdate ca. A.D. 900-1000, and they correlate in time with the introduction of Caddo ceramic wares. Aten (1983:295) also notes that Caddo ceramics in the Conroe-Livingston area have a "prominent frequency."

Based on the identification of a number of defined ceramic types (cf. Suhm and Jelks 1962), the ancestral Caddo tempered wares from the Group I and II sites can be sorted into types from three different chronological periods: pre-A.D. 1200, Late Caddo period (ca. A.D. 1400-1680), and Historic Caddo period (ca. A.D. 1680-1730) (see Table 22). The suite of Early Caddo period types is most abundant at the Burris 1 site, but there are examples of Holly Fine Engraved and Kiam Incised from 41MQ6 and Strawberry Hill. The range of defined types (see Table 22) are associated with Early Caddo period communities on the Neches River, likely the large Caddo mound center and village at the George C. Davis site (41CE19) (Perttula 2013; Stokes and Woodring 1981).

Late Caddo period utility ware and fine ware vessel sherds are more abundant in the Group II sites, but Bullard Brushed vessels are present in each of the Group I and II components (see Table 22). The Rockport wares at two Mossy Grove sites likely date to the same post-A.D. 1400 interval. In general, the identified ceramic types point to interrelationships between Mossy Grove peoples and Frankston phase Caddo communities in the upper and middle Neches River basin in East Texas. The presence of Ripley Engraved sherds from the Burris 1 site also suggests contacts between Mossy Grove peoples and Caddo groups affiliated with the Titus phase. These Caddo groups lived in the Big Cypress and mid-Sabine River basins (Perttula 2012:Figure 13-1).

The Historic Caddo ceramic types in the Mossy Grove sites are confined to the Burris 1 and Houston sites (see Table 22). The utility wares include Foster Trailed-Incised, *var. Moore* and Spradley Brushed-Incised types, and their occurrence suggest wide-ranging contacts between Mossy Grove groups and ancestral Hasinai Caddo and Kadodachado communities in the Neches-Angelina (e.g., Spradley Brushed-Incised) and the Red River (e.g., Foster

Table 22. Identified ceramic types in the Mossy Grove ceramic assemblages used for comparative analysis.

Types	SJ19	PK8	MQ6		SJ160	PK88	PK89
Sandy paste							
Goose Creek Brushed							x
Goose Creek Incised	x	x	x		x	x	x
Goose Creek Incised-Punctated					x	x	
Goose Creek Plain, <i>var. Burris</i>			x		x	x	
Goose Creek Punctated	x		x			x	x
Goose Creek Plain, <i>var. unspecified</i>	x	x	x		x	x	x
Goose Creek Red-Filmed			x			x	
Ancestral Caddo							
tempered							
pre-AD 1200							
Davis Incised						x	
Dunkin Incised						x	
Holly Fine Engraved					x	x	
Kiam Incised			x				
Weches Fingernail-Impressed						x	
Late Caddo							
Bullard Brushed	x	x	x		x	x	x
Maydelle Incised					x	x	x
Pease Brushed-Incised					x		
Poynor Engraved						x	x
Ripley Engraved						x	
Historic Caddo							
Foster Trailed-Incised						x	
Keno Trailed						x	
Patton Engraved						x	
Spradley Brushed-Incised					x	x	
Rockport ware			x			x	

x=present

Trailed-Incised) basins, respectively. The same can be said for the fine wares, as Patton Engraved occurs in Hasinai Caddo communities on the Neches-Angelina, and Keno Trailed vessels are most common in the Red River basin among Kadohadacho communities (see Perttula 2013).

Acknowledgments

I would like to thank George Avery of Stephen F. Austin State University for facilitating access to the collections from the Strawberry Hill site, while Marybeth Tomka and Lauren Bussiere made the ceramic sherd collections and vessels from sites in Montgomery, Polk, and San Jacinto counties in the Texas Archeological Research Laboratory available

for study. Thanks also to Dub Crook for his editing of this manuscript. Lance Trask prepared the figures for this publication.

References Cited

- Anderson, David G.
2005 Why California? The Relevance of California Archaeology and Ethnography to Eastern Woodlands Prehistory. In *Engaged Anthropology: Research Essays on North American Archaeology, Ethnobotany, and Museology, Papers in Honor of Richard I. Ford*, edited by Michele Hegmon and B. Sunday Eiselt, pp. 200-226. Anthropological Papers No. 94. Museum of Anthropology, University of Michigan, Ann Arbor.
- Aten, Lawrence E.
1983 *Indians of the Upper Texas Coast*. Academic Press, New York.
- Aten, Lawrence E. and Charles N. Bollich
2002 *Late Holocene Settlement in the Taylor Bayou Drainage Basin: Test Excavations at the Gaulding Site (41JF27), Jefferson County, Texas*. Studies in Archeology 40, Texas Archeological Research Laboratory, The University of Texas at Austin, and Special Publication No. 4, Texas Archeological Society, San Antonio.
- Black, William Marshall
1991 On the Shape of a Goose Creek Pot. *Journal of the Houston Archeological Society* 99:14-15.
- Boyd, Douglas K. and Margaret Ann Howard
1988 *Archeological Testing at 41WA97, Sam Houston National Forest, Walker County, Texas*. Technical reports No. 3. Prewitt and Associates, Inc., Austin.
- Brown, Ian W.
1998 *Decorated Pottery of the Lower Mississippi Valley: A Sorting Manual*. Mississippi Archaeological Association and Mississippi Department of Archives and History, Jackson.
- Davis, Michael W., Jan Guy, Marybeth F. Tomka, and Daniel J. Crouch
1994 *Archeological Investigations at Huntsville Fish Hatchery, Walker County, Texas*. Cultural Resources Program, Texas Parks and Wildlife Department, Austin.
- Diggs, George M., Jr., Barney L. Lipscomb, Monique D. Reed, and Robert J. O'Kennon
2006 *Illustrated Flora of East Texas, Volume One: Introduction, Pteridophytes, Gymnosperms, and Monocotyledons*. Sida 26, Botanical Miscellany, Botanical Research Institute of Texas, Fort Worth, and Center for Environmental Studies and Department of Biology, Austin College, Sherman, Texas.
- Ellis, Linda W.
2013 Woodland Ceramics in East Texas and a Case Study of Mill Creek Culture Ceramics. *Bulletin of the Texas Archeological Society* 84:137-180.
- Ensor, H. Blaine and David L. Carlson
1988 *The Crawford Site, 41PK69, Central Trinity River Uplands, Polk County, Texas*. Report No. 4. Contract Reports in Archaeology, Texas State Department of Highways and Public Transportation, Highway Design Division, Austin.
- Ensor, H. Blaine and David L. Carlson (editors)
1991 *Alabonson Road: Early Ceramic Period Adaptation to the Inland Coastal Prairie Zone, Harris County, Southeast Texas*. Reports of Investigations No. 8. Archeological Research Laboratory, Texas A&M University, College Station.
- Gadus, E. Frances and Ross C. Fields
1997 *Test Excavations at 41WA185, Walker County, Texas*. Technical Reports, No. 25. Prewitt and Associates, Inc., Austin.
- Greaves, Russell D.
2002 *Archeological Survey of Huntsville State Park and Excavations in 41WA47, Walker County, Texas*. Archeological Survey Report, No. 327. Center for Archaeological Research, The University of Texas at San Antonio.
- Hays, Christopher T. and Richard A. Weinstein
2004 Early Pottery at Poverty Point. In *Early Pottery: Technology, Function, Style, and Interaction in the Lower Southeast*, edited by R. Saunders and C. T. Hays, pp. 150-168. University of Alabama Press, Tuscaloosa.
- 2010 Tchefuncte and Early Woodland. In *Archaeology of Louisiana*, edited by Mark A. Rees, pp. 97-119. Louisiana State University Press, Baton Rouge.

- Johnson, LeRoy, Jr.
1992 Stealing Secrets from Dead Potters: A Plea for Painstaking Ceramic Sleuthing. *APR News & Views* 4(1):16-19. Department of Archeological Planning & Review, Texas Historical Commission, Austin.
- Keller, John E. and Frank A Weir
1979 *The Strawberry Hill Site*. Publications in Archaeology, Report No. 13. Highway Design Division, Texas State Department of Highways and Public Transportation, Austin.
- Marceaux, P. Shawn
2011 The Archaeology and Ethnohistory of the Hasinai Caddo: Material Culture and the Course of European Contact. Ph.D. dissertation, Department of Anthropology, The University of Texas at Austin.
- Martin, William A., Timothy K. Perttula, Nancy A. Kenmotsu, Linda Roark, Jami Wise, James E. Bruseth, John E. Ippolito, Velicia Hubbard, and Walter Kingsborough
1995 *Cultural Resource Management Planning for the National Forests and Grasslands in Texas*. Cultural Resource Management Report 6. Department of Antiquities Protection, Texas Historical Commission, Austin.
- McClurkan, Burney B.
1967 *Excavations at Livingston Reservoir – 1965 Season*. Texas Archeological Salvage Project, Austin.
- 1968 *Livingston Reservoir, 1965-66: Late Archaic and Neo-American Occupations*. Papers No. 12. Texas Archeological Salvage Project, The University of Texas at Austin.
- Moore, Roger G.
1995 The Mossy Grove Model of Long-Term Forager-Collector Adaptations in Inland Southeast Texas. Ph.D. dissertation, Department of Anthropology, Rice University, Houston, Texas.
- Moore, William. E.
1990 The Derrick Adams Site (41WA100), A Late Prehistoric Site in Walker County, Texas. *Journal of the Houston Archeological Society* 96:11-14.
- Moore, William E. and John Dockall
1988 Additional Artifacts from the Strawberry Hill Site (41SJ160) in San Jacinto County, Texas. *Journal of the Houston Archeological Society* 91:11-15.
- Perttula, Timothy K.
2007 Woodland or Mossy Grove Ceramics from 41PK248, Polk County, Texas. In *Archeological Testing at Site 41PK248 on the Alabama-Coushatta Indian Reservation, Polk County, Texas*, by Mark D. Willis, pp. C-1 to C-6. Blanton & Associates, Inc., Austin.
- 2011 The Ceramic Artifacts from the Lang Pasture Site (41AN38) and the Place of the Site within an Upper Neches River Basin Caddo Ceramic Tradition. In *Archeological Investigations at the Lang Pasture Site (41AN38) in the Upper Neches River Basin of East Texas*, assembled and edited by Timothy K. Perttula, David B. Kelley, and Robert A. Ricklis, pp. 145-320. Archeological Studies Program Report No. 129, Texas Department of Transportation, Environmental Affairs Division, Austin.
- 2012 The Character of Fifteenth-to Seventeenth-Century Caddo Communities in the Big Cypress Creek Basin of Northeast Texas. In *The Archaeology of the Caddo*, edited by Timothy K. Perttula and Chester P. Walker, pp. 363-410. University of Nebraska Press, Lincoln.
- 2013 Caddo Ceramics in East Texas. *Bulletin of the Texas Archeological Society* 84:181-212.
- 2014 Analysis of the Prehistoric Ceramic Sherds from 41MQ197, Montgomery County, Texas. MS on file, Archeological & Environmental Consultants, LLC, Austin.
- 2015 East Texas Caddo Ceramic Sherd Database. *Journal of Northeast Texas Archaeology* 51:1-46.
- Perttula, Timothy K. (editor)
2002 *Archeological Investigations at the Proposed Lake Naconiche, Nacogdoches County, Texas*. 2 Vols. Report of Investigations No. 42. Archeological and Environmental Consultants, LLC, Austin.

- 2005 *Archeological Investigations at the Pilgrim's Pride Site (41CP304), a Titus Phase Community in the Big Cypress Creek Basin, Camp County, Texas*. 2 Vols. Report of Investigations No. 30. Archeological & Environmental Consultants, LLC, Austin.
- 2008 *Lake Naconiche Archeology, Nacogdoches County, Texas: Results of the Data Recovery Excavations at Five Prehistoric Archeological Sites*. 2 Vols. Report of Investigations No. 60. Archeological & Environmental Consultants, LLC, Austin.
- Rice, Prudence M.
1987 *Pottery Analysis: A Sourcebook*. University of Chicago Press, Chicago.
- Ricklis, Robert A.
2004 The Archeology of the Native American Occupation of Southeast Texas. In *The Prehistory of Texas*, edited by Timothy K. Pertulla, pp. 181-202. Texas A&M University Press, College Station.
- 2013 The Rockport Ware Pottery of the Central Texas Coast: Form, Technology, Style, and Ethnic Affiliation. *Bulletin of the Texas Archeological Society* 84:85-111.
- Rogers, Robert, Michael A. Nash, and Timothy K. Pertulla
2001 *Excavations at the Herman Bellew Site (41RK222), Rusk County, Texas*. Document No. 000021. PBS&J, Austin.
- Saunders, Rebecca and Christopher T. Hays
2004 Introduction: Themes in Early Pottery Research. In *Early Pottery: Technology, Function, Style, and Interaction in the Lower Southeast*, edited by Rebecca Saunders and Christopher T. Hays, pp. 1-22. University of Alabama Press, Tuscaloosa.
- Schambach, Frank F. and James E. Miller
1984 A Description and Analysis of the Ceramics. In *Cedar Grove: An Interdisciplinary Investigation of a Late Caddo Farmstead in the Red River Valley*, edited by Neal L. Trubowitz, pp. 109-170. Research Series No. 23. Arkansas Archeological Survey, Fayetteville.
- Shafer, Harry J.
1968 *Archeological Investigations in the San Jacinto River Basin, Montgomery County, Texas*. Papers No. 13. Texas Archeological Salvage Project, Austin.
- Stokes, Janelle and Joe Woodring
1981 Native-Made Artifacts of Clay. In *Archeological Investigations at the George C. Davis Site, Cherokee County, Texas: Summers of 1979 and 1980*, edited by Dee Ann Story, pp. 135-238. Occasional Paper No. 1. Texas Archeological Research Laboratory, The University of Texas at Austin.
- Story, Dee Ann
1990 Cultural History of the Native Americans. In *The Archeology and Bioarcheology of the Gulf Coastal Plain*, by Dee Ann Story, Jan A. Guy, Barabara A. Burnett, Martha D. Freeman, Jerome C. Rose, D. Gentry Steele, Ben W. Olive, and Karl J. Reinhard, pp. 163-366. 2 Vols. Research Series No. 38. Arkansas Archeological Survey Research Series, Fayetteville.
- Suhm, Dee Ann and Edward B. Jelks (editors)
1962 *Handbook of Texas Archeology: Type Descriptions*. Special Publication No. 1, Texas Archeological Society, and Bulletin No. 4, Texas Memorial Museum, Austin.
- Teltser, Patrice A.
1993 An Analytic Strategy for Studying Assemblage-Scale Ceramic Variation: A Case Study from Southeast Missouri. *American Antiquity* 58(3):530-543.
- Watson, Geraldine
1979 *Big Thicket Plant Ecology: An Introduction*. Publication Series, No. 5. Big Thicket Museum, Saratoga, Texas.
- Webb, Clarence H., Forrest E. Murphey, Wesley G. Ellis, and H. Roland Green
1969 The Resch Site, 41HS16, Harrison County, Texas. *Bulletin of the Texas Archeological Society* 40:3-106.
- Willis, Mark D.
2007 *Archeological Testing at Site 41PK248 on the Alabama-Coushatta Indian Reservation, Polk County, Texas*. Blanton & Associates, Inc., Austin.