



INDEX OF TEXAS ARCHAEOLOGY

Open Access Gray Literature from the Lone Star State

Volume 2017

Article 108


2017

A Cultural Resources Survey for a 17.5-acre Tract within the Lake Houston Wilderness Park, Montgomery County, Texas

Douglas G. Mangum

David Driver

Follow this and additional works at: <https://scholarworks.sfasu.edu/ita>

 Part of the [American Material Culture Commons](#), [Archaeological Anthropology Commons](#), [Environmental Studies Commons](#), [Other American Studies Commons](#), [Other Arts and Humanities Commons](#), [Other History of Art, Architecture, and Archaeology Commons](#), and the [United States History Commons](#)

[Tell us how this article helped you.](#)

Cite this Record

Mangum, Douglas G. and Driver, David (2017) "A Cultural Resources Survey for a 17.5-acre Tract within the Lake Houston Wilderness Park, Montgomery County, Texas," *Index of Texas Archaeology: Open Access Gray Literature from the Lone Star State*: Vol. 2017, Article 108. ISSN: 2475-9333
Available at: <https://scholarworks.sfasu.edu/ita/vol2017/iss1/108>

This Article is brought to you for free and open access by the Center for Regional Heritage Research at SFA ScholarWorks. It has been accepted for inclusion in Index of Texas Archaeology: Open Access Gray Literature from the Lone Star State by an authorized editor of SFA ScholarWorks. For more information, please contact cdsscholarworks@sfasu.edu.

A Cultural Resources Survey for a 17.5-acre Tract within the Lake Houston Wilderness Park, Montgomery County, Texas

Creative Commons License



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).

**A Cultural Resources Survey for a 17.5-acre Tract
within the Lake Houston Wilderness Park,
Montgomery County, Texas**

Texas Antiquities Permit 7125

**By
Douglas G. Mangum M.A.
Principal Investigator**

**with contributions by
David Driver Ph.D.**

MOORE ARCHEOLOGICAL CONSULTING, INC.
HOUSTON'S FIRST ARCHEOLOGY FIRM



**Report of Investigations Number 634
September 2017**

**A Cultural Resources Survey for a 17.5-acre Tract
within the Lake Houston Wilderness Park,
Montgomery County, Texas**

Texas Antiquities Permit 7125
MAC Project Numbers 15-01

**By
Douglas G. Mangum M.A.
Principal Investigator**

**with contributions by
David Driver Ph.D.**

Prepared for
Berg-Oliver Associates, Inc.

Moore Archeological Consulting, Inc.
Houston, Texas
Report of Investigations Number 634

September 2017

ABSTRACT

In January of 2015, Moore Archeological Consulting, Inc., conducted an intensive pedestrian cultural resource investigation of an approximately 17.5-acre tract and an associated water line within the Lake Houston Wilderness Park in southeast Montgomery County, Texas. The objectives of the investigation were to locate and identify cultural materials, sites, or historic properties within the proposed impact area, and to prepare management recommendations regarding any identified resources. The investigations were conducted for Berg-Oliver Associates under Texas Antiquities Permit Number 7156. An intensive pedestrian field survey of the current project area was conducted, and included both surface and subsurface (shovel test) examination. A total of 18 shovel tests were excavated. No cultural materials were recovered from any of the shovel tests. Consequently, no further archeological investigations are recommended. In the event that archeological deposits or features should be encountered during construction, work should cease in the immediate vicinity and the Archeology Division of the Texas Historical Commission contacted for further consultation.

TABLE OF CONTENTS

Abstract	ii
List of Figures	iv
List of Tables	iv
Introduction	1
Environmental Background	6
<i>Soils and Geology</i>	6
<i>Climate</i>	6
<i>Hydrology</i>	6
<i>Flora and Fauna</i>	6
Cultural Background	8
<i>Southeast Texas Culture History</i>	8
<i>Historic Overview</i>	9
Previous Archaeological Investigations	10
Field Methods and Results	12
Recommendations	15
References Cited	16
Appendix A	
<i>Photographs</i>	19
Appendix B	
<i>Shovel Test Log</i>	20

LIST OF FIGURES

Figure 1. Project area in Montgomery County 2

Figure 2. Map of the proposed project area over the Splendora (309555) USGS
Quadrangle Map. 3

Figure 3. Detail of project area over the Splendora (309555) USGS Quadrangle Map. 4

Figure 4. Project area over a 2014 aerial photograph (via Google Earth) 5

Figure 5. Project area with shovel test locations (red squares). 14

LIST OF TABLES

Table 1. Archeological Chronology for Southeast Texas 9

INTRODUCTION

In January of 2015, Moore Archeological Consulting, Inc. (MAC), conducted an intensive pedestrian cultural resource survey investigation of an approximately 17.5-acre (ac.) tract and associated water line in the Lake Houston Wilderness Park in southeast Montgomery County, Texas (Figure 1). The objectives of the investigation were to locate and identify cultural materials, sites, or historic properties within the proposed impact area, and to prepare management recommendations regarding any identified resources. The investigations (MAC PN 15-01) were conducted for Berg-Oliver Associates, Inc. under Texas Antiquities Permit Number 7125.

The proposed project area is a wooded tract depicted on the Splendora (309555), Texas 7.5' United States Geological Survey (USGS) topographic map (Figures 2, 3, and 4). The irregular-shaped tract is located just to the south of FM 1485, and west of Champion Rod and Gun Club Road. Currently constructed facilities on the original 2 ac. tract include an unimproved parking area and pavilion building, with restrooms, a youth training range, and a competitive archery range proposed to finish out the overall construction. This survey was to cover the additional 17.5 ac. constituting the residual un-surveyed portion of the overall 20 ac. archery park along with the 320-meter (m) (1050-foot [f]) water line.

An intensive pedestrian field survey of the current project area was conducted, and included both surface and subsurface (shovel test) examination. A total of 18 shovel tests (STs 1-18) were excavated (Figure 5). The field investigations were conducted by project archeologist, Randy Ferguson and field technician, Rachel Goings. Douglas Mangum served as the project's principal investigator.

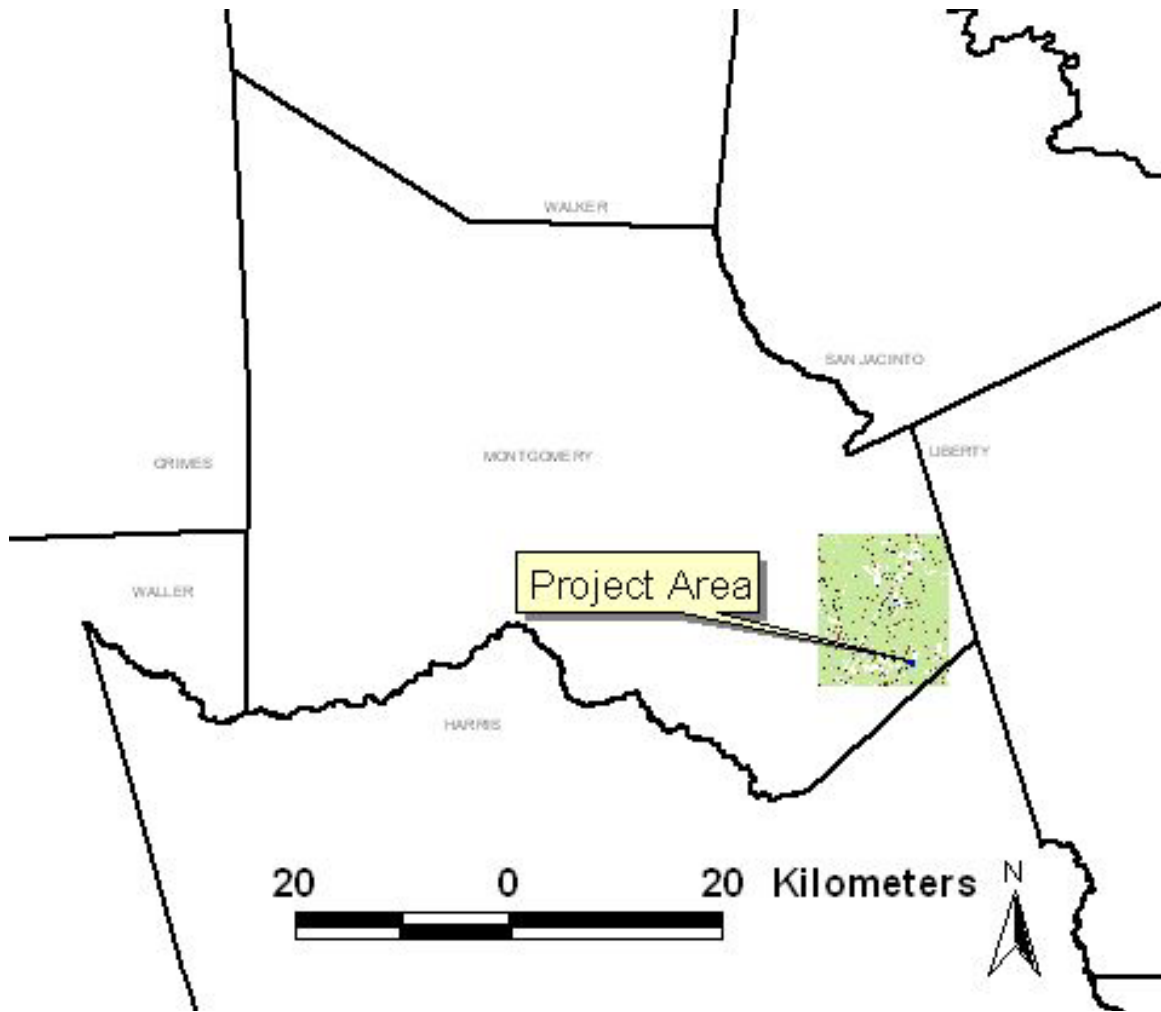


Figure 1. Project Area in Montgomery County



Figure 2. Map of the proposed project area over the Splendor (309555) USGS Quadrangle Map.

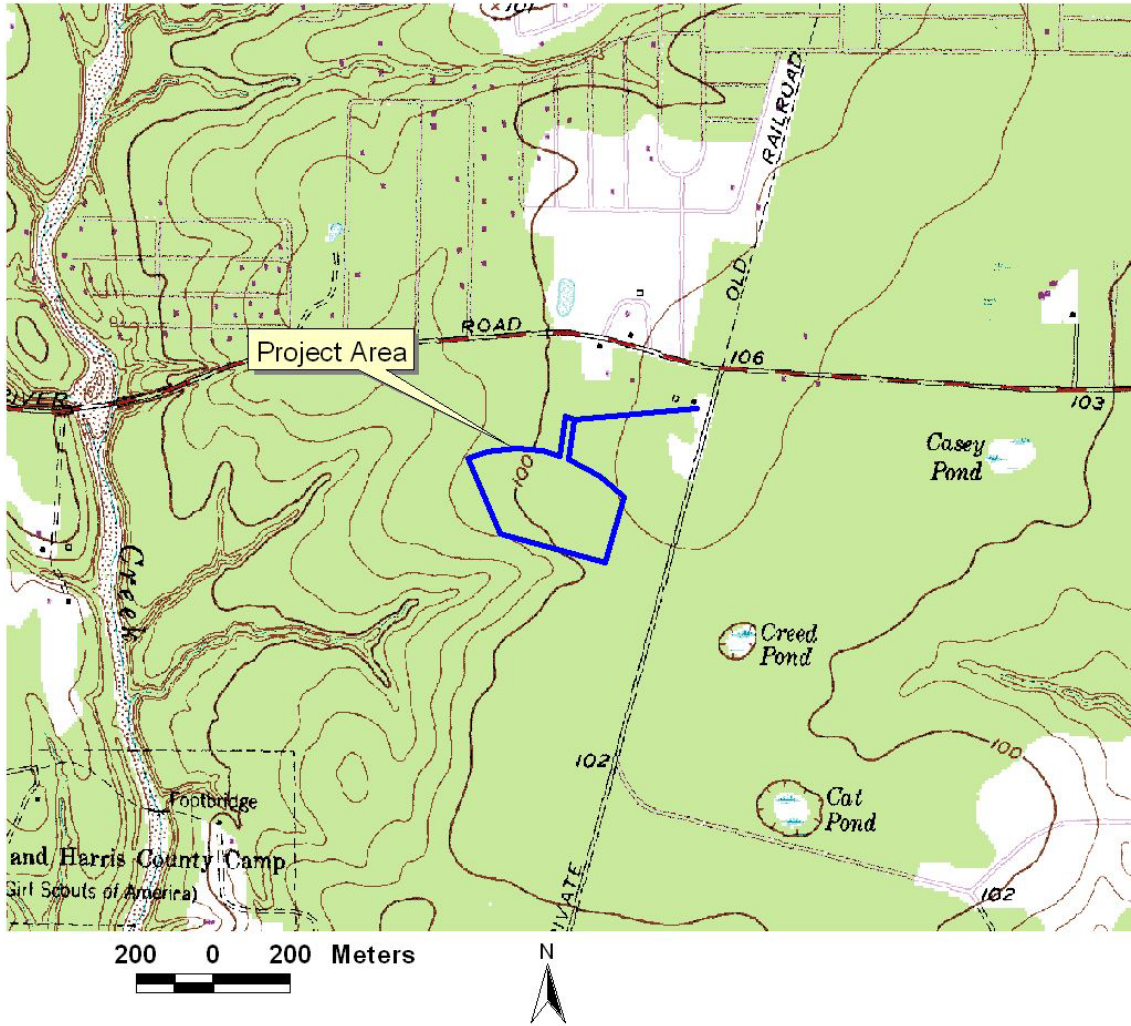


Figure 3. Detail of project area over the Splendora (309555) USGS Quadrangle Map.

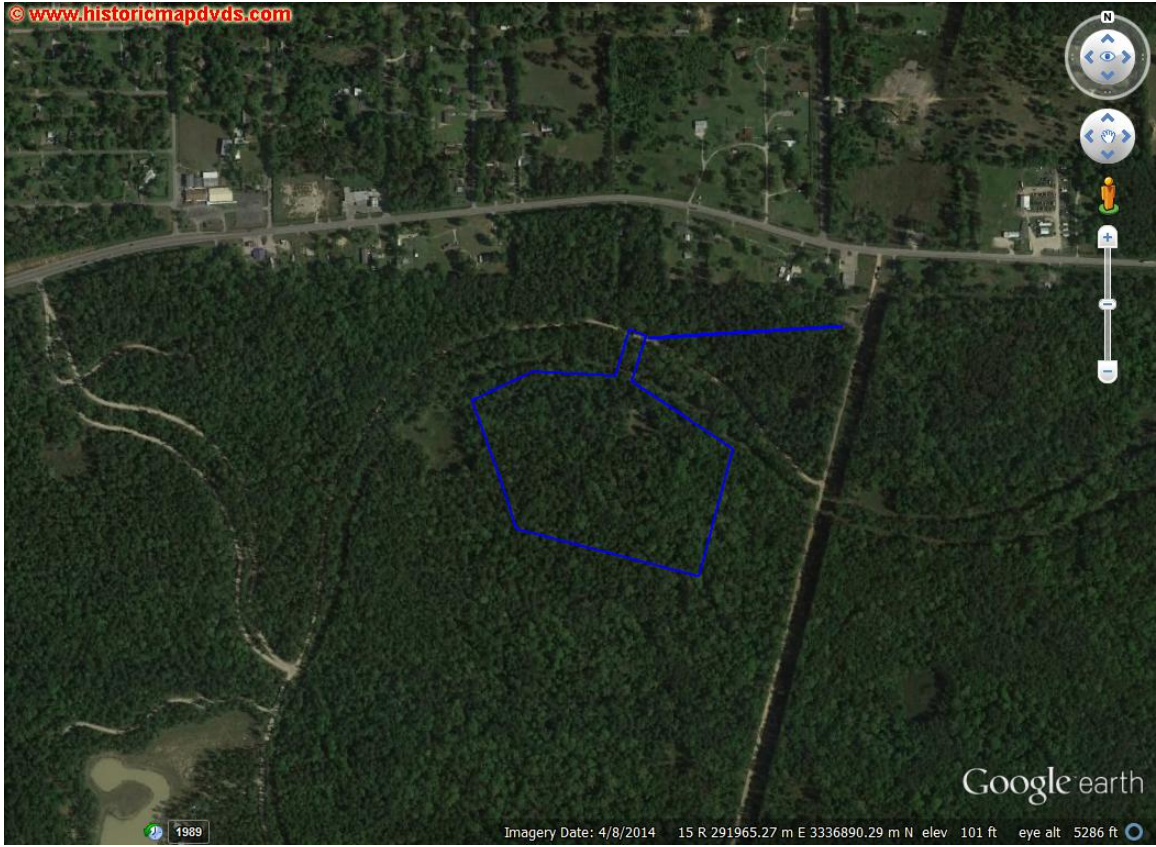


Figure 4. Project area over a 2014 aerial photograph (via Google Earth)

ENVIRONMENTAL BACKGROUND

Soils and Geology

Montgomery County is located within the West Gulf Coastal Plain physiographic province (Hunt 1974). In the Texas region, the surface topography of the plain is characterized by relatively flat topography that dips slightly towards the Gulf of Mexico. Geologically, the project area lies atop the Lissie Formation, a surface outcrop that extends from just east of the Mississippi River in Louisiana, to Kingsville, Texas (Bureau of Economic Geology 1982). The formation was deposited during a series of glacial and interglacial events during the Middle to Late Pleistocene. Extensive riverine downcutting and erosion of the formation occurred during the periods of lower sea levels associated with the Wisconsin glaciation. During the Holocene, after sea levels rose once more, the resulting river valleys filled with alluvial soils, creating broad, level floodplains.

The property is depicted on sheet 78 of the *Soil Survey of Montgomery County, Texas* (McClintock, Jr., et al. 1972). The project tract includes two soil types, Splendora fine sandy loam (Sp) and a small amount of Segno fine sandy loam. Based on the Potential Archeological Liability Mapping (PALM) predictive model developed by Abbott (2001), both the Splendora and Segno soils represent upland loamy ancient (pre-Holocene) alluvia with a low potential for containing deeply buried prehistoric sites. Roughly half of the project area is depicted as *Map Unit 2: Surface Survey Recommended, No Deep Reconnaissance Recommended*, while the other half is shown as *Map Unit 4: No Survey Recommended* (Abbott 2001:156).

Climate

The modern climate of the Montgomery County study area is moderated by the Gulf of Mexico, resulting in mild winters and hot and humid summers (McClintock et al. 1972:67). Summer temperatures average 94°F (34°C), while winter temperatures average 63°F (17°C). Annual precipitation averages 47 inches (119 cm).

Hydrology

The project area is located on the upland edge approximately 1200 m east of Peach Creek. This stream is depicted as a perennial stream on the USGS maps, and is a major tributary of Caney Creek.

Flora and Fauna

Montgomery County lies within the Austroriparian biotic province (Blair 1950:98-101). Not determined by a marked physiographic break, the western boundary of this province is loosely identified by the distribution of pine and hardwood forests on the eastern Gulf coastal plain. The county is situated within the pine-oak subdivision of the Austroriparian province (Tharp 1939). Blair (1950) lists the dominant floral species of the pine-oak forest subdivision as loblolly pine (*Pinus taeda*), yellow pine (*Pinus echinata*), red oak (*Quercus rubra*), post oak (*Quercus stellata*), and blackjack oak (*Quercus marilandica*). Hardwood forests are found on lowlands within the Austroriparian and are characterized by such trees as sweetgum (*Liquidambar styraciflua*), magnolia (*Magnolia grandiflora*), tupelo (*Nyssa sylvatica*), water oak (*Quercus nigra*), and other species of oaks, elms, and ashes, as well as the highly diagnostic Spanish moss (*Tillandsia usneoides*) and palmetto (*Sabal glabra*).

Blair (1950) and Gadus and Howard (1990) identify the following mammals as common within the Austroriparian province: white-tailed deer (*Odocoileus virginianus*), muskrat (*Ondatra zibethicus*), raccoon (*Procyon lotor*), coyote (*Canis latrans*), opossum (*Didelphis virginiana*), *Scalopus aquaticus*, *Pipistrellus subflavus*, *Lasiurus borealis*, *Sciurus niger*, *Sciurus carolinensis*, *Glaucomys volans*, *Geomys breviceps*, *Reithrodonomys fulvescens*, *Peromyscus leucopus*, *Oryzomys palustris*, cotton rat (*Sigmodon hispidus*), packrat (*Neotoma floridana*), eastern cottontail (*Sylvilagus floridanus*), and swamp rabbit (*Sylvilagus aquaticus*). Bison (*Bison bison*) may have been present on nearby grasslands at various times in the past (Gadus and Howard 1990:15). Common land turtles include eastern box turtle (*Terrapene carolina*) and *Terrapene ornata*, while snapping turtle (*Chelydra serpentina*), mud turtle (*Kinosteron* spp.), river cooter (*Chrysemys concinna*) and diamondback terrapin (*Malaclemys terrapin*) comprise common water turtles. Common lizards include *Anolis carolinensis*, *Sceloporus undulatus*, *Leiopisma laterale*, *Eumeces laticeps*, *Cnemidophorus sexlineatus* and *Ophiosaurus ventralis*. Snakes and amphibians are also present in considerable numbers and diversity.

During the field investigation it was observed that the surface of much of the project area has probably been impacted by some prior activity. Based on the appearance of the disturbance, the activity was most likely logging. These observed impacts included significant ruts and areas where soil had been pushed into large piles. There were also numerous stumps in an advanced state of decay that suggested intensive logging in the past.

CULTURAL BACKGROUND

Southeast Texas Culture History

The project area is located within the southeast Texas archaeological region (Patterson 1995; Story et al. 1990). The cultural history of the region extends back at least 12,000 years into the past. A number of researchers have compiled chronological frameworks to describe the cultural histories of the area (Aten 1983; Ensor 1991; Patterson 1995; Shafer et al. 1975; Story et al. 1990). The majority of these divide human occupation into four broad stages, Paleoindian, Archaic/Lithic, Ceramic/Late Prehistoric, and Historic. The stages are based on a proposed sequence of economic strategies as they are revealed through the archaeological and/or historical record. These proposed shifts in dominant lifeways consider cultural, economic, and technological factors in order to provide a heuristic model useful for attempting to understand ancient and early historic populations. While the dates assigned to the period interfaces are based on "absolute" dating methods, they of course represent a generalized time range for the implied cultural evolution. The dates provided in the following discussion will be drawn from Ensor (1991) and are presented in Table 1.

The earliest period of occupation in southeast Texas is identified as the Paleoindian stage. Based on the earliest securely dated appearance of populations in the New World, this stage begins around 11,000-10,000 B.C., and lasts for approximately 4000 years. During this time, it is proposed that populations continued with a highly nomadic hunting tradition brought with them from the Old World. Traditional models emphasize the heavy reliance that these groups placed on the hunting of large mammals of the Pleistocene. Plant foods and small game undoubtedly supplanted this diet, and may have played a more important role than previously thought (Black and McGraw 1985; Patterson 1995). Artifact types associated with this phase include various fluted and non-fluted lanceolate projectile points, such as Clovis and Folsom. In general, due to a paucity of well-stratified older sites, the Paleoindian stage remains poorly defined in southeast Texas.

By 8000 B.C., the Late Wisconsin glaciation had ended, increasing climatic aridity and creating extensive changes in the environment. As a result, the majority of Pleistocene megafauna became extinct. This required drastic changes in the dominant subsistence strategies of the affected populations. By 8000 B.C., the start of the Early Archaic stage, the remaining southeast Texas populations had adapted to the environmental changes by shifting to a lifeway dominated by seasonal scheduling. This type of subsistence economy specializes in a regionally circumscribed and repetitive exploitation of specific floral and faunal resources. By remaining in familiar territory, the nomadic populations were able to better exploit the various resources available within their local environment.

Table 1. Archeological Chronology for Southeast Texas (after Ensor 1991).

Time Period	Dates
Paleoindian	10,000-8000 B.C.
Early Archaic	8000-5000 B.C.
Middle Archaic	5000-1000 B.C.
Late Archaic	1000 B.C.-A.D. 400
Early Ceramic	A.D. 400-800
Late Ceramic	A.D. 800-1750
Historic	post A.D. 1750

However, research has suggested that human population densities remained low in the area, and may have even decreased significantly during this time (Moore and Moore 1991). Eventually, the stabilization of the climate by around 1000 B.C., the start of the Late Archaic, appears to have led to increasing populations. This rise in regional population may have been further facilitated by the development of long-distance trade, technological innovations, and changing social relations (Patterson 1995).

The final prehistoric period in southeast Texas is marked by the emergence of ceramics. Ceramic artifacts appear in the archaeological record of the Galveston Bay area by approximately A.D. 100, and by A.D. 500, had been adopted by a number of inland populations (Pertulla et al. 1995). A plain, sand-tempered type of ceramic identified as Goose Creek became prevalent during the period, although a number of decorated varieties and tempering materials were also present (Patterson 1995; Pertulla et al. 1995). The appearance of Caddoan pottery in southeast Texas around A.D. 1000-1300 has been used to suggest the presence of extended trade networks or migration during this time (Aten 1983). The period has also been associated with the introduction of the bow and arrow around A.D. 600 (Aten 1983).

Historic Overview

European contact in the region began in the early 16th century with the ill-fated Narváez expedition that, in 1528, deposited Cabeza de Vaca onto the Texas coastline, possibly on Galveston Island. More long-term contacts resulting from permanent European settlement did not directly impact aboriginal lifeways in southeast Texas until the early 18th century (Patterson 1995). However, European diseases introduced by explorers and early traders had begun to affect Native American populations in Texas by the 16th century (Ewers 1974). Throughout the eighteenth and nineteenth centuries, epidemic diseases, the mission system, and the fur trade seriously reduced, and in some cases exterminated, the indigenous populations residing in the region.

Anglo-American settlement in the Southeast Texas area began in the early 1820s, with a number of Mexican land grants awarded in 1824 (Henson 1996). It is recorded that some members of Stephen F. Austin's second colony were drawn to the area along what is now the southern edge of Montgomery County (American Association of University Women, North Harris County Branch, 1978). Eight land grants were given along Spring Creek in or around 1831 (Ibid.). This would have represented the earliest European settlement within the county. The nearest of these grants would have been more than 40 km. west of the current project area.

PREVIOUS ARCHEOLOGICAL INVESTIGATIONS

Prior to beginning field investigations, Moore Archeological Consulting, Inc., performed a background investigation of archeological and historical literature relevant to the project area. Literature examined for this project includes site inventory records on file at the Texas Archeological Research Laboratory (TARL), previous archeological investigative reports on file at the Texas Historical Commission (THC) and Moore Archeological Consulting, Inc., and other published literature pertinent to the current project. The archival background search determined that no previously recorded archaeological sites are located within the project area, or within ½ kilometer (km) of the tract.

Very little archeological work has occurred near the current project area. However, over the years, a number of archaeological investigations have been conducted in Montgomery County. In 1956, the late Dr. E. Mott Davis of the University of Texas at Austin recorded the first archeological site (41MQ1) in Montgomery County, Texas. Site forms from TARL in Austin indicate that this was a Late Prehistoric site located on the West Fork of the San Jacinto River. Dr. Davis also recorded 41MQ3, a lithic/ceramic scatter site, in the same year. There is little information available concerning site 41MQ2. A State of Texas Archeological Site Form submitted to TARL in 1978 indicates that a bulldozer had scattered some flint flakes. No other artifacts were observed, and no additional investigation has been performed to date.

In 1956, archeologists with the Texas Archeological Salvage Project recorded 32 sites (41MQ4-41MQ36) in an area of Lake Conroe (Shafer 1966). In 1967, three of these sites (41MQ4, 41MQ5, and 41MQ6) were revisited and tested for subsurface cultural materials. This investigation resulted in the identification of three general trends in Southeast Texas culture history (Shafer 1968:78-79):

1. The initial occupation at each site is Archaic. This initial occupation is characterized by Gary, Kent, and Palmillas dart points, and crude bifacial implements are more frequent in the Archaic levels.
2. Ceramics, arrow points, and small drills consistently show a higher position in vertical distribution than do dart points.
3. Plain, sand-tempered pottery is the dominant ware in each site throughout the ceramic levels. Decorated, bone-, sand-, and grog-tempered wares were possibly late additions to the ceramic inventory.

From 1971 to 1974, a historic pottery site known as Kirbee Kiln (41MQ38) was excavated. It was the first historic site to be systematically excavated in Montgomery County. It was also the first site in the area to be registered in the National Register of Historic Places (NRHP) (Malone et al. 1979).

In 1975, an archeological survey of the Sam Houston National Forest revealed the presence of cultural materials, and sites 41MQ41, 41MQ42, and 41MQ43 were recorded (Shafer and Baxter 1975). Later in the summer of the same year, a survey for the proposed Scott's Ridge Recreational Project led to the excavation of 41MQ41, which was determined to be a very significant prehistoric site of considerable antiquity (7000-1000 B.C.). Indeed, 41MQ41 was the first example of a prehistoric site in Montgomery County that possessed artifact types that could be definitively placed in a temporal sequence (Shafer and Stearns 1975:37).

The proposed building of a 300 km pipeline in 1977 led to a survey of the eastern portion of Montgomery County, where a team from Texas A&M University recorded 41MQ45 and

41MQ46 (Taylor 1979). Special attention was paid specifically to the area around the crossing of the West Fork of the San Jacinto River, because its situation on the landscape promoted it as a high-probability area for subsurface archeological deposits

The next largest cultural resource project to be undertaken in Montgomery County was in 1986, when archeologists from the Texas Archeological Survey Project surveyed 3,570 ac. of Lake Creek Reservoir (Bement et al. 1987). The team used an approach that entailed an intensive detailed synthesis of data on the geomorphology, ethnohistory, and archeology of the area to create a research design for the planned basin. This work is the most detailed information to date on the archeology of portions of Montgomery County. A total of 46 prehistoric sites (41MQ75-41MQ120) (four with historic components) were recorded.

In 1990, a survey by the Texas Water Development Board at the proposed wastewater treatment facility area in the Montgomery County town of Woodloch revealed a potentially significant archeological site, 41MQ55 (Jurgens 1990). Later that same year, William E. Moore of Brazos Valley Research Associates conducted further testing of the site (W. Moore 1990). As a result of this investigation, it was recommended that additional research should be performed in order to determine its eligibility for the NRHP.

One site of particular interest to this project is 41WA218, known as the Storm Site, which is located within the Sam Houston National Forest, near the shoreline of Lake Conroe (and the natural channel of the West Fork San Jacinto River). An investigation performed at this site revealed a series of apparent stratigraphically intact living surfaces (Kingsborough and Mangum 2003). Artifacts recovered from the site were chronologically seriated and four radiocarbon dates support the chronology. Current thought on the formation of the site involves periodic and large-scale depositions that buried living surfaces. The integrity of the site deposits in the massive sandy deposits that make up the bulk of the site matrix appear to be supported by the occurrence of numerous intact lamellae beginning at approximately one meter below the modern surface. Additionally, intact features were recorded including an ash pit and a scatter of burned rocks. Recent Walker County excavations at the Huntsville Fish Hatchery (Davis et al. 1994) and at 41WA47 in Huntsville State Park (Greaves 2002) have encountered similar deposits and have drawn similar conclusions.

More recently, personnel from Moore Archeological Consulting, Inc. have conducted Phase I and Phase II investigations at the Bluegreen Southwest Ridgelake Shores Development west of Conroe in Montgomery County, Texas. The survey took place along Fish Creek and an unnamed tributary of Fish Creek. The work consisted of Phase I intensive survey that included shovel testing and excavation of test units. Additional Phase II testing and backhoe trenching also took place. Five prehistoric sites were found during the Phase I survey, all along Fish Creek. The artifact sample from each site was small and they could not be reliably dated. The results of the site testing indicated that none of the sites met the criteria for inclusion in the NRHP. No further work was recommended.

In 2008, Moore Archeological Consulting, Inc., conducted a reconnaissance-level pedestrian survey of Lake Houston Wilderness Park (Moore and Driver 2009). As part of the creation of a master plan for park development, this survey was conducted in order to generate a predictive model for anticipating the locations of potential cultural resources within the immense property. The reconnaissance-level survey discovered a total of 39 new archeological sites. However, because the survey was limited to a reconnaissance-level, none of the site boundaries were delineated, nor was there enough information generated for determining the eligibility of any of these sites for nomination as a State Archeological Monument or for inclusion on the NRHP. The

survey and resulting analysis did indicate that three of the proposed predictive categories (PALM Unit distribution, soil characteristics, and proximity to water) provided useful parameters for predicting potential prehistoric site locations. The results of this evaluation indicated that 1) the park is potentially a very important preserve for prehistoric cultural resource sites, and 2) that the predictive model was quite successful in identifying areas that will probably yield sites dating from prehistoric times. Although one of the sites (41MQ247) identified in this reconnaissance survey is located near the current project, it will not be impacted by the proposed development.

In 2012 Moore Archeological Consulting, Inc. conducted a survey of the ca. 2.5 ac. footprint of a then proposed archery range facilities within the Lake Houston Wilderness Park (Driver 2012; TAC Permit 6164). At that time it was not known that survey of the entire tract would be necessary, so the remaining acreage was left unexamined. It is the remaining acres of this overall 20 ac. tract that the current project area examined. The survey of the original 2.5 ac. was completed and no cultural resources were observed or recovered within the limits of the tract.

FIELD METHODS AND RESULTS

The fieldwork was conducted in January of 2015, and consisted of a 100% pedestrian survey that included systematic shovel testing, and visual examination for surface exposure of cultural materials. The proposed project area is depicted on the Splendora (309555), Texas 7.5' USGS topographic map (Figures 2 and 3). The irregular-shaped tract is located just to the south of FM 1485, and west of Champion Rod and Gun Club Road. The project area is covered in thick vegetation consisting of a long leaf pine, oak, elm, holly, dense yaupon, and mixed understory that varied in thickness (Appendix A, Photograph 1).

The Principal Investigator and/or the Project Archeologist and two field assistants conducted the survey. All areas of exposed soil were examined for surface exposure of cultural remains and features. Particular attention was paid to any landforms or features that have been determined of high archeological probability. Small (40-centimeters [cm] by 40 cm) shovel tests were excavated within the area where construction of the running center will occur. Shovel tests were excavated in 10 cm arbitrary levels and were excavated to at least 50 cm or until intact basal clay was reached. Each test was documented, including information on location (utilizing a recreation grade, Wide Area Augmentation System-enabled GPS unit), soil profile and cultural yield. Soil fill from tests was screened (when possible) through ¼-inch hardware cloth, examined for cultural materials, and the units were backfilled immediately. Allowances were made in the shovel test placement to allow for the sampling of landforms or features of interest. A total of 18 shovel tests were excavated and the location of each shovel test was then plotted on a map of the Project Area (Figure 5). The soils along the proposed water line were particularly wet. Attempts to probe this section resulted in the collapse of the unit as it filled with water immediately. A visual examination of this alignment did not result in the discovery of any surface features, historic or prehistoric, that would indicate the presence of cultural resources. No cultural materials were recovered from any of the shovel tests.

Based on the soils described for the Project Area it was not expected that deep reconnaissance (in the form of backhoe trenching) would be necessary. The results in the field confirmed this determination as the soils largely conformed to those described in the county soil manual.

Any locality that produced either prehistoric or historic cultural remains would be recorded on State of Texas archeological site forms for submission to THC. In addition to form information,

photographs, plan and stratigraphic sketches and measured drawings and crewmembers' daily field notes documented sites and features.

Investigations at any identified site or feature sought to determine site boundaries, depth, nature of the archeological deposits, and the site's state of preservation as far as was possible with shovel testing. Archeological sites and cultural features were photographed, mapped in plan view and plotted with accuracy on USGS quadrangle maps and project maps. If possible, a recommendation for State Archeological Landmark (SAL) and NRHP eligibility was made.

For buried or obscure sites, boundaries were delineated through shovel test excavation. Where necessary, shovel tests were dug at 5 or 10 m (16.5' or 33') intervals radially, generally in the cardinal directions from the presumed center of each site until no further artifacts were encountered in two successive units (or until the boundary of the Project Area was reached). The site boundaries on each radius were presumed to lie between the last artifact-producing test and the first sterile unit. Information on the depth and nature of the deposits was derived from shovel test results, as well as available surface observations. No prehistoric resources were found during this investigation.

The collection policy for this survey was that (1) any prehistoric or potentially pre-1870 historic materials recovered from shovel tests or other subsurface investigations that did not prove, after extensive site delineation tests, to be isolated artifacts would be retained, and (2) for surface materials: only diagnostic cultural materials from the above periods would be collected and retained.

Photographs were taken of the Project Area and general landforms within the tract. Photographs were also taken of any feature that stood out (i.e., mounds, structure remnants, etc.) and of localities that could not be dug for various reasons. Photograph direction, subject, photographer name, and dates were recorded on a standard Moore Archeological Consulting photographic log.

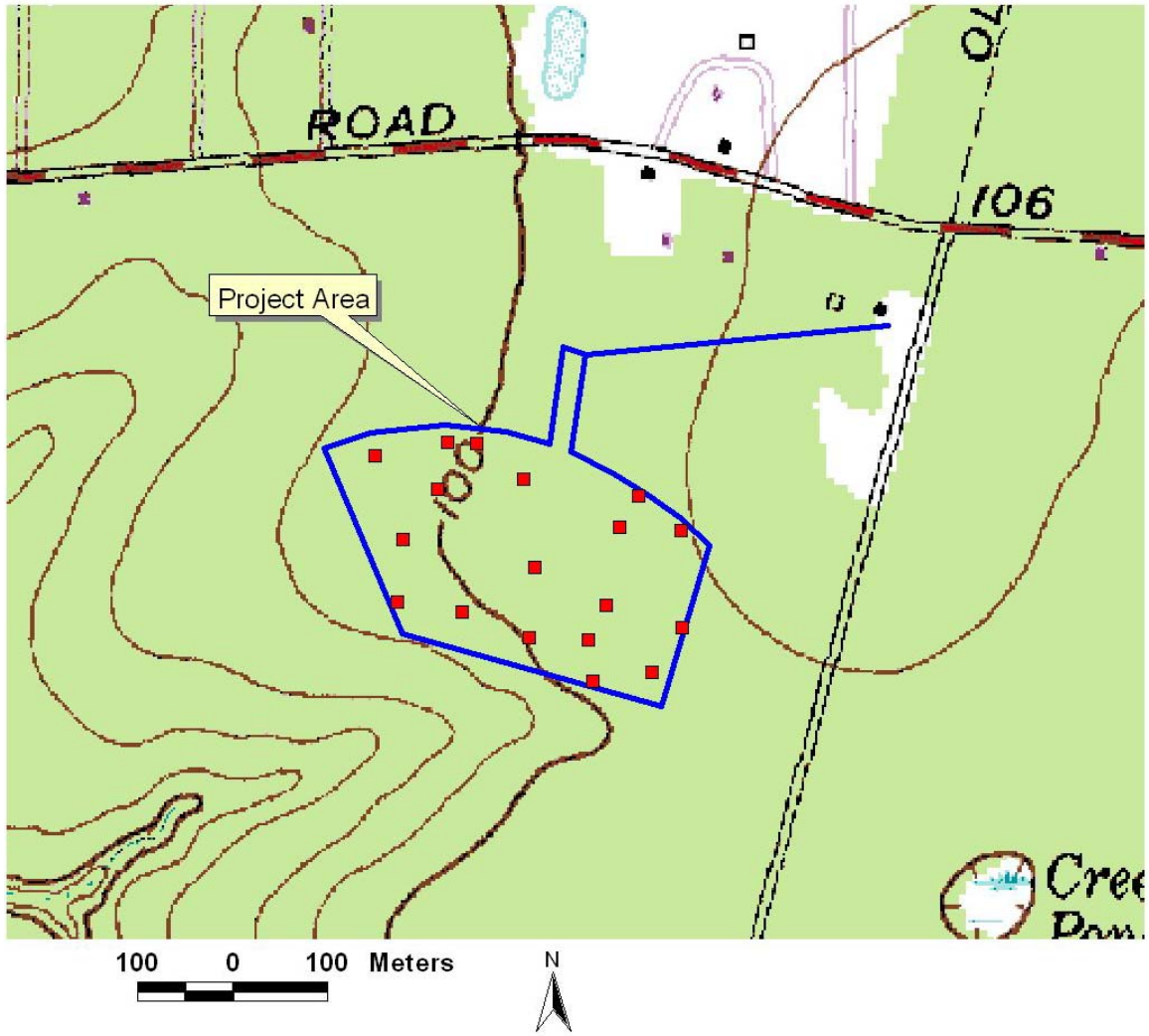


Figure 5. Project area with shovel test locations (red squares).

RECOMMENDATIONS

In January of 2015, Moore Archeological Consulting, Inc., conducted a cultural resource survey investigation for an approximately 17.5-acre (ac.) tract and associated water line in the Lake Houston Wilderness Park in southeast Montgomery County, Texas. The objectives of the investigation were to locate and identify cultural materials, sites, or historic properties within the proposed impact area, and to prepare management recommendations regarding any identified resources. The investigations were conducted for Berg-Oliver Associates, Inc. under Texas Antiquities Permit Number 7125.

Based on the results of this investigation it is the recommendation of Moore Archeological Consulting, Inc. that no further archeological investigations, are necessary on the proposed project area before the onset of construction. It is felt that this investigation has sufficiently examined the tract and water line route and found no evidence that any significant prehistoric or historic cultural resource are present within the boundaries of the Project Area.

Should archeological deposits or features be encountered during construction, it is advised that construction cease in the immediate area of the finds and the Archeology Division of the Texas Historical Commission should be contacted for further consultation.

REFERENCES CITED

- Abbott, James T.
2001 *Houston Area Geoaerchology; A Framework for Archeological Investigation, Interpretation, and Cultural Resource Management in the Houston Highway District*. Texas Department of Transportation, Environmental Affairs Division, Archeological Studies Program, Report 27.
- American Association of University Women, North Harris County Branch
1978 *The Heritage of North Harris County*. Independent Printing
- Aten, Lawrence E.
1983 *Indians of the Upper Texas Coast*. Academic Press, New York
- Black, Stephen L., and A. Jochim McGraw
1985 *The Panther Springs Site: Cultural Change and Continuity within the Upper Salado Watershed, South-Central Texas*. Archaeological Survey Report 100. Center for Archaeological Research, University of Texas at San Antonio.
- Blair, Frank W.
1950 *The Biotic Provinces of Texas*. *The Texas Journal of Science* 2(1):93-117
- Bureau of Economic Geology
1982 *Geologic Atlas of Texas*. Bureau of Economic Geology, The University of Texas at Austin.
- Ensor, H. Blaine
1991 *Archeological and Historic Investigations of the Harris County Lease in Barker Reservoir, Harris County, Texas*. Reports of Investigations No. 2. Archeological Research Laboratory, Texas A&M University, College Station.
- Driver, David
2012 *A Cultural Resource Survey for the Proposed 2.5-acre Lake Houston Wilderness Archery Park, Montgomery County, Texas*. Report of Investigations Number 604. Moore Archeological Consulting, Inc. Houston.
- Ewers, John C.
1974 *The Influence of Epidemics on the Indian Populations and Cultures of Texas*. *Plains Anthropologist* 8:104-115.
- Fisher, W. L., J. H. McGowen, L. F. Brown, Jr., and C. G. Groat
1972 *Environmental Geologic Atlas of the Texas Coastal Zone: Galveston and Houston Area*. Bureau of Economic Geology, The University of Texas at Austin..
- Greaves, Russell D.
2002 *Archaeological Survey of Huntsville State Park and Excavations in 41WA47*. Archeological Survey Report Number 327. Center for Archaeological Research, The University of Texas at San Antonio.
- Hunt, C. B.
1974 *Natural Regions of the United States and Canada*. W. H. Freeman, San Francisco.
- Jurgens, Christopher J.
1990 *An Archeological Reconnaissance of Proposed Wastewater Facilities Improvements, Town of Woodloch, Montgomery County*. State Water Pollution Control Revolving Fund, Project Number 3910-001. Austin, Texas.

- McClintock, W. R., Jr., T. L. Galloway, B. R. Stringer
 1972 *Soil Survey of Montgomery County, Texas*. United States Department of Agriculture, Soil Conservation Service in cooperation with the Texas Agricultural Experiment Station and the Texas State Soil and Water Conservation Board.
- Malone, James M., G. H. Greer, and H. Simons
 1979 *Kirbee Kiln: A Mid-19th-Century Texas Stoneware Pottery*. Texas Historical Commission. Austin.
- Moore, Roger G.
 1996 *An Empirical Analysis of Elements of Prehistoric Site Location and Formation in Harris County, Texas*. Report of Investigations No. 149. Moore Archeological Consulting, Inc., Houston
- Moore, Roger G., and David Driver
 2009 *A Reconnaissance Level Survey of Lake Houston Park, Harris and Montgomery Counties, Texas*. Report of Investigations 540, Moore Archeological Consulting, Inc, Houston.
- Moore, Roger G., and G. Z. Moore
 1991 Cypress Creek and Northern Harris County: A History. In *Archaeological Survey of Cypress Creek from Spring Branch to Kuykendahl Road, Harris County, Texas*, edited by H. Blaine Ensor, pp. 12-32. Archaeological Surveys No. 8. Archaeological Research Laboratory, Texas A&M University, College Station.
- Moore, William E.
 1990 *Subsurface Testing at the Woodloch Site (41MQ55) in Montgomery County, Texas: An Interim Report*. Contract Report No. 10. Brazos Valley Research Associates, Bryan, Texas.
- Patterson, Leland W.
 1995 The Archeology of Southeast Texas. *Bulletin of the Texas Archeological Society* 66:239-264.
- Pertulla, Timothy K., Myles R. Miller, Robert A. Ricklis, Daniel J. Prikryl, and Christopher Lintz
 1995 Prehistoric and Historic Aboriginal Ceramics in Texas. *Bulletin of the Texas Archeological Society* 66:175-235.
- Shafer, Harry J.
 1966 *Archeological Surveys of Honea, Pat Mayse, and Halsell Reservoirs, Texas*. Texas Archeological Survey Research Report No. 1. The University of Texas at Austin.
- 1968 *Archeological Investigations in the San Jacinto River Basin, Montgomery County, Texas*. Texas Archeological Survey Research Report No. 13. The University of Texas at Austin
- Shafer, Harry J., and Edward P. Baxter
 1975 *An Archeological Survey of Scotts Ridge and Kaygall Recreation Sites, Sam Houston National Forest*. Reports of Investigations No. 15. Archeological Research Laboratory, Texas A&M University, College Station.
- Shafer, Harry J., and Thomas B. Stearns
 1975 *Archeological Investigations at the Scotts Ridge Site (41MQ41) Montgomery County, Texas*. Reports of Investigations No. 17. Archeological Research Laboratory, Texas A&M University, College Station.
- Shafer, Harry J., Edward P. Baxter, Thomas B. Stearns, and James P. Dering
 1975 *An Archeological Assessment of the Big Thicket National Preserve*. Anthropology Laboratory Research Report 17. Texas A&M University, College Station.

Story, Dee Ann, Janice A. Guy, Barbara A. Burnett, Martha D. Freeman, Jerome C. Rose, D. Gentry Steele, Ben W. Olive, and Karl J. Reinhard

1990 *The Archeology and Bioarcheology of the Gulf Coastal Plain: Volume 1*. Arkansas Archeological Survey Research Series, No. 38.

Taylor, Robert A.

1979 *The Proposed Texas Loop Pipeline Route: An Archeological Assessment*. Reports of Investigations No. 2. Archeological Research Laboratory, Texas A&M University, College Station.

Tharp, B. C.

1939 *The Vegetation of Texas*. Texas Academy of Sciences, Non-Technical Series 1:1-74.

APPENDIX A: Photographs



Photograph 1: Project area showing typical vegetation.



Photograph 2: Project area showing standing water.



Photograph 3: shovel test excavation with water filling the bottom.

APPENDIX B: Shovel Test Log

ST No.	Depth	Description	Comments
1	0-16	10yr 4/3 brown sandy loam, wet and non sticky	NNE portion of project area, flat saturated ground.
	16-40	10yr 6/4 light yellowish brown sandy clay loam, with few orange mottles, iron, and manganese concretions	
	40-78	Mottled 10yr 7/2 light gray, 10yr 6/3 pale brown and 7.5yr 5/8 strong brown sandy clay, wet and sticky with few iron and manganese concretions.	
2	0-9	10yr 4/3 brown sandy loam wet and non sticky.	NE portion of project area on sandy mound, .5-1m above the surrounding land. Linear 10m by 4m.
	9-95	10yr 6/4 light yellowish brown sandy clay loam with few iron and manganese concretions.	
	95	Was at the sandy clay layer but could not go deeper due to sandy layer oozing in on top.	
3	0-10	10yr 4/3 brown sandy loam, wet and non sticky	Center North on slight mound.
	10-94	10yr 6/4 light yellowish brown loamy sand, wet and non sticky, with few iron and manganese concretions, was caving in at base but we were close to subsoil.	
4	0-60	10yr 6/4 light yellowish brown loamy sand, moist and non sticky, with few iron and manganese concretions, truncated.	
	60-94	10yr 6/4 light yellowish brown sandy clay loam with few orange mottles and iron and manganese concretions, wet and sticky, gets more clayey with depth.	
5	0-54	10yr 3/3 dark brown sandy loam, wet and nonsticky, charcoal in upper 20cm, with few iron and manganese concretions.	Southern portion on sandy mound. This mound is oddly shaped and linear and the charcoal may represent some sort of intentional burning.

	54-98	10yr 6/4 light yellowish brown silty loam, wet and non-sticky, started coming in at 80 cmbs. Common iron and manganese concretions that increase in size with depth.	
6	0-3	10yr 5/3 brown silty loam, wet and non sticky with few iron and manganese concretions and heavy roots and rootlets.	On sandy mound with pine, water, oak, and youpon.
	3-65	10yr 6/4 light yellowish brown silty loam, wet and non sticky with few iron and manganese concretions, walls coming in at 50 cmbs.	
7	0-12	10yr 5/3 brown silty loam, wet and non sticky with few iron and manganese concretions and few roots and rootlets.	Flat area in South East part of project area.
	12-65	10yr 6/4 light yellowish brown silty loam, wet and non sticky with few iron and manganese concretions, water table at 30 cmbs.	
8	0-9	10yr 5/3 brown silty loam, wet and non sticky with few iron and manganese concretions.	East portion of project area, on 10m diameter sandy mound.
	9-80	10yr 6/4 light yellowish brown silty loam, wet and non sticky with few iron and manganese concretions, increasing in size and number with depth.	
	80-93	10yr 6/4 light yellowish brown silty clay loam, with few orange mottles, wet and somewhat sticky.	
9	0-8	10yr 5/3 brown silty loam, wet and non sticky few iron and manganese concretions.	East central portion of project area, flat area.
	8-60	10yr 6/4 light yellowish brown silty loam, wet and non sticky with few iron and manganese concretions.	
	60-70	10yr 6/4 light yellowish brown silty clay loam, with a few orange mottles, wet and somewhat sticky with few iron and manganese concretions.	
10	0-4	10yr 5/3 brown silty loam, wet and non sticky with few iron and manganese concretions.	

	4-73	10yr 6/4 light yellowish brown silty loam, wet and non sticky with few iron concretions.	
11	0-4	10yr 5/3 brown silty loam, wet and non sticky with few iron and manganese concretions.	Central part of project area, walls were caving in due to a high water table.
	4-70	10yr 6/4 light yellowish brown silty loam, wet and non sticky with few iron and manganese concretions.	
	70-74	10yr 6/4 light yellowish brown silty clay loam, wet and somewhat sticky with few iron and manganese concretions.	
12	0-3	Heavy leaf litter	Flat, wooded.
	3-30	10yr 4/3 brown silty loam, wet and non sticky, few iron and manganese concretions.	
	30-75	10yr 6/4 light yellowish brown silty loam, wet and non sticky, more clayey with depth with few iron and manganese concretions.	
	75-82	10yr 6/4 light yellowish brown silty clay, wet and sticky with few orange mottles, iron and manganese concretions common at top.	
13	0-10	10yr 5/3 brown silty loam, wet and non sticky with few iron and manganese concretions.	Flatter and somewhat higher ground with pine trees. In the Southwest corner of the project area.
	10-85	10yr 6/4 light yellowish brown silty loam, wet and non sticky, with few iron and manganese concretions.	
14	0-11	10yr 5/3 brown silty loam, moist and friable with few iron and manganese concretions.	Western project area on slight rise.
	11-55	10yr 6/4 light yellowish brown silty loam, moist and friable, with few iron and manganese concretions.	
	55-95	10yr 6/4 light yellowish brown fine sandy loam with few orange mottles, wet and non sticky.	
15	0-3	10yr 5/3 brown silty loam, wet and non sticky with few iron and manganese concretions.	In Northwest project area on flat ground.

	3-65	10yr 6/4 light yellowish brown silty loam, wet and non sticky, with few iron and manganese concretions.	
	65-74	10yr 6/4 light yellowish brown silty clay loam, wet and somewhat sticky with orange mottles, few iron and manganese concretions.	
16	0-22	10yr 5/3 brown silty loam, wet and non sticky with few iron and manganese concretions.	Northwest of project area.
	22-70	10yr 6/4 light yellowish brown silty loam, wet and non sticky, with few iron and manganese concretions.	
17	0-78	10yr 4/3 brown silty loam, moist and friable, few iron and manganese concretions.	On an unnatural looking mound.
	78-105	10yr 6/4 light yellowish brown silty sand, wet and non sticky, with few iron and manganese concretions.	
18	0-6	10yr 4/3 brown silty loam,	West portion of project area, flat and wooded.
	6-54	10yr 6/4 light yellowish brown silty loam, wet and non sticky, with few iron and manganese concretions.	
	54-84	10yr 6/4 light yellowish brown silty clay loam, wet and somewhat sticky, with few orange mottles and iron and manganese concretions.	