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Archaeological Investigation At The Witcher Property Within The Proposed Lower Bois D'Arc Creek Reservoir Fannin County, Texas

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Archaeological Investigation At The Witcher Property Within The Proposed Lower Bois D'Arc Creek Reservoir Fannin County, Texas

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ARCHAEOLOGICAL INVESTIGATION AT THE

WITCHER PROPERTY

WITHIN THE PROPOSED

LOWER BOIS D'ARC CREEK RESERVOIR

FANNIN COUNTY, TEXAS

Texas Antiquities Code Permit 7423

Cody S. Davis, MA
and
S. Alan Skinner, PhD

Submitted to:

NORTH TEXAS MUNICIPAL WATER DISTRICT
505 E. Brown Street
Wylie, Texas 75098

Submitted by:

AR CONSULTANTS, INC.
805 Business Parkway
Richardson, TX 75081

Cultural Resources Report 2018-18
January 31, 2018

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ABSTRACT

North Texas Municipal Water District is proposing to build the Lower Bois d'Arc Creek Reservoir, northeast of Bonham in Fannin County, Texas. In 2011 and 2013, AR Consultants, Inc. conducted an intensive pedestrian survey of 30 percent of the proposed reservoir footprint (Davis et al. 2014). During the 2013 survey, one of the proposed high potential archaeological survey areas, (Q), crossed private property owned by Harold "Thump" Witcher. At the time, Mr. Witcher denied a request for survey access and survey areas Q1 and Q2 replaced area Q. Since that time, Mr. Witcher identified the presence of archaeological sites on his property and they were recorded as 41FN176, 41FN177, 41FN178, and 41FN179. The U.S. Army Corps of Engineers provided this information to North Texas Municipal Water District, who in turn directed AR Consultants, Inc. to conduct an intensive pedestrian survey of Witcher's property, since he was willing to grant access. The survey of the 156 acres was conducted between October and November of 2015 under Texas Antiquities Permit 7423. The locations of three previously recorded sites and three new sites (41FN244, 41FN245, and 41FN246) were documented during the systematic survey. Previously recorded site 41FN179 was not located and is not present in its previously reported locations. Therefore, the site could not be evaluated. No additional testing is recommended at sites 41FN245, and 41FN246. These sites have low artifact density in the plow zone with no evidence of organic preservation, intact features, or deeply buried undisturbed deposits. These sites are considered not eligible under Criterion A, B, C, or D of the NRHP or as SALs. Testing and research of the prehistoric components at sites 41FN176, 41FN177, 41FN178, and 41FN244 is warranted in order to determine their full vertical and horizontal extents as well as to assist in making NRHP determinations. Additional intensive shovel testing is necessary on the North Texas Municipal Water District property south of the Witcher property, to try and relocate site 41FN179. The survey demonstrated that prehistoric sites were present on the terrace edge, while the late 19th to mid-20th century historic sites were set further away from the edge. The artifacts recovered from the survey indicate Late Archaic through Middle Caddo Native American occupations. All project records will be curated at the Texas Archaeological Research Laboratory, while the artifacts will be returned to Mr. Witcher.

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LIST OF ABBREVIATIONS

| | |
|-------|---|
| amsl | above mean sea level |
| ARC | AR Consultants, Inc. |
| BEG | Bureau of Economic Geology |
| cmbs | Centimeters below the surface |
| FCR | fire-cracked rock |
| FCSM | Fannin County Soil Map (1939) |
| LBCR | Lower Bois d'Arc Creek Reservoir |
| GHM | General Highway Map |
| GPS | Global Positioning System |
| IO | Isolated Occurrence |
| NRHP | National Register of Historic Places |
| NTMWD | North Texas Municipal Water District |
| PA | Programmatic Agreement |
| SAL | State Antiquities Landmark |
| ST | Shovel Test |
| TARL | Texas Archeological Research Laboratory |
| TASA | Texas Archeological Sites Atlas |
| TAP | Texas Antiquities Permit |
| THC | Texas Historical Commission |
| USACE | U.S. Army Corps of Engineers |
| USGS | U.S. Geological Survey |
| UT | University of Texas, Austin |

INTRODUCTION

North Texas Municipal Water District (NTMWD) is proposing to build the Lower Bois d'Arc Creek Reservoir (LBCR), northeast of Bonham in Fannin County, Texas (Figure 1). The proposed reservoir stretches from U.S. Highway 82 (US 82) on the east side of Bonham, Texas, northeast within the Bois d'Arc Creek valley to the dam site, approximately 1,300 feet (ft) south of Coffee Mill Lake. The reservoir will inundate 16,526 acres at the top of the conservation pool and will cover significant areas of alluvial terraces that are along the north and west sides of the Bois d'Arc Creek floodplain. The project will require that the Tulsa District of the U.S. Army Corps of Engineers (USACE) issue a 404-permit to NTMWD. In addition, an antiquities permit was secured from the Texas Historical Commission (THC) before fieldwork was conducted since portions of the proposed survey area were on property owned by NTMWD.

Early in the LBCR project planning, a research design (Skinner et al. 2010) was developed under the guidance of a Programmatic Agreement (PA) for the project that was drafted and signed by NTMWD, the Tulsa District of the USACE, the THC, and the Caddo Nation of Oklahoma. In anticipation of beginning archaeological survey in the reservoir area, AR Consultants, Inc. (ARC) conducted research, developed maps, and a discussion with regard to predicting areas which were considered to have high and low potential for containing historic and prehistoric archaeological sites. In 2011 and 2013, ARC conducted an intensive pedestrian survey of 30 percent of the proposed LBCR footprint (Davis et al. 2014).

During the 2013 survey, proposed Survey Area Q included private property owned by Harold "Thump" Witcher, Jr. (Figure 2). At the time, Mr. Witcher denied NTMWD's request for survey access causing ARC to revise the proposed survey area to the two parts (Q1 and Q2) presented in the final report (Davis et al 2014:99). Since that time, Mr. Witcher identified archaeological sites on his property. In the summer of 2015, he allowed archaeologists to document sites 41FN176, 41FN177, 41FN178, and 41FN179 (Perttula et al. 2015a). NTMWD was provided this information by the USACE, and ARC was directed to conduct an intensive pedestrian survey of the original portion of Survey Area Q owned by Mr. Witcher.

Given that the Texas Antiquities Permit ([TAP] 5950) for the survey phase of LBCR had been closed and the report finalized, ARC obtained a new permit (TAP 7423) to survey this area, which included property owned by NTMWD (Figure 3). Since the majority of the present survey was conducted on private property, a copy of the final report and all artifacts collected on private property will be returned to Mr. Witcher. The area identified on Figure 3 consists of approximately 156 acres. ARC had originally planned to survey this area given its elevations and topographic relief being considered high potential for prehistoric sites. This study area and his property represent the bulk of the remaining terrace deposits along Bois d'Arc Creek that had not been surveyed by ARC in the LBCR study area.

Because reservoir construction will affect Waters of the U.S., the project will require a 404-permit from the USACE. Relevant federal legislation includes the National Historic Preservation Act of 1966, as amended (PL-96-515), the National Environmental Policy Act of 1969 (PL-90-190), and the Archeological and Historical Preservation Act of 1974, as amended (PL-93-291). The Texas Antiquities Code (Texas Natural Resources Code, Title 9, Chapter 191) also applies to the cultural resource investigations for the overall LBCR project since NTMWD is an entity of

the State of Texas. The purpose of the survey was to gather information needed to make recommendations about known and previously unknown archaeological sites and their eligibility for listing on the National Register of Historic Places (NRHP) and as State Antiquities Landmarks (SAL).

The survey was conducted between October and November of 2015. A total of six archaeological sites (3 prehistoric, 2 historic, and 1 multicomponent) were documented. The four previously reported site locations were revisited, and three were newly recorded. Previously recorded site 41FN179 was not relocated or documented. During the survey, a total of 454 shovel tests (STs) were excavated in the 156-acre study area. Of those, 49 STs contained artifacts, approximately 11 percent. The following report contains a description of the natural environment followed by a detailed summary of previous archaeological investigations conducted within the property from published and unpublished sources. A comprehensive historical background and previous investigations of the reservoir area compiled from the archival research, oral history information, and local resources precedes the individual archaeological site discussions, followed by conclusions and recommendations that arise from the study. A list of references cited and appendices conclude the report.

Administrative Information:

| | |
|-------------------------|---|
| ARC Project #: | 150808 |
| Sponsor: | North Texas Municipal Water District |
| Review Agencies: | Tulsa District, US Army Corps of Engineers Texas Historical Commission, Archeology Division, and the Caddo Nation of Oklahoma |
| Principal Investigator: | Cody S. Davis, MA |
| Field Crew: | Brett Lang, Joseph Motley, Joanna Suckling, Joy Tatem, David Macias, Neil Hargrove, Taylor Massey, Chris Barry, and Cody S. Davis |
| Field Dates: | October 27-29 and November 09, 2015 |
| Acres Surveyed: | 156 |
| Revisited Sites: | |
| Prehistoric: | 41FN176, 41FN177, 41FN178, and 41FN179 |
| Recorded Sites: | |
| Historic: | 41FN245 and 41FN246 |
| Multicomponent: | 41FN244 |
| Curation Facility: | TARL, The University of Texas at Austin for records. All artifacts will be returned to landowner, Harold Witcher |

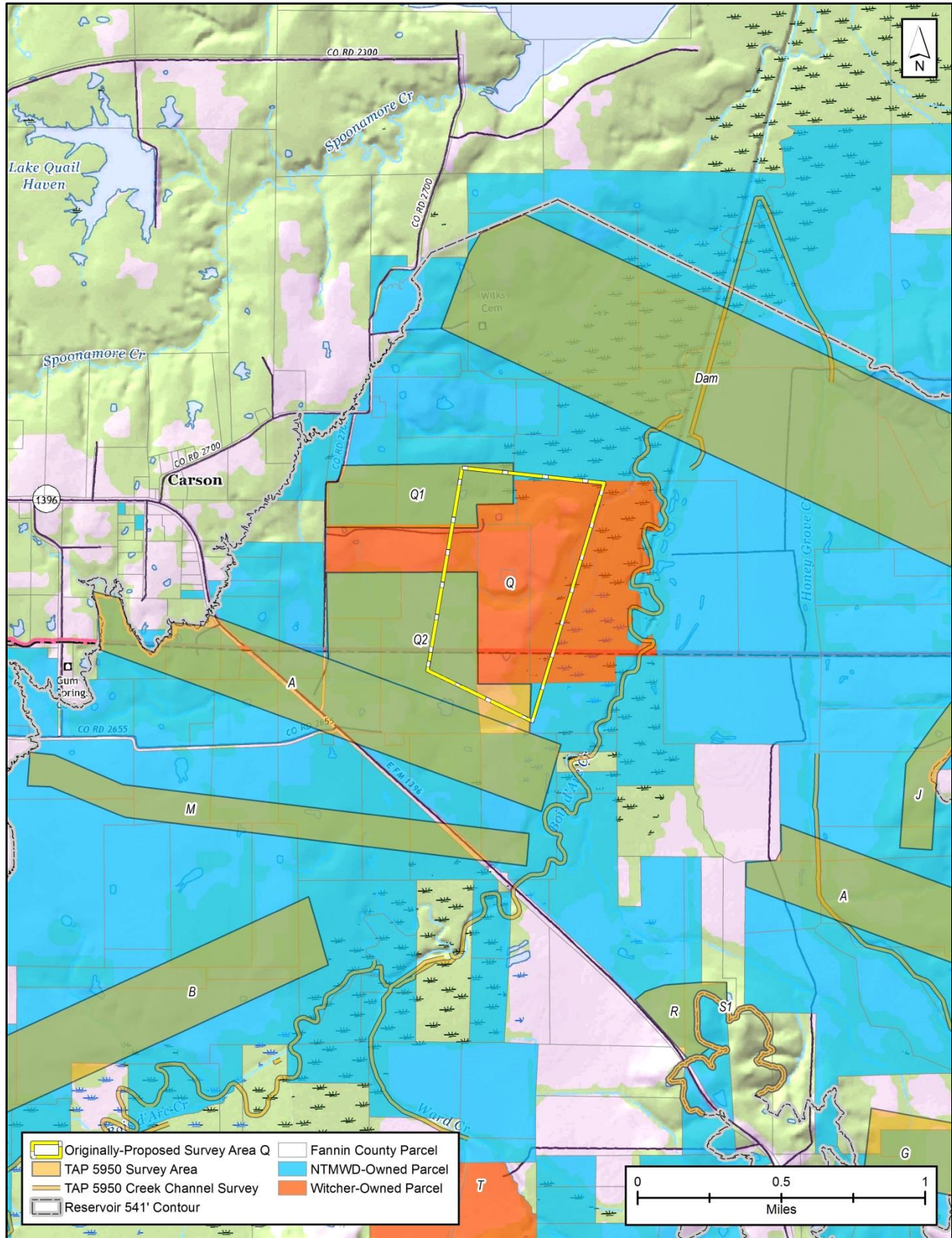


Figure 2. LBCR TAP 5950 survey areas shown in relation to the originally proposed Survey Area Q based on Fannin County Appraisal District parcel data (2015).

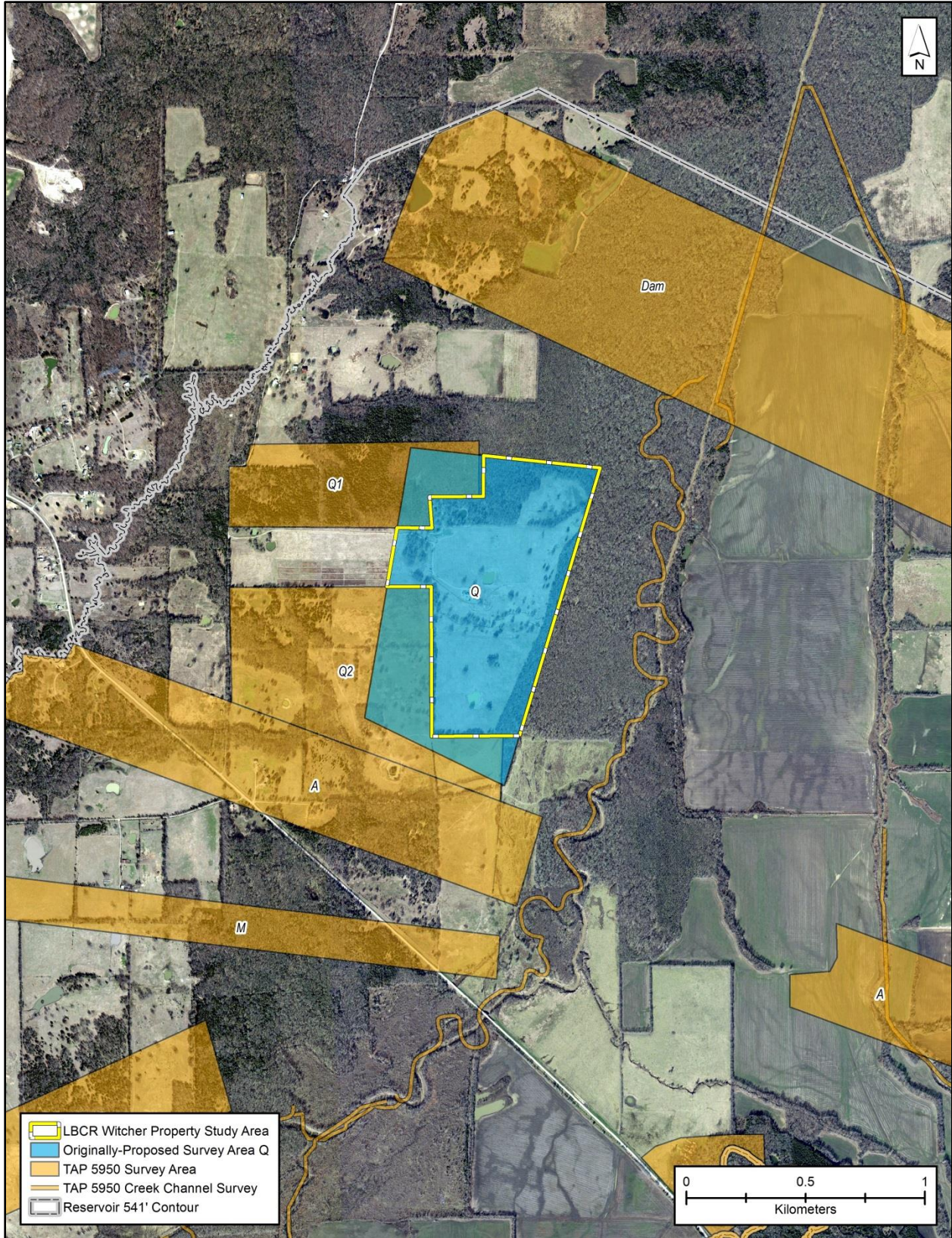


Figure 3. Witcher Property survey area (TAP 7423) shown in relation to areas surveyed under TAP 5950 on a recent aerial photograph.

NATURAL ENVIRONMENT

The topography of the study area has been sculpted by the down-cutting of the Red River and its tributaries, which include Bois d’Arc Creek. Bedrock is exposed outside these two major drainage valleys, but is generally covered in the valleys by recent Quaternary alluvium. Older Quaternary terrace deposits occur in the Red River valley upstream and downstream from the mouth of Bois d’Arc Creek (Jacobs 1981). The Bureau of Economic Geology ([BEG 1966, 1967) has mapped only a small number of these deposits in the reservoir area. A sheet of Quaternary sands overlies the elevated Eagle Ford formation, which constitutes an upland ridge between Bois d’Arc Creek and the Red River (Figure 4). The ridge has a maximum elevation of 595’ above mean sea level (amsl), but presents a gradual rise from both the river and the creek floodplains. Bonham Marl overlies the Eagle Ford formation west of Coffee Mill Creek on the north side of Bois d’Arc Creek. Bonham Marl, covered by a thin layer of sandy loam, is also exposed in the uplands east of the proposed dam location, and creates the appearance of a geologic terrace on the northeast side of the creek. Brownstown Marl and Gober Chalk back the Blossom Sand formation, along the southern edge of the reservoir. Erosion of these formations, particularly the Blossom Sand, created a steep slope, rising to 600’ amsl, contrasting with the more gradual rise on the north side of Bois d’Arc Creek. The valley is filled with small areas of first and second Quaternary terraces, and elsewhere clay alluvium rests on the decomposing Bonham Marl and Eagle Ford formations.

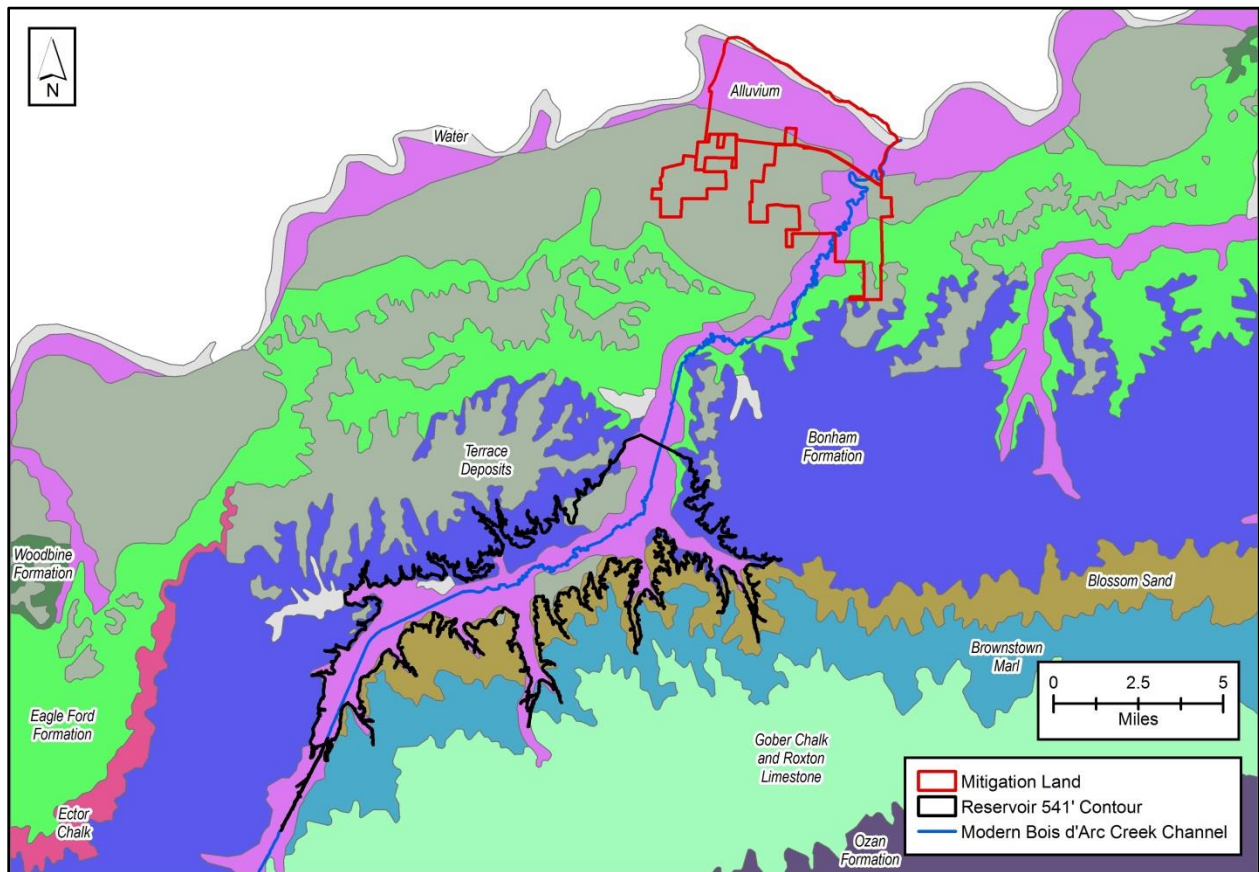


Figure 4. Mapped geological formations taken from the Sherman and Texarkana, TX (BEG 1966, 1967).

More specifically, the LBCR Witcher Property study area is comprised of terrace deposits and alluvium (BEG 1967). The survey area includes three soil types: Derly silt loam, Porum loam, and Tinn clay. Bois d'Arc Creek's floodplain is primarily composed of Tinn clay, with a slope of up to one percent and is inundated on an average of more than once a year (Goerdel 2001:71). The typical soil profile has a 10-inch thick black clay surface layer and a 40-inch thick very dark gray clay that overlies the subsoil. The subsoil is typically 30-inch thick and is dark gray clay with dark grayish brown mottles. In a climax condition, the floodplain would have been covered with a mixture of hardwood forest and grass understory. Today much of the floodplain is farmed or used as pasture. The Porum loam and Derly silt loam have a high available water capacity and a very slow permeability, thus allowing seeps and springs to occur. These can flow regularly from the soil, or the junction of the soil and the underlying Bonham Marl. Both loams have similar profiles with A and E horizons over a variety of B-horizons. The A and E horizons are typically thin covering the top 12 to 14 inches above the lower horizons. Much of these areas are now farmed or grazed.

The Red River is the major perennial drainage in the vicinity of the study area. Bois d'Arc, Timber, Honey Grove, and Coffee Mill creeks are also mapped as perennial streams on early 20th century maps of Fannin County. The three latter tributaries are more than six to nine miles in length while Bois d'Arc Creek is more than 58 mi long. The intermittent tributaries that flow into Bois d'Arc Creek from the north are two to four miles long, while tributaries on the south side of the creek are generally more than seven miles long. All the tributaries rapidly carry rainfall off the upland prairie. Numerous springs have been documented in Fannin County (Brune 1981:179-181); most originated from Upper Cretaceous sand and silt, and river terrace gravel and sand. On the ridge north of Bois d'Arc Creek, springs, such as Bryant Springs, occur at the junction of the overlying fourth terrace sands and the Eagle Ford formation. On the south side of the creek, water comes out of the Ozan silt, which is above the Gober Chalk, Roxton Limestone, and the Brownstown Formation. Additionally, some springs originate in Quaternary terrace sands at the edge of the creek floodplain.

In a broad sense, four major climax vegetation communities can be found adjacent to the reservoir study area. As defined by Küchler (1964), the Southern Floodplain Forest fills the Red River floodplain and extends slightly up the Bois d'Arc Creek floodplain. A small portion of the Oak-Hickory Forest covers the Red River terraces on both sides of the river upstream and downstream from the mouth of Bois d'Arc Creek. The Blackland Prairie is south of Bois d'Arc Creek and overlies the Gober Chalk and Roxton Limestone that extend to the south. A separate upland prairie is on the ridge, north of the creek; it is mapped as Cross Timbers by Küchler. Different vegetation area limits are presented by Diamond et al. (1987:Figure 1) and by Diggs et al. (2006:Figure 2). An unmapped hardwood forest fills the Bois d'Arc Creek floodplain, as well as the tributaries; it is present on the valley terraces north of the creek. The forested areas would have produced nuts that were available to humans, including acorns that were also foraged by forest-dwelling mammals. It appears from the research of Journey (1994), Flores (1984, 1985), and Schambach (1995) that bois d'arc trees (Burton 1973) were historically abundant in the creek valley; this may have been the case for hundreds or thousands of years (Smith and Perino 1981; Winberry 1979).

These forested areas were inhabited by deer, raccoons, opossums, rabbits, squirrels, skunks, beavers, minks, muskrats and others; rabbits, antelope, and bison lived in the upland prairies (Blair 1950). The river and creeks were home to fish, turtles, frogs, snakes, mussels, and crayfish. Ducks made their homes in the sloughs and flowing channels, while an abundance of other bird species inhabited the forests permanently or during yearly migrations. The Fannin County climate is warm and humid with hot summers and moderate winter temperatures. Rainfall averages 43.99 in. annually with monthly precipitation ranging from 2.02 in. January to 6.06 in. May. High rainfall occurs in the spring and fall.

Six microenvironments are used to predict and interpret prehistoric and historic land use (Skinner et al. 2010:8). These are presented from south to north on the schematic illustration below (Figure 5). The rolling upland prairie (Zone 1) in the south is where herbivores grazed on the prairie grasses and rainwater drained rapidly down to the LBC floodplain by way of short steep intermittent tributaries. The Bois d’Arc Creek floodplain comprises Zone 2; it includes very few isolated knolls. Water was available for at least part of each year and the area flooded at least once a year. The widest variety of plants and animals would have lived in this zone, including Bois d’Arc trees (*Maclura pomifera*) and giant cane (*Arundinaria gigantea*). Zone 3 contains short, flowing tributaries, and the valley slopes on the north side of the creek. This zone, is similar to Zone 2, but contains elevated terraces farther from water, which means less flooding. Zone 4 is the level upland prairie composed of fourth terrace Quaternary sediments, deposited by the Red River. Zone 5 is comprised of the younger terrace sediments deposited by the Red River in ancient times. Zone 6 is the Red River and its active floodplain; giant cane was abundant prehistorically. Zones 2 and 3 were forest-covered with a grass understory prior to historic clearing for farm and pasture land. The LBCR Witcher Property study area falls within Zone 3.

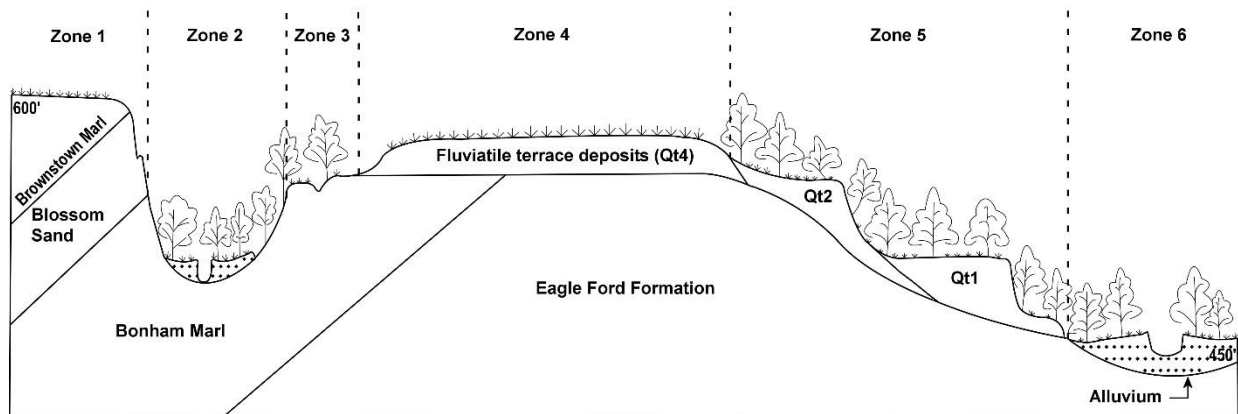


Figure 5. Schematic illustration showing the topographic relief, underlying geology, and microenvironments from south of Bois d’Arc Creek (left) to the north side of the Red River floodplain (right) (Skinner et al. 2010:8).

Data from the Blackland Prairie and Post Oak Savanna have been useful in modeling the environmental change in the Late Pleistocene and Holocene (Fields and Tomka 1993:78-79). They argue that pollen data from Weakly Bog in Leon County and Boriack Bog in Lee County is best used in reconstructing environmental conditions for the western edge of Northeast Texas

which coincides with Fannin County (Collins and Bousman 2015). The bogs have high arboreal pollen and low grass pollen prior to about 6500 B.C and the reverse between 6500 B.C. and 500 B.C. After 500 B.C. there is moderate arboreal pollen and low grass pollen. Using information from Collins and Bousman (2015:78), it is argued that during the middle Holocene about 3000 B.C. grasslands may have extended east into the western edge of northeastern Texas but that by 500 B.C. oak woodlands were re-established and continue to the present. A 14,000-year stable isotopic record from the Aubrey site has documented similar changing climatic conditions in the Prairie-Savanna setting (Humphrey and Ferring 1994:Figure 8) in the upper Elm Fork River valley north of Denton. From ca. 11,000 to 7500 years ago, there was evidence of more rainfall, more humidity, and cooler temperatures than the present day climate. This pattern of additional moisture was repeated between 2,000 and A.D. 1, and again after approximately A.D. 1000. Conversely, the climate was dryer between 5500 to 2000 B.C. and again between A.D. 1 and A.D. 1000. These climatic cycles have implications for the location of the prairie-savanna border, the presence or absence of faunal resources, particularly bison, and the natural resource potential of the Fannin County area. Dendrochronological analyses (Stahle and Cleaveland 1994) provide more detailed information about climate of the past 1000 years. The tree rings document numerous wet and dry periods with major droughts in the late A.D. 1200s, the mid-1400s, the 1600s, and the mid-1700s. These varying conditions would have impacted springs and overall drainage flow as well as the presence and abundance of native plants and animals. Furthermore, the ability to cultivate and harvest edible plant foods would also have been affected by the climatic changes. While there is not a consensus among these authors with regard to the dating of changes, there is general agreement that grasses with an associated dry climate were present between 5000-6000 B.C. and 500 B.C./A.D. 1.

HISTORICAL BACKGROUND

The cultural history of the area is briefly summarized below in Table 1. This chronology for occupation of the area relies on several published resources (Mahoney 2001; Perttula 1998, 2004, 2012; Perttula et al. 2014; Perttula et al. 2015b).

Table 1. Cultural Chronology.

| Period | Years |
|---------------------------|----------------------|
| Anglo-American settlement | A.D. 1815 to present |
| Historic European | A.D. 1700 to 1815 |
| Historic Caddo | A.D. 1680 to 1860 |
| Late Caddo | A.D. 1400 to 1680 |
| Middle Caddo | A.D. 1200 to 1400 |
| Early Caddo | A.D. 1000 to 1200 |
| Formative Caddo | A.D. 800 to 1000 |
| Woodland/Fourche Maline | 200 B.C. to A.D. 800 |
| Late Archaic | 2,000 to 200 B.C. |
| Middle Archaic | 4,000 to 2,000 B.C. |
| Early Archaic | 6,000 to 4,000 B.C. |
| Paleoindian | 12,000 to 6,000 B.C. |

Prehistoric Occupation

The earliest Native American occupation seems to have occurred in Fannin County was during the early Paleoindian period when fluted Clovis dart points were being made. Dozens and maybe hundreds of Clovis points have been collected from the North Sulphur River channel in the southern part of the county but only one has been documented (Bever and Meltzer 2007:Table 1; Carley 1986; Todd and Skinner 2007; Jennings 2008; Davis et al. 2014). Virtually all these Clovis points were made from exotic cherts that occur elsewhere in Texas and Oklahoma. None of these finds came from well-dated geologic contexts. The only geological profile in the county that extends to pre-Clovis time is from the bank of the North Sulphur River at Ralph Hall Reservoir (Skinner et al. 2005; Bousman and Skinner 2007). This profile was collected on a 9.5 m deep river bank where 17 distinct zones were described, and three radiocarbon dates collected (Skinner et al. 2005:29; Bousman and Skinner 2007:42). The first sample came from near the bottom of Unit 3 and was dated to 10,860±140 B.P. (7.1 m below the surface). The second sample was from the top of Unit 4 (7.2 m below the surface) and was dated to 15,510±330 B.P., while a sample from the bottom of the unit dated 17,470±330 B.P (9.25 m below the surface). Additionally, a cobble core found on the face of the adjacent riverbank could possibly date to the time of Clovis or earlier (Skinner et al. 2005:29; Bousman and Skinner 2007:42). Excavations at the North Central Texas Aubrey Clovis site (41DN479) demonstrated that Clovis people were hunting a wide array of large and small mammals as well as utilizing raw material for lithics from sources more than 200 kilometers away (Ferring 2001). In addition to early point types, such as Clovis and Folsom, later styles including San Patrice, Dalton, and Plainview have been found in the area (Story 1990:177-211; Johnson 1989; Jennings 2008). It is apparent that the surrounding area was visited or occupied during the Paleoindian period, but evidence of undisturbed campsites has not been found. The low-density sites and the abundance of exotic

chert artifacts found in the drainage channels of the North Sulphur River indicate that Paleoindian people were nomadic hunters and gatherers (Mahoney 2001:8) who came to Fannin County on a periodic basis for the purpose of acquiring specific resources or spending the winter in an environment that was protected from the harsh winters on the high plains (Skinner et al. 2005:62-63). They may have come as “ridge runners” (Hofman 1988; Thurmond and Wyckoff 1999:245-246) but evidence of such a mode of transportation has not been thoroughly documented in Northeastern Texas. The transition from the Paleoindian period to the Archaic has recently been discussed as a series of economic, settlement, technological, and social changes that can be termed the “ProtoArchaic” (Bousman and Oksanen 2012:224).”

During the Archaic, which is divided into Early, Middle, and Late periods, groups continued to live as mobile hunting and gathering bands (Perttula 2016a). Sites dating to this period were briefly and seasonally occupied; they are represented by lithic scatters, some of which were found at repeatedly revisited locations. Burned rock features occur at Middle Archaic sites where plant cooking was more evident. In the southern part of Fannin County, Middle Archaic people harvested mussels from the North Sulphur River channel (Skinner et al. 2005:47-48). Mussel shells were also found at several prehistoric sites along upper Bois d’Arc Creek (Hsu 1968:10-17) as well as in the LBCR study area (Davis et al. 2014:211). In the Late Archaic, increased population density limited group mobility, causing groups to settle into restricted territories and to focus on the use of locally available lithic sources for chipped stone tools (Perttula 1998:17–18).

During the Woodland period, a sedentary lifestyle is indicated by the presence of circular and rectangular houses; undecorated thick-walled-grog tempered Williams Plain pottery, and increased amounts of native plant foods. Fourche Maline ceramics traditions, like Williams Plain, are known for their plain and minimally decorated vessels (Ellis 2013:139). The vessels are typically thick-walled, flower-pot shaped jars and bowls with flat disc-shaped bases (Schambach 1998:81-82, Schambach 2002:91-93, Dockall et al. 2008:22, Ellis 2013:139). These ceramics are typically tempered with a variety of materials including clay/grog, bone, grit, and/or sand (Schambach 1998:81-82, Ellis 2013:139) Schambach (1998:25) concluded in his report on the Cooper site in Arkansas, that 9 millimeters (mm) was the mode thickness for Williams Plain ceramics. He went on to state that the mode thickness was 7 to 8 mm in the larger collection from the Means site (Schambach 1998:82). Ellis (2013:139) states that the thickness is highly variable, but average 12 mm.

While Gary dart points were used concurrently with arrow points during the Woodland period, arrow points would eventually replace the dart point (Perttula 2004:376). During excavations at the Gene and Ruth Ann Stallings site (41LR297), north of Paris in Lamar County, numerous postholes were uncovered, which possibly represent a rectangular house 80 ft long and more than 20 ft wide (Skinner 2007, 2016). A house with a similar pattern and size was uncovered at the Poole site (3GA3) in southwestern Arkansas (Wood 1981). If the postholes at 41LR297 represent a rectangular house, the Stallings site and the Poole site would be the only known examples of rectangular Fourche Maline houses. Coles Creek pottery and associated chipped stone artifacts appeared after A.D. 600. Prehistoric Native Americans at this time settled into small hamlets and camps, dispersed within recognizable territories (Perttula et al. 1993:99). These technological

changes coincided with a gradual population increase. The Ray site (41LR135) in east central Lamar County contains a deposit that spans this period (Bruseth et al. 2001).

Formative Caddo people are first recognized about A.D. 800 and this time period lasted until approximately A.D. 1000. Horticulture was developing, but hunting and gathering continued to provide the main foods (Mahoney 2001:10). Settlements consisted of villages, hamlets, and single-family dwellings. Some of the villages contained associated platform and/or burial mounds (Perttula 2004:383). In the Early Caddo period, hunting and gathering subsistence strategies were supplemented by the cultivation of maize, squash, and several kinds of native seeds (Perttula 2004:383; Mahoney 2001:10). The material culture was as diverse as during later Caddo times, which includes various types of ceramics, lithic tools and arrow points, as well as axes, celts, pipes, and various ground stone tools. The Early Caddo period marks a transition from undecorated plain wares that dominate Woodland Period assemblages to a more diversified collection of ceramics, particularly the introduction and florescence of a relatively wide variety of decorative elements potentially associated with different Caddo groups, including the first examples of engraved and polished vessels (Emerson and Girard 2004:57; Perttula 2013:186). Coles Creek Incised ceramics, which generally occur in high frequencies at Caddo sites in Northwest Louisiana and parts of Arkansas (Kidder 1990), are relatively marginal in Early Caddo assemblages in East Texas (Perttula 2011:70-71). Decorative types from East Texas Caddo sites include fine wares Hickory, Holly, and Spiro Engraved, utility wares Coles Creek, Davis, Kiam, East, Crockett Curvilinear, and Dunkin Incised, Weches Fingernail Impressed, Hollyknowe Ridge Pinched, and Crenshaw Fluted (Perttula 2013:186). Incising is characteristic of utility ware decoration while burnishing and post-fire engraving are the decorative techniques associated with fine wares (Perttula 2011:51). Despite the incorporation of decorative techniques in ceramic production during the period, the majority of Early Caddo assemblages are still composed of mostly plain wares (Perttula 2011:50). Grog is the most common temper used for Early Caddo ceramics, but bone, hematite, and ferruginous sandstone also occur, though almost exclusively in utility wares (Perttula et al. 2010:23). Perttula (2015:29) notes that pre-AD 1400 assemblages with a high proportion of bone temper (>40% of the assemblage) primarily occur at sites located in the middle Sabine River basin. Additionally, Perttula (2011:65) describes Caddo ceramics from the Boxed Springs site (41UR30) in Upshur County as having less than 7 mm thick walls on average and notes that this is consistent with other Early Caddo assemblages.

Middle Caddo period sites along the middle Red River have been related to the Sanders Phase; they include dispersed farmsteads and hamlets, along with a few large villages. The period is characterized by single and multiple earthen mounds that contained burials, some with abundant and exotic grave goods, indicating the presence of high status individuals (Perttula 1998:19). The best-known site from this period and in the Red River Watershed in Texas is the T. M. Sanders site (41LR2), which is located adjacent to the mouth of Bois d'Arc Creek. The site is located approximately one-half mile south of the Red River and is at an elevation of approximately 450' amsl. The site includes of two earthen mounds, one of which contained 21 graves, many with multiple burials, with a wide variety and number of grave goods (Krieger 1946:171-218; Jackson et al. 2000). Conch shell dippers, gorgets, and shell beads were found with burials at the site, as well as on the plowed site surface. These correspond to artifacts attributed to the Southeastern Ceremonial Complex, previously referred to as the Southern Death Cult (Krieger 1946:177; Waring and Holder 1945; Hamilton 1997; Skinner et al. 1969:106).

Other exotic artifacts recovered from the site include bar gorgets (Harris 1953a), ear spools, stone pipes, and celts. Some authors (Bruseh et al. 1995; Schambach 1999, 2000) have debated whether this site was an outpost for the Spiro site in Oklahoma. The Sanders Phase was characterized by exchange between groups in Northeastern Texas, the South Plains, and the Mississippian people of the Southeastern Ceremonial Complex. The material for the polished Ouachita sandstone elbow pipes could have been collected locally or may indicate trade with Oklahoma residents. Krieger (1946:194-195) discusses that the houses appear to be four-sided with one side open. He goes on to state that the fourth side might have been unintentionally destroyed while excavating, but at least in one instance he was confident that the structure had three walls and one open side. Agricultural hoes made of freshwater mussel shells and bison-scapula were found at the site (Jackson et al. 2000:34; Krieger 1946:183-184, 194). More recent investigations at the Sanders site indicate that the site was likely occupied briefly in the Late Archaic through the Woodland period (Perttula et al. 2015:82). The authors go on to state that the first principal ancestral Caddo components date to the Middle Caddo (ca. A.D. 1100-1300), and the material cultural from this period represents the Sanders Phase (Perttula et al. 2015:82). The final occupation at the site was during the late 17th through mid-18th century, which the authors state as part of the Womack Phase of the Historic Caddo Period (Perttula et al. 2015:82).

Perttula et al. (2016:87) has recently identified and redefined the ceramic assemblage from the Sanders site which represents the Middle Caddo Period. There are ten ceramic types, two of which are newly defined, while another, Sanders Plain, has been redefined as Sanders Slipped (Perttula et al. 2016:87). Perttula et al. (2016:Table 2) lists Bois d'Arc Plain, Bois d'Arc Plain, *var. Crawford*, Canton Incised, East Incised, Haley Engraved, Hickory Engraved, Maxey Noded Redware, Monkstown Fingernail Impressed, Sanders Engraved, Sanders Incised, and Sanders Slipped as present in the assemblage from the Sanders site. The principal types are Bois d'Arc Plain, Sanders Engraved, Maxey Noded Redware, and Sanders Slipped. Sanders Plain was originally defined by Brown (1996:401-403), and is described as a grog-tempered, slipped, and undecorated type. However, this is not completely true, as the slipped element is a form of decoration, therefore Perttula (2016:87) has renamed it Sanders Slipped. Bois d'Arc Plain is defined as non-slipped plain grog- and/or bone-tempered wares. This new ceramic type is a distinct class in the form of Bois d'Arc Plain, *var. Crawford*, where the vessels have scalloped and cut lips (Perttula et al. 2016:87). Sanders Incised is the last of the newly defined types, and it refers to vessels with similar decoration as the Sanders Engraved, except that the decoration is executed in the unfired paste when the vessel was leather-hard (Perttula et al. 2016:87).

Large platform mounds are associated with Middle Caddo times, further indicating socially complex societies, as inferred from the Sanders site. These sites may include the Harling Mound (41FN1) in Fannin County (Davis 1962a and b), but also the Mackin Mound (41LR36) in Lamar County (Mallouf 1976) and the Fasken Mound (41RR1) site in Red River County (Perttula et al. 2001). A more recent analysis of the collections held at the Texas Archeological Research Laboratory (TARL) for the Harling Mound demonstrate that the site was occupied during the same times as the Sanders site (Perttula 2015c:83). A Middle Caddo shaft burial was reported from the Bentsen-Clark (41RR41) site in Red River County. According to Banks and Winters (1975:72), the artifacts associated with the burial in Feature No. 1 are typical of the "Alto, Sanders, Spiro, and Haley foci" and suggest a tentative date approaching A.D. 1300.

In the Late Caddo period, there is a shift in site location from the major drainages to the headwaters of smaller tributaries, which resulted in numerous small hamlets scattered throughout most of Northeastern Texas. However, major sites such as Sam Kaufman ([Roitsch] 41RR16), Wright Plantation (41RR7), and the Belcher Mound (16CD13) (Harris 1953b; Skinner et al. 1969; Webb 1959; Perttula et al. 2001) were continuously occupied on the banks of the Red River in Texas and Louisiana during this period. Farming was an important contributor to their diet (Perttula 2008a). The use of maize peaked during the Late Caddo period as observed in the isotopic and skeletal records (Wilson 2012; Wilson and Perttula 2013, Perttula et al. 2014). Materials were traded from the Plains/Southwest to the Texas Gulf Coast (Perttula 1998:12; Vehik 2002) to the Southeastern United States (Skinner et al. 1969:101, 103). Late Caddo assemblages continue the trend of diversification, most notably in the expansion of vessel form types including the incensario form and effigy vessels, along with a wide variety of jar and bowl forms and an increased use of appliques (Perttula 2013:Figures 10-15). Engraved ceramics become more ubiquitous during the Late Caddo period in East Texas (Perttula 2015b:22). These engraved fine wares include McCurtain Phase Avery, Simms, and Hudson Engraved, Texarkana Phase Barkman, Hatchel, Hodges, Taylor Engraved, and Titus Phase Ripley, Wilder, Bailey, and Turner engraved, Frankston Phase Poyner Engraved (Perttula 2013:194-198). Additional fine wares include Keno and Foster Trilled. The period also marks an increased usage of brushed utility wares, particularly in Frankston and Titus phase sites (Perttula 2015b:23). Shell became a prominent tempering agent at sites located in the upper Sulphur River and middle Red River during the Late Caddo period (Perttula 2015b:30). Most of the Late Caddo red-slipped ceramics have shell temper (Perttula 2015b:23). Many of the traditions and styles that define the Late Caddo period carry over into the Historic Caddo period in the middle Red River area.

There is a break in the archaeological record for a period of two hundred years, at the end of the Late Caddo period. There is no evidence of Spanish or French occupation in Fannin or Lamar counties. The Womack site (41LR1) represents the primary evidence for historic Native American occupation; it is located on a bluff, overlooking the Red River, in northern Lamar County (Harris et al. 1965; Schambach 1996). Recent analysis of the collections held at TARL, demonstrate that the site was occupied ca. A.D. 1700-1730, and the material cultural found at the site defines the Womack Phase of the Historic Caddo period (Perttula 2015d:31). The Womack Phase has been identified in the collections from the Sanders, Goss Farm, and Harling Mound sites (Perttula 2015c:31). Glass trade beads were recovered from individual burials at the Sanders site (Harris 1953a:20) and 478 glass beads were found on the surface south of the mounds (Harris and Harris 1967:20; Perttula et al. 2015). Harris also found an effigy-smoking pipe with the head of a lamb or sheep on the surface near one of the graves (Harris 1953a:20). The pipe is trade material from the early 1800s (Perttula et al. 2015:77), but the glass beads were dated to the 1700s (Harris and Harris 1967:131; Duffield and Jelks 1961:70-71). A hundred glass trade beads were also recovered from the Goss Farm site (41FN12 [A1-2]; Harris 1953a:20). Recent analysis of the Goss Farm collection at TARL confirms that the site has Sanders and Womack phase artifacts, however, it also appears to contain Late Paleoindian and Woodland occupations (Perttula 2015a:57).

Based upon the information obtained from the limited previous investigations done, it appears that Native Americans have repeatedly occupied the area since the Paleoindian period. Artifacts

dating to this period have been identified from the Goss Farm site (Perttula 2015a:57). Additionally, Perttula's recent analysis of collections demonstrates that there is some evidence of Late Archaic occupation at the Sanders site (Perttula et al. 2015:82), and he goes on to say there is a Woodland occupation at the Sanders, Harling, and Goss Farm sites (Perttula et al. 2015:82; Perttula 2015a:57 and c:83). The most intense occupation of the area appears to have occurred during the Sanders Phase of the Middle Caddo and then again during the Womack Phase of the Historic Caddo until the early 18th century (Perttula et al. 2015:82).

Historic Occupation

Given that there is an overlap of time with the Historic Caddo and Historic European periods, there is evidence of interaction between the Caddo and Europeans. The first Europeans to encounter the Caddo people were the remnants of de Soto-Moscoco Entrada between 1542 and 1543 (Girard et al. 2014:102). However, based on the reconstructed path the entrada took through the Caddo region south of the Arkansas River and into East Texas, it is unlikely that they had direct contact with the Caddo population living in the Bois d'Arc Creek Watershed. It would not be until the mid-1600s that more significant interactions between the two groups occurred in the form of explorers, fur traders, missionaries, and soldiers (Girard et al. 2014:106). Perttula's recent work on site collections demonstrates that the Harling, Goss, and Sanders sites have European trade goods (Perttula et al. 2015b:75; Perttula 2015a:57 and c:81). A single 18th century blade gun flint, possible kettle fragments, as well as brass tinklers, a Spanish *Real* coin (1759-1788), iron spikes, clay pipe fragments with the head of a sheep or lamb, and more than 50 white and blue glass beads have been recovered from the Sanders site (Perttula et al. 2015b:75). Glass beads and metal buttons were found at the Goss Farm site (Perttula 2015a:57), and glass beads were also part of the collection associated with the Harling Mound (Perttula 2015c:81). Based upon these artifacts, it is clear that during the Womack Phase, the Caddo living in the area had access to or interaction with early Europeans. The various Caddo groups were forcibly pushed out of East Texas between 1836 and 1839 (Girard et al. 2014:130). While some relocated to Indian Territory, others moved into the upper Brazos River drainage. This group remained there until 1859, when they were forced to relocate to the Washita River Valley in Indian Territory (Girard et al. 2014:130).

Fannin County was created from a portion of Red River County and was one of the first counties founded in Texas. On December 14, 1837, the Republic of Texas Congress named the county after James Walker Fannin, Jr., a Texas Revolution hero (Carter 1885; Hodge 1966; Scott 1982; Strickland 1930; Tate 2001; Pigott 2014). Texas became a state on December 29, 1845, and, shortly thereafter, the Texas Legislature approved the present boundaries of Fannin County. Most early settlers of Fannin County were from southern states, particularly North Carolina, Tennessee, and Kentucky (Strickland 1930; Templin et al. 1946). The original county seat was located at Old Warren, also known as Fort Kitchen, on the Grayson/Fannin county line. Old Warren was established in 1836 when Abel Warren, an Indian trader from Fort Smith, Arkansas, settled there. He built a fort to serve as protection against raiding Indians and a trading post for friendly tribes (Hodge 1966). Old Warren was home to the first courthouse, school, post office, and Masonic Lodge in the county. Due to an increased concern over Indian attacks and a political shift, which strengthened the community of Bois d'Arc the county seat was moved from Old Warren to the city of Bois d'Arc on January 16, 1843. In 1844, Bois d'Arc was renamed Bonham (Pigott 2014).

Historically, several tribes inhabited the area: the Cherokee, Tehuacana, Keechi, Waco, Caddo, Shawnee, and others. Fannin County's early settlers describe numerous conflicts with the Native Americans in the area. Stories of Natives murdering and mutilating local residents, as well as tails of horse and livestock thievery were common along Bois d'Arc Creek (Strickland 1930). Early accounts state that a Shawnee Village was situated northeast of Bois d'Arc Creek's confluence with Honey Grove Creek (Strickland 1930:287; Brune 1981:181). The village was a mile northeast of the proposed reservoir and due north of the Shiloh Church and Cemetery. Between 1837 and 1839, tensions escalated between the settlers and Native American groups in the area. The Shawnee were described in most oral tradition stories, but some conflicts were described between the Caddo, Choctaw, and Kickapoo (Strickland 1930). According to early accounts in 1839, Holland Coffee, an early settler, used his prestige and influence to negotiate a peace treaty with the Natives until they were finally pushed out of the county a few years later (Strickland 1930:298).

When the Civil War broke out in April 1861, Fannin County's citizens supported the Confederacy and secession from the Union. Several companies of men from Fannin County joined the Trans-Mississippi Confederate army. Bonham was the site of three important Confederate facilities during the war: a hospital for the soldiers, a commissary which supported seven brigades and the military headquarters of the Northern Sub-District of Texas, Confederate States of American (C.S.A.) In addition, Camp Benjamin was established in the Bois d'Arc Creek floodplain, northeast of Bonham. Camp Benjamin was occupied by the 9th Regiment Volunteer Texas Infantry from December 13, 1861 until January 1, 1862. At that time, the 10 company regiment left for Memphis, Tennessee (Brothers 2010). Over 1,200 enlisted men and officers lived at the camp. A concrete cross was erected in 1980 at the reputed location of a cemetery, where at least seven 9th Regiment soldiers were buried after dying from measles or pneumonia (Honey Grove Signal-Citizen 1980).

After the Civil War, the county began to prosper; many new businesses opened between 1865 and 1900. Prior to the war, Fannin County was home to five manufacturing plants; by 1870 that number had increased to 54. In 1872, the Fannin County Bank opened and in 1873 the Texas & Pacific Railway built its tracks across the county. The county also experienced record growth thanks to its agricultural economy; the major crops were corn and cotton (Pigott 2014). Between 1860 and 1883, new schools opened to serve the growing population and in 1888, the Fannin County School Board was organized to educate the county's children.

The first three decades of the 20th century brought many changes to the county. In 1900, the population reached a record high of 51,793; farms produced record numbers of swine and bushels of corn, and over 58-percent of the county was working farmland (Templin et al. 1946). The number of farms reached over 7,000; 35 percent were owner-occupied farms and the remainder were tenant farms. Cotton production peaked in 1920, after which production of all crops began to decline (Templin et al. 1946). Although the 1920s saw a sharp reduction in the number of dairy cows and milk production, the number of beef cattle began to increase. In 1925, the Lone Star Gas Company ran natural gas lines through the county. In 1929, Jones Field airport was built on the north side of Bonham (Pigott 2014).

As in most areas of the United States, the Great Depression of the 1930s imposed economic hardship on the county's businesses and residents; a hardship that lasted until World War II. The number of manufacturing jobs decreased to a record low of 310 and farms were only 46-percent of their 1920 value. By 1940, the number of farms had dwindled to 4,638, although 83.5 percent of the county was still working farmland (Templin et al. 1946). Cotton production steadily decreased from the 1930s through the 1950s and, by 1987, only 337 bales were produced in the county. Corn production decreased until the late 1980s; wheat, peanuts, and sorghum increased during the same period. The only livestock to show a continual increase throughout the remainder of the century was beef cattle. By the end of the century beef cattle outnumbered milk cows nearly five to one (Pigott 2014). That period between the Great Depression and WWII also saw the population of the county decrease and then finally stabilize at about 40,000 residents. The population began to decrease again in the 1950s; by 1970 it had decreased to the population level of the 1880s. Throughout its history, the county's racial percentages have remained between 10- and 20-percent (Pigott 2014).

In 1955, the remainder of FM 1396 from north of Allen's Chapel, through Carson and Lamasco, to FM 273 was improved and paved. While the new road provided easy access from the rural areas to larger communities, such as Honey Grove and Bonham, it reduced the need for tiny, local communities, which had at one time been invaluable to farmers and ranchers (Pigott 2014).

Between 1947 and 1987, employment in manufacturing companies more than doubled from 15- to 37-percent, mostly in the lumber and wood products industry (Pigott 2014). Service industries also increased, as did the banking, retail, wholesale, construction, utilities, and transportation industries. These businesses are still prominent in the county's economy.

Previous Archaeological Investigations in Fannin County

The first archaeological work conducted on the property was in 1930, when a team from the University of Texas in Austin (UT) excavated several skeletons and recovered a few artifacts from a prehistoric Caddo site (41FN12) on the Goss Farm near the mouth of Bois d'Arc Creek. According to the notes housed in the collection at TARL at UT, B.B. Gardner excavated three burials from the Goss Farm site (TARL 2014). According to Gardner, Burials 1 and 2 were relatively close together in a flexed position between 45-76 centimeters (cm) below the surface (cmbs) and contained no funerary objects (Perttula 2015a:52). Burial 3 was 30 m south of the first two and contained an adult with cranial deformation. Unlike the other two, this burial was placed in an extended position approximately 30 cmbs (Perttula 2015a:52). The third burial contained a shell-tempered bowl that was decorated with two sets of two applied nodes and two sets of three applied nodes (Perttula 2015a:52). Recently Tim Perttula reanalyzed the collection in an effort to build a database for Caddo ceramics in Texas. Perttula (2015b) states that the decoration is similar to that found in the upper Brazos and Red River basins of North Central Texas identified as Late Prehistoric Southern Plains vessels (i.e., a variety of Nocona Plain). Additionally, Gardner noted that there were midden deposits and probably a large number of burials on the Goss Farm alluvial landform (1930:15-19). Gardner also encountered a 15-cm-thick ash feature during his excavations that was never fully defined. He believed it could be evidence of extensive burning from hearths or the remains of a burned structure (Gardner 1930; Perttula 2015a:52).

In 1931, Gardner and A.T. Jackson from UT, began excavations on the Sanders site on the east bank of Bois d'Arc Creek across from the Goss Farm. At the time, this was the first major discovery of Mississippian prestige artifacts found west of the Mississippi River (Jackson et al. 2000:1; Krieger 1946). Overall more than 60 burials were found to contain artifacts including shell beads, several types of ceramic vessels, gorgets, pipes, ear spools, and numerous dart and arrow points. After UT finished digging the site, it was revisited various times by avocational archaeologists from the Dallas Archeological Society. Two of these avocational archeologists, Rex Housewright and Lester Wilson from Wylie, Texas, visited the Goss and Sanders farms several times beginning in the 1930s. On one of their visits to the Sanders site in 1937, they, along with Henry Hanna (1950), uncovered some additional burials (Housewright 1941). The first burial contained three individuals in the extended supine position facing east. They encountered the burial while trenching north/south across the burial mound (East Mound also referred to as Mound 1) approximately 50 ft from its crest. There were two adults and an infant. The smaller adult was on top of the larger adult. They describe the smaller adult cradling the infant in its left arm and that both skulls had been badly smashed (Housewright 1941:37). All were described as being in a red clay matrix and the burial contained funerary objects. The larger adult had 50 beads near the left elbow and a shell gorget under the chin. No ornaments were found with the other adult, but the child had a bone hairpin near the skull. It was while excavating these individuals that they found a fourth individual. However, this burial was encountered at a slightly shallower depth than the group and was buried in a flexed position. A bison scapula-digging tool was found near the knees, oriented up as if it had been used to dig the burial pit. The burial had a shell gorget near the chest, but no other funerary objects were found. Housewright (1941:38) stated that this was the first flexed burial to be found at the Sanders site and hypothesized that this burial could have been intrusive. However, he also thought it might represent a slave who had been buried in the tradition of his own people. While conducting research on burial customs, he found that Natchez Indians from Mississippi had been described using a similar custom (Housewright 1941:38). Housewright and Wilson worked closely on many sites across North Texas and it has been stated that their combined collections could be the one of the most representative examples of Wylie and Sanders focus artifacts in existence (Harris and Vance 1989:1). After Wilson passed away in 1988, his dying wish was to have his ashes scattered over the Lamar County sites, since his favorite Wylie Focus sites were under Lake Ray Hubbard (Harris and Vance 1989:1).

On one of his many visits, Housewright (1946) describes uncovering a child's burial at the Goss Farm. The burial included a necklace of more than 260 turquoise beads and two turquoise pendants. These were the main details he published in *The Record* (Housewright 1946). However, Housewright's personal notes are now part of the private "Vance-Wilson-Housewright Collection" in North Texas. While examining his original hand-written notes, it was discovered that he describes finding the burial on the west bank of Bois d'Arc Creek approximately 150 yards northwest of the large Sanders Mound (West Mound also referred to as Mound 2), which is on the east side of the creek (Housewright 1940). He states that the burial was north of the crest on a natural ridge running parallel to the Red River. This description places the site more than half a mile north of where the Texas Archeological Sites Atlas ([TASA] 2014) shows the Goss Farm site. This description also matches more closely the one Gardner described as being closer to the mouth of Bois d'Arc Creek. A few years later in 1951, R.K. Harris visited the Goss Farm and found nearly 100 trade beads, 75 flint specimens, a turquoise bead, and the base of an early

Plainview-like dart point (Harris 1951:20). A couple years later, Harris (1953a:20) collected a cache of four mussel shell hoes from the site. It was this cache that convinced him that mussel shell was used by prehistoric populations as hoes. He described the mussel shells as being well-worn and polished on the digging edge. Based upon Perttula's (2015a:57) recent analysis of the Goss Farm collection, the site contains artifacts dating from the Late Paleoindian and Woodland periods, then during the Sanders Phase (A.D. 1100-1300) of the Middle Caddo period and most intensely during the Womack Phase (ca. late 17th to early 18th century) of the Historic Caddo period (Perttula 2015a:57).

In August of 1950, the Harling Mound (41FN1), then referred to as the Morgan Mound, was first visited by archaeologists R. L. Stephenson, E. O. Miller, and Lester Wilson (TARL 2015; Perttula 2015c:71). They describe an abundance of artifacts on the surface in the plowed fields. They also note that the mound was heavily overgrown with trees and had never been cultivated. This description would match the 1937 and 1948 aerials, which appear to show the mound as a dark spot surrounded by cropland. Based on this information it appears Morgan never farmed the mound. The crew also noted that there was a historic cemetery dating to the early 19th century on the mound surface (TARL 2015; Perttula 2015c:76). Additional research into the collection revealed that in 1963, a portion of a Beal headstone was in the collection. This cemetery on top of the mound represents the missing Beal Cemetery. The skeletal collection contains ten individuals, which were partially excavated by E. Mott Davis in 1960, and then by J.R. Gipson in 1963 (TARL 2015, Perttula 2015c:76).

After the initial visit in 1950, the site was later investigated in 1959 by archaeologists from UT (TARL 2014). Curtis Tunnell first visited the site in 1959, where he and Lathel Duffield mapped the mound as approximately 230 ft long, 170 ft wide, and 7 ft high (Tunnell 1959). E. Mott Davis conducted limited excavations on the mound in 1960 (Davis 1962a and 1962b). During the excavations, no prehistoric burials were found, but ceramics recovered dated to the Sanders Phase. His notes at TARL (2015) describe that they encountered a couple of historic burials in the top of the mound. According to Davis (1962b:489), the mound was likely constructed in one phase. He estimated that the UT team excavated approximately eight percent of the cubic content of the mound. Davis speculated that the mound functioned as a frontier outpost for the Caddo and tribes of the plains (Davis 1962b:480). The excavation was prompted by R. A. Harling's desire to level the mound to improve his ability to farm the area. A final report on this investigation was never written and it appears the site was destroyed, as a letter from Mr. Harling, dated January 10, 1963, states that the demolition had begun, and the site was completely destroyed. Perttula (2015b) concluded that the site was first occupied during the Woodland period and then more substantially by ancestral Caddo groups. Artifacts analyzed in the collection include 475 ceramic sherds, a ceramic pipe sherd, chipped stone tools, ground stone tools, and a glass bead. Additionally, Perttula (2015b) had three radiocarbon samples dated for the site, which confirm Middle to Historic Caddo occupation at the site.

According to TASA (2014), the first recorded professional survey in Fannin County was conducted in 1960 for the proposed Brushy Creek Reservoir, now called Valley Lake, located near Bells, TX in west central Fannin County. During the survey, several prehistoric lithic scatters were recorded (Davis et al. 1962); they range in age from the Archaic to Caddo. Ground stone fragments were also found at one site.

The Texas State Building Commission (now the Texas Historical Commission) and the Texas State Water Development Board performed an archaeological survey of the proposed Timber Creek and Bois d'Arc Reservoirs in 1968 (Hsu 1968). Timber Creek Lake became Lake Bonham. Two sites (41FN15 and 41FN16) were discovered during the survey of Timber Creek Reservoir. Site 41FN15 consisted of a lithic scatter, a Scallorn point, two Gary points, and a potsherd. A Gary point and lithic scatter made up site 41FN16. Both sites were found on the edge of the first terrace of Timber Creek.

Bois d'Arc Reservoir was not constructed; the proposed dam location was upstream from the present LBCR location. Thirteen sites (41FN17 through 41FN29) were found adjacent to Bois d'Arc Creek, approximately seven miles southwest of Bonham. Sites were found on knolls within the floodplain and on terraces adjacent to Bois d'Arc Creek. Sites contained mussel shells, animal bones, pottery, flakes, arrow and dart points, celts, axes, fire-cracked rock (FCR), and even evidence of human burials. It is important to note that these sites were found either eroding out of creek banks or on the surface of plowed fields. A comprehensive survey was not done. One site of particular interest (41FN19) is located on a knoll adjacent to the old Bois d'Arc Creek channel (Hsu 1968:11-12). The knoll, and presumably the site, is 300 m long by 50 m wide. Hsu's collection included two projectile points, two sherds, and lithic debris. The landowner had collected a small ground hematite axe, a polished full groove axe, the proximal half of a polished cylindrical celt, and two incised sherds from the site surface. These sites ranged in age from the Middle Archaic to the Caddo. Since subsurface testing was not part of this survey, there is no substantive information about the potential of finding buried cultural resources in the Bois d'Arc Creek floodplain. However, numerous avocational archaeologists have reported finding dart points in the eroding channel bed.

In 1989, Southern Methodist University (Jurney et al. 1989) conducted an archaeological evaluation of three units of the Caddo Grasslands in Fannin County. According to their report, the Bois d'Arc Creek floodplain has high potential for prehistoric archaeological sites, while the valley slope has a medium potential (Jurney et al. 1989:Figure 33). Figure 34, in the report, showed that the uplands have a high potential for historic sites. The authors stated that the areas of low potential for historic sites are too far removed from historic transportation routes such as roads and railroads. Additionally, the bottomlands appear to have a medium potential for historic sites, such as crossings or mills, since flooding prevented domestic occupation (Jurney et al. 1989:123).

In 2005, ARC (Skinner et al. 2005) investigated approximately 1,700 acres at the proposed location of Lake Ralph Hall, which will be constructed in Fannin County, north of Ladonia, in the North Sulphur River floodplain. Seventeen historic and prehistoric sites were recorded in the course of the survey (41FN60 through 41FN76). ARC recommended further testing for a Middle to Late Archaic campsite (41FN68), a deeply buried Middle Archaic campsite (41FN66), and near the cobble core/chopper tool site (41FN73). The date for the core/chopper may be older than 10,860±40 B.P. (Beta 206953). Further survey should lead to the discovery of more deeply buried archaeological sites (Bousman and Skinner 2007).

Various small-scale surveys have been conducted throughout Fannin County. Most of these studies have found little or no evidence of prehistoric or historic occupation. ARC surveyed for the South Wastewater Interceptor in Bonham, which tested in the Bois d'Arc Creek floodplain, as well as on the upland toe slope and the overlooking upland ridge, but did not find sites in those settings (Skinner and Davis 2009).

In the surrounding counties, major investigations have been conducted in the South Sulphur River valley at Cooper Lake in Delta and Hopkins counties. Survey, testing, and site excavation were carried out along Sanders Creek just to the east of Bois d'Arc Creek at Pat Mayse Reservoir and at Camp Maxey. Pine Creek is just to the east and studies have been conducted there at Crook Lake, B&B Landfill, and at the Gene Stallings Ranch near Powderly. The Womack site, a historic Native American site, is located adjacent to the Red River channel in northwest Lamar County. Further to the east in Red River County, survey was conducted at Big Pine Reservoir and test excavations were conducted at the Mackin Mound site. The Texas Archeological Society (TAS) conducted summer field schools at the Sam Kaufman site in the early 1990s subsequent to site discovery and major excavation at the site in 1968. TAS also excavated the Ray site in Lamar County. In adjacent parts of Oklahoma, relevant site information is available from excavations at Hugo Reservoir, McGee Creek Reservoir, and Pine Creek Reservoir.

More recently and the most relevant survey conducted in the area, was that done by ARC for the LBCR project area in 2011 and 2013 (Davis et al. 2014). The proposed reservoir will inundate 16,526 acres of Bois d'Arc Creek's floodplain and terraces. The project's research design focused on three major research topics: Late Pleistocene Geomorphology, The Shifting Ecotone, and Settling Into the Region (Skinner et al. 2010). The research design developed a sampling strategy that focused on landforms likely to have been occupied prehistorically and historically. Approximately 4,500 acres were surveyed. The survey was amplified by walking approximately 40 miles (500 acres) of creek channels, bringing the survey acreage total to 5,000 acres. A total of 58 sites (28 prehistoric, 26 historic, and four prehistoric/historic) were recorded (Davis et al. 2014:377). Additionally, 38 standing structures were found to meet the historic-age guidelines; these were evaluated for eligibility for listing on the NRHP. None were found to be eligible for the NRHP. The results of the survey demonstrated that the earliest occupation was during the Paleoindian and Early Archaic periods, but the terrace sediments were flushed out of the valley before 2000 B.C. In situ occupation during the Late Archaic and Woodland periods was sporadic. Early Caddo occupation may have occurred about A.D. 1000 and only minimal evidence of later Caddo occupation was found. The majority of the historic sites date to the late 19th to mid-20th century. Oral histories confirm that most 19th century residences were removed to increase farm and pasture land or were replaced by modern structures.

Additionally, ARC conducted a survey of the LBCR mitigation property that extends south from the Red River, down the Fannin and Lamar county line (Davis et al. 2015). Overall, 3,670 acres were surveyed. A total of 87 sites (20 prehistoric, 55 historic, and 11 multicomponent) are recorded on the property. Twenty-eight structures were found to meet the historic-age guideline as established for this project and were evaluated. None of them maintained the level of integrity required to be considered for listing in the NRHP. No evidence of Paleoindian sites was found on the ranch, and the majority of the prehistoric sites identified could not be dated and likely represent the ephemeral remains of Archaic period sites. However, several sites were found to

possibly date to the Woodland, but more likely date to the prehistoric Caddo periods. The majority of the historic sites date to the 20th century, with the exception of cemeteries.

Recently a preliminary survey was conducted by archaeologists for Mr. Witcher where four archaeological sites (41FN176, 41FN177, 41FN178, and 41FN179) were identified on his property (Perttula et al. 2015a). The report suggests that these four sites have evidence of Late Paleoindian occupation to Middle Caddo occupation (Perttula et al. 2015a:10). This information is largely based on the collection of one local collector who has been collecting these sites for the past 5 years, according to the site forms submitted to TARL (2015). STs were excavated at two of these sites (41FN177 and 41FN178). 41FN177 (South Pasture Site) had 18 STs with 12 being positive for prehistoric artifacts. Artifacts recovered from the STs include 29 pieces of lithic debris, one ceramic sherd (identified as Williams Plain), one arrow point fragment, and one piece of FCR (Perttula et al. 2015a:7). All artifacts were found in the top 40 cmbs. Additionally, the local collector has recovered a variety of arrow and dart points (including one Late Paleoindian Dalton point), ceramics, a celt fragment, and scrapers when walking the site after it has been plowed (Perttula et al. 2015a:7). Site 41FN178 (North Ridge Site) had three STs excavated and all were positive for prehistoric artifacts, which included lithic debris, a ceramic sherd, charred nutshell fragment, and FCR (Perttula et al. 2015a:4). The collector reported finding numerous artifacts, including a Late Archaic dart point, and decorated ceramics dating to Early and Middle Caddo occupations. Perttula reported in correspondence to Mr. Witcher, that he had obtained a Direct-AMS radiocarbon date of 952 ± 25 B.P., or A.D. 998 ± 25 (D-AMS 11793) on a charred nutshell from 41FN178, which dates to the Early Caddo period (Witcher personal communication, 2015; Perttula 2016b). Site 41FN176 was only inspected and was described as having a few artifacts on the surface with the collector reporting a Caddo ceramic sherd from the area (Perttula et al. 2015a:9). It is unclear whether the final site, 41FN179, was actually visited by the crew, as it is described as being 300 m south of 41FN177 in the report (Perttula et al. 2015a:10), but was reported to TARL (2015) as being 340 m to the southwest which is on a property owned by NTMWD. The site form and report both state that the site is on property owned by Mr. Witcher, but both described locations place the site on property owned by NTMWD. This site was reported to the crew by the collector as a Woodland period site based on the artifacts collected. No site boundaries were submitted for any of the sites. Based on this information, the authors believe the sites date from the Paleoindian period through at least the Middle Caddo period.

Historic Aerial and Map Review

A variety of historic maps were available for analysis of the LBCR Witcher Property study area, these include a 1936 and 1961 General Highway Map (GHM) of Fannin County, the 1939 Fannin County Soil Map (FCSM), the 1949 Honey Grove, Texas 15' U.S. Geological Survey (USGS) topographic map, and the 1984 Selfs, Texas 7.5' USGS topographic map. All these maps show structures and roads throughout the LBCR project area. While the 1936 GHM shows no structures within the LBCR Witcher Property study area, several are shown to the west along the county roads. The 1939 FCSM shows a structure just outside of the study area, but not within. The 1949 USGS maps shows the same structure from the 1939 map, however, the better accuracy of the 1949 map show the structure is farther west away from the LBCR Witcher Property study area. No structures were within the study area on the 1949 map. Only one

structure is mapped in the study area on the 1984 USGS map, which is in the far northwest corner.

In addition to reviewing the historic maps, a variety of historic aeriels were available for review including the 1937/38, 1949, 1950, 1963, 1976, 1995, 1996, 2005, 2008, 2010, 2012, and 2014. The 1937/38 Tobin aeriels show the largest forested areas being present in the east portion of the property along Bois d'Arc Creek, in the very north part, and along the short drainage that runs through the center of the study area. Most of the study area appears to be cleared and used for agricultural purposes. The property remained same through 1950. However, the 1963 aerial shows that some of pastures being reclaimed by dense vegetation. No structures were present on the property through the 1963 aerial. A structure first appears on the 1976 aerial near the mapped location of the 1984 USGS structure. In 1995, much of the dense vegetation along the central creek and the eastern portion along Bois d'Arc Creek were cleared. Only the northern part of the property remained densely wooded. In the early 2000s, Mr. Witcher built his home near the center of the study area. According to Fannin County Appraisal District, the home was built in 2000. Mr. Witcher (personal communication, 2015) confirmed this information saying he bought the property around 1999 or 2000 and was living in the home by 2001. He also stated that he believed the pole barn in the northwest corner was likely built in the late 1960s or 1970s, consistent with the aerial imagery.

RESEARCH DESIGN AND METHODOLOGY

The comprehensive research design guided field research and laboratory analysis done in conjunction with archaeological investigations in the reservoir area (Skinner et al. 2010). The document presented research topics which provided a foundation for directing and interpreting the findings of the sample survey of the LBCR. Broad ranging statements about the archaeology of the Eastern Planning Region (Kenmotsu and Perttula 1993:Sections I and II) provided a foundation for relating the archaeology to the environment in Fannin County. The THC planning document was used to develop three historic contexts for the project: Late Pleistocene Geomorphology, The Shifting Ecotone, and Settling Into the Region (Skinner et al. 2010:20; Davis et al. 2014:26). The floodplains were classified as having a generally low archaeological potential for occupations while the upland and Pleistocene terrace edges were considered to have a high potential for both historic and prehistoric archaeological sites. Steep slopes on the south side of the Bois d'Arc Creek valley and southern tributaries discouraged settlement; the southern drainages only carry rainfall runoff, unlike some of the spring-fed northern tributaries.

The majority of the Witcher Property study area is on a second terrace overlooking the Bois d'Arc Creek floodplain. Numerous archaeological sites were recorded on this landform during the LBCR study (Davis et al. 2014:Figure 77). Prehistoric sites 41FN110, 41FN118, 41FN120, 41FN122, 41FN123, and 41FN151 are immediately southwest of the Witcher Property along the leading edge of the terrace (Perttula et al. 2015a). The locations of sites 41FN176, 41FN177, and 41FN178 are shown on Figure 6 below, which is Figure 3 in the Witcher Property survey report (Perttula et al. 2015a). This figure shows the relative locations of the STs dug at sites 41FN177 and 41FN178, but no information was provided about the locations or matrix composition of surrounding negative STs. Likewise, centroid locations are not illustrated on the map nor are they discussed in the text. Consequently, it was impossible to relate their ST locations to the locations of the numerous STs that ARC excavated.

These nine sites are tentatively dated from the Woodland to Early or Middle Caddo periods. Artifacts recovered from these sites included undecorated Caddo ceramics, lithic debris, dart and arrow points, plant and animal remains, and FCR. Based on this information, it was expected that similar prehistoric sites would be found along the leading terrace edge, especially on the north side of the small drainage that crosses through the LBCR Witcher study area. These sites would likely contain dateable materials and could have intact features below the plow zone with similar artifact assemblages. Furthermore, the four sites in study area needed to be systematically delineated and evaluated.

It had been predicted that historic residences and sites would be found within a hundred feet of present and past roadways. Based upon the historic map and aerial review, one structure was present on the 1976 aerials and on the 1984 USGS topographic map in the study area. Previous investigations of the LBCR study area documented nearly a dozen historic sites on the same terrace landform all adjacent to roadways. All these historic sites represented early- to mid-20th century homesteads, some with structures but most without. The sites without remaining residential structures typically contained foundations, subterranean features, pole barns, sheet trash middens, cisterns, or wells. Additionally, it was expected that historic artifact scatters could be found adjacent to historic road or drainages.

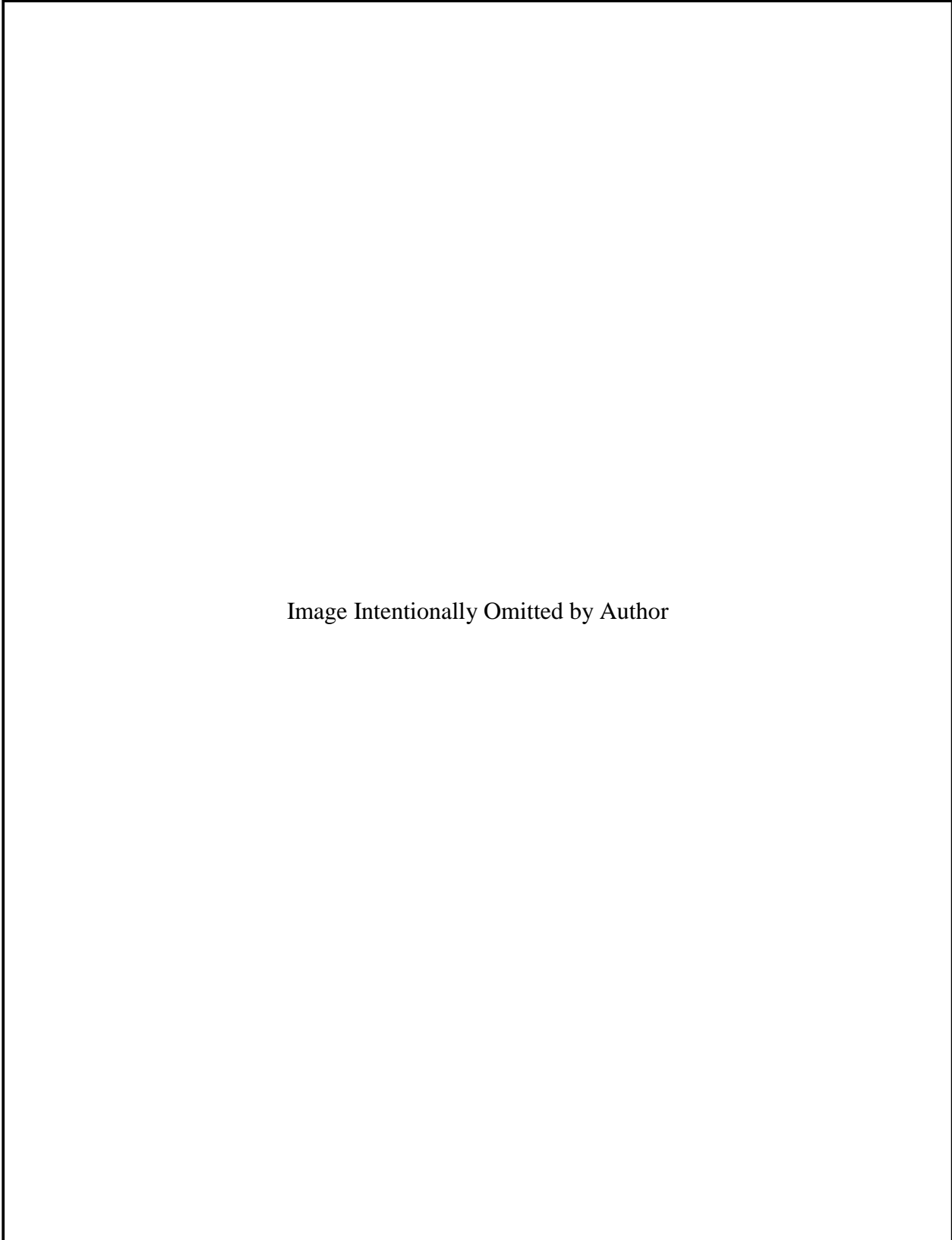


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Figure 6. Figure 3 from the Perttula et al. (2015a) report showing site locations on the Witcher property.

Methodology

Field methods were designed to define site boundaries and gather more comprehensive baseline information about the known sites and locate and record any cultural resources found on the LBCR Witcher study area. Data collection methods included pedestrian survey with shovel testing and archival and oral history research. An inventory of sites present in the survey area provides information regarding site distribution and density, site size and deposit depth, artifact assemblages, ecofact preservation, and dating potential. ARC used this information to develop recommendations for further cultural resource investigations, which might include testing and mitigation of sites that are eligible for listing on the NRHP or as SALs.

In the survey area, the field crew walked parallel and individually numbered transects, spaced 25 m apart. Notes on ground exposure, soil types, and topographic settings encountered were made for each section. STs were excavated approximately every 100 meters (m) along the transects. The STs were staggered between transects to achieve practical spacing of 50 m. STs were further concentrated where artifacts were present on the surface or on topographic rises, ridge tops, knolls, and on terrace edges. On average, almost three STs per acre (actually 2.97) were excavated in these high potential terrace sediments. All STs were approximately 30 cm in diameter, excavated in 10 cm levels, and extended to the bottom of the Holocene deposit (THC n.d.). Clay soils were inspected visually, broken and hand-sorted, while sandy soils were screened through ¼ inch hardware cloth to determine if cultural materials were present. Each ST was recorded on a standardized form that described the sediment thickness, texture/composition, color (Munsell Soil Color Chart 2010), and recorded the number and types of artifacts. The locations were recorded using handheld global positioning system (GPS) units. Subsurface artifacts were collected in 10 cm levels for analysis. Temporally and functionally diagnostic artifacts located on the surface would have been mapped and collected for analysis had they been found. Photographs were taken using GPS enabled digital cameras. For the four previously recorded sites with no associated site boundaries, field crews began by excavating five STs near the reported site centroids. The first was excavated at the reported centroid, with four additional STs 10 m away in the cardinal directions. The placement of these four STs would place them 15 m from the STs on the larger survey grid. STs were not dug further than 25 m apart on any of the sites.

RESULTS

The results of the LBCR Witcher study area survey are presented in three sections. The terrain, environmental setting, and general survey results for the project area are described first, followed by a discussion of the archaeological sites documented during the project. The final section presents conclusions with regard to the results of the survey. Descriptions for all STs are presented in Appendix A, and the positive STs are described throughout the chapter in each specific site description.

Survey Results

The LBCR Witcher study area is located on the second terrace overlooking the Bois d'Arc Creek floodplain. The creek is approximately 400 m east. The gently rolling terrace surface is highest in the western portion of the study area at 510' amsl. It gradually drops in elevation to the east where the leading edge of the terrace is generally at 500' amsl. The edge of the adjacent floodplain averages 490' amsl. A small intermittent tributary divides the property into a northern and southern pasture. The drainage flows east/northeast into Bois d'Arc Creek. The majority of the property has been cleared of brush and has been farmed for decades. Dense relatively young forest vegetation is along the floodplain edge on the north and east. The drainage bisecting the study area contained a scattered growth of mainly older oak and pecan trees. The dense vegetation along the floodplain consisted of younger oak, hackberry, pecan, and cedar elm trees along with poison ivy and greenbriar. The northern and southern pastures had ankle to calf-high grasses that were being grazed. Ground visibility throughout the pastures was between 0 and 50 percent and was slightly higher in the wooded areas; this however did not reveal surface artifacts.

Soils in the higher elevations along the top of the terrace were consistent with the Porum and Derly series of loams. These silty and sandy loams typically were 20 to 40 cm thick, overlaying subsoils with higher clay content. A reddish yellow or dark yellowish brown clay or sandy clay was typically reached between 40 and 60 cmbs. STs excavated at the edge of the floodplain were consistent with Tinn clay and had between 20 and 30 cm of dark gray clayey loam above darker and fatter clay.

A total of six archaeological sites (3 prehistoric, 2 historic, and 1 multicomponent) were documented during the survey and 454 STs were excavated in the 156-acre study area. Of those, 11 percent (49 STs) contained artifacts (Figure 7 and Figure 8). During this investigation, ARC revisited the four previously reported site locations to define the site boundaries and also recorded three new sites (41FN244, 41FN245, and 41FN246). One previously recorded site, 41FN179, was found to be erroneously plotted and the site was not relocated. The historic map and aerial review demonstrated that the only structure on the property was built between 1963 and 1976. Mr. Witcher was asked about the pole barn (Figure 9) and he thought it had been built in the late 1960s or 1970s, but was not sure, since he had only lived on the property since 2001. Fannin County Appraisal District records lists the building but has no construction date. Based upon the construction methods and materials, it appears the structure was likely built in the 1970s. Given the ephemeral nature of the structure and the fact it is similar to numerous other pole barns in the LBCR area, it was not evaluated as a historic structure.

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Figure 7. The Witcher Property study area showing excavated STs, transects, and archaeological sites on a recent aerial photograph.

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Figure 8. Archaeological site locations investigated in conjunction with the Witcher property survey shown on a section of the Selfs, TX 7.5' USGS map.



Figure 9. Modern pole barn in the northwest portion of the study area, view is to the northeast.

Three STs contained artifacts that were determined to be isolated occurrences (IOs) given that surrounding testing was all negative (Table 2). A single interior chert flake was found in ST29-1, Level 2 in the northwest portion of the study area. The second IO was found in ST3-11 where a piece of FCR and a chert secondary flake were found in Level 1. The third IO, a single piece of unidentified metal, was found in ST21-1 in compact sandy clay at a depth of 30-40 cm. This metal fragment is north of site 41FN245 near the west central part of the survey area.

Table 2. IOs Found in STs throughout the Study Area.

| ST # | Depth (cm) | Description | Comments/Artifacts |
|------|------------|--|------------------------------|
| 3-11 | 0-20 | Brown (10YR4/3) loam with 10% yellowish red (5YR4/6) loam | 0-10 cm: lithic (1), FCR (1) |
| | 20-35 | Yellowish red (5YR4/6) clay with 10% brown (10YR4/3) clay | |
| 21-1 | 0-25 | Dark grayish brown (10YR4/2) sandy clay | |
| | 25-40 | Light yellowish brown (10YR6/4) compact sandy clay with 50% light brownish gray (10YR6/2) compact sandy clay | 30-40 cm: metal (1) |
| 29-1 | 0-10 | Dark grayish brown (10YR4/2) sandy loam | |
| | 10-20 | Yellowish brown (10YR5/4) silty loam with 15% yellowish brown (10YR5/8) silty loam | 10-20 cm: chipped stone (1) |
| | 20-40 | Strong brown (7.5YR5/6) sandy clay | |

Archaeological Sites

The following four site descriptions present information provided from the Witcher Property survey report (Perttula et al. 2015a) and from site forms and records provided to the TARL at the completion of the survey that was done in the summer of 2015. This information is presented as the first paragraph of the sections for sites 41FN176, 41FN177, 41FN178, and 41FN179. Site

photographs and site maps from the ARC survey follow these first paragraphs and are followed by a discussion of the site survey findings.

41FN176

Site 41FN176 (the JL site) was recorded by Mark Walters on July 19, 2015. Five pieces of undiagnostic lithic debris were found in a 10 sq. m eroded area (Figure 10) that roughly parallels the 480' amsl contour shown on Figure 11. The site was described as being 20 m by 20 m in size with artifacts eroding out of the top 30 cm of sand that rests on sterile orange clay. A single grog-tempered utility ware ceramic sherd with three rows of tool punctation was found on the site surface and is in the John Loschke Artifact Collection (hereafter JL Collection). Pertulla describes the sherd as being ancestral Caddo in origin. No shovel testing was done at the site when it was first recorded. The site centroid appears to have been placed at the upslope edge of the eroded area. In the site survey form, Walters characterizes the site as a probable Caddo farmstead with dwellings and activity areas.



Figure 10. Overview of site 41FN176, showing the eroded area reported by Mr. Witcher as the location of artifacts eroding out of the terrace soils.



Image Intentionally Omitted by Author

Figure 11. Plan map of 41FN176 shown on a recent aerial photograph.

The eroded area was re-inspected on October 29, 2015 by the ARC team and no additional artifacts were noted at the site or on the surface in the surrounding area. Systematic shovel testing at 10 m intervals around the site centroid recovered artifacts (Table 3) from one ST but the other four were sterile (Figure 11). Two additional positive STs contained artifacts but the surrounding nine STs were sterile. Shovel testing revealed an average depth of 29-55 cm to subsoil. The artifacts recovered were undiagnostic lithic debris, no ceramics or organic materials were encountered. Based on shovel testing and the eroded terrace edge exposure, it is estimated that the site is a linear deposit that is 100 m long and no more than 50 m wide covering 3,974 sq. meters (0.98 acres) with artifacts dispersed throughout the matrix. Artifact density is low with an average of 1.33 artifacts per 10 cm level in the three positive STs. Negative STs west of the positives STs demonstrated that artifacts are not present back from the terrace edge. Shovel testing confirmed the depth of the loamy topsoil but also demonstrated that artifacts appear to have moved vertically into the sandy clay subsoil as revealed in ST 4-3.1, which was located downslope at the floodplain edge. No evidence of a trash midden deposit or of features such as house floors or subterranean pit walls was noted at this described Early to Middle Caddo site. Overall, the site is a low-density prehistoric deposit with no obvious vertical or horizontal integrity. Additional shovel testing is needed to determine if the site is eligible for the NRHP or as an SAL.

Table 3. Positive ST Descriptions from Site 41FN176.

| ST # | Depth (cm) | Description | Comments/Artifacts |
|-----------|------------|---|---|
| 4-3.1 | 0-15 | Very dark grayish brown (10YR3/2) loam | |
| | 15-55 | Dark grayish brown (10YR4/2) sandy clay with 40% yellowish brown (10YR5/4) sandy clay | 30-40 cm: lithic (1); 40-50 cm: lithic (2) |
| | 55-65 | Very dark gray (7.5YR3/1) clay | |
| 5-2.1 | 0-40 | Brown (10YR4/3) sandy loam | 0-10 cm: lithic (1); 10-20 cm: lithic (2); 20-30 cm: lithic (1) |
| | 40-50 | Strong brown (7.5YR4/6) sandy clay with 30% yellowish brown (10YR5/4) sandy clay and 10% brown (10YR4/3) sandy clay | |
| 41FN176-3 | 0-29 | Dark yellowish brown (10YR4/4) loam | |
| | 29-50 | Brownish yellow (10YR6/6) sandy clay | 30-40 cm: lithic (1) |

41FN177

Site 41FN177 (South Pasture site) is a prehistoric site described as having more than 160 artifacts, which were collected from the plowed field surface. The setting is relatively level terrace sediments of Porum loam (Figure 12). The JL Collection from the site surface includes 17 arrow points and point fragments, a siliceous shale celt, 52 dart points, two scrapers, a Late Paleoindian Dalton dart point, 66 biface fragments, and 22 ceramic sherds. According to the Perttula et al. (2015a:9) report, the artifacts represent Late Paleoindian, Late Archaic, Woodland, and Early Caddo occupation of the site. The site area was explored initially by Perttula’s team through the excavation of 18 STs, twelve of which contained artifacts. The upper sandy loam, or A-horizon, ranged in thickness from 12 to 45 cm but was generally 20 cm thick and rested on orange or strong brown clay subsoil. Shovel testing recovered 29 pieces of lithic debris, one ceramic sherd, an arrow point fragment, and a piece of FCR. Unfortunately, ST locations are not presented in a format (see Figure 6 in this report) that made it possible to integrate the two shovel testing efforts. It is stated in the report that the site covered an estimated 8,000 sq. meters (ca. two acres) but the site size is reported on the site form as 80 by 60 m (about one acre). However, Figure 3 in the Perttula et al. (2015a) report indicates that an oval site deposit, oriented roughly northwest/southeast, and covers about 1.25 acres. In any case, artifacts are in the sandy surface deposit, but the concentrated and extensive testing is not reported to have revealed any artifact concentrations or recognizable midden features.

ARC tested at 10 m intervals at and around the reported location of the site centroid but found no artifacts in the five STs (Figure 13). Two positive STs were dug at 25 m intervals west of the centroid but the six surrounding STs were devoid of cultural materials (Table 4). Based on this information, the subsurface site area is estimated to be oval in shape and to be 65 m by 50 m, thus including 2,710 sq. meters (0.67 acres). Only six pieces of unmodified lithic debris were recovered from the two positive STs. Artifacts were found in top 60 cmbs. This low-density contrasts with the mantle of tools and ceramics found on the surface, now in the JL Collection. Consequently, it is concluded that farming and subsequent erosion resulted in the destruction of unknown features, possibly including trash middens, and the loss of sediments, which contained them. Unfortunately, the remaining buried site deposit reveals a very low-density scatter of largely non-diagnostic artifacts, even though the surface collection presents evidence of Late

Paleoindian, Late Archaic, Woodland, and Early Caddo artifacts at the site. Based on the conflicting information gathered by the two shovel testing exercises, it is recommended that further systematic shovel testing be conducted to determine if significant buried site deposits are present at the site.



Figure 12. Overview of 41FN177 looking to the northwest.

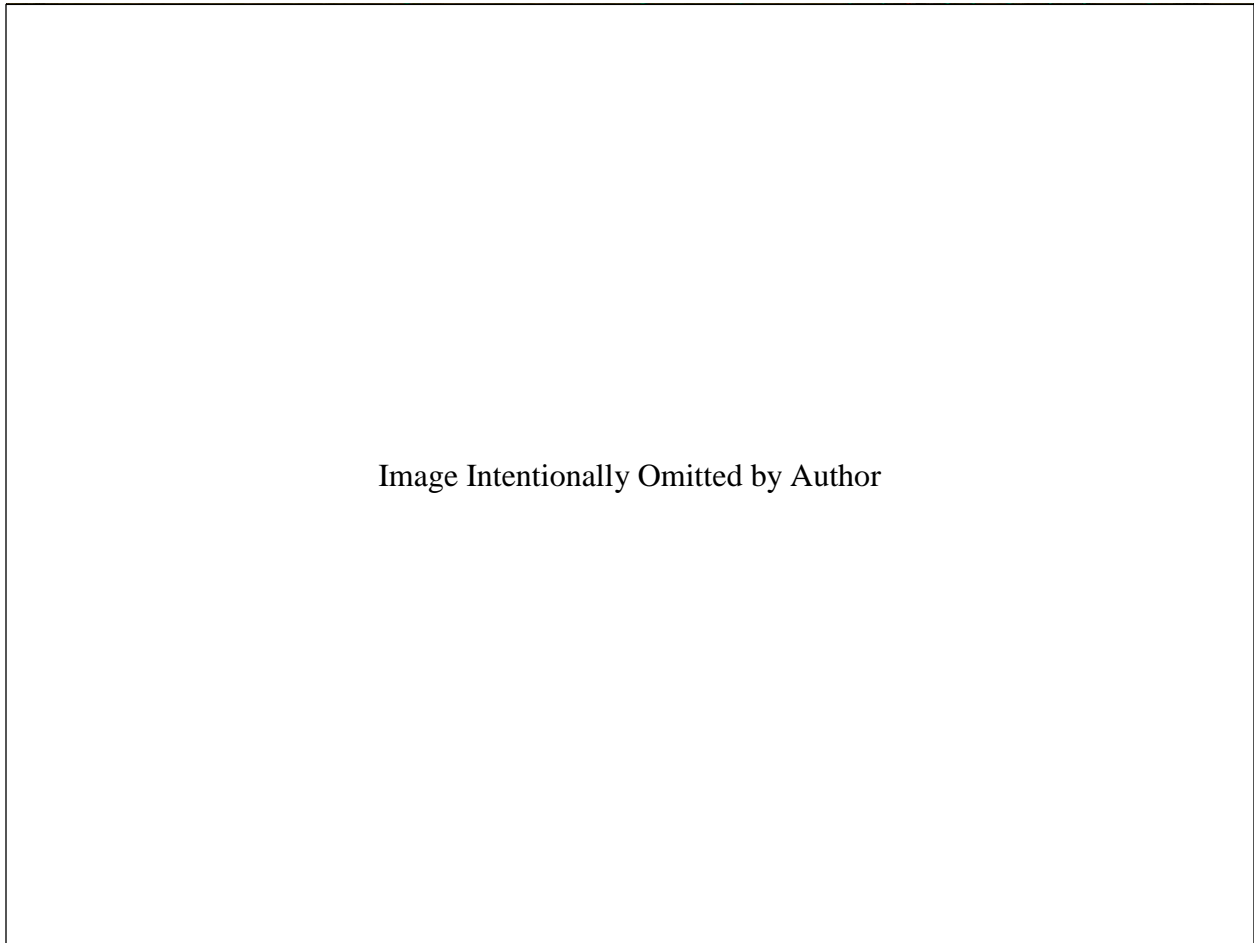


Figure 13. Plan map of 41FN177 shown on a recent aerial photograph.

Table 4. Positive ST Descriptions from Site 41FN177.

| ST # | Depth (cm) | Description | Comments/Artifacts |
|-------|------------|---|---|
| 9-3.2 | 0-12 | Dark brown (7.5YR3/3) sandy loam | |
| | 12-40 | Reddish brown (5YR4/4) sandy clay loam | 10-20 cm: lithic (1) |
| | 40-45 | Strong brown (7.5YR4/6) clay with 25% pale brown (10YR6/3) clay | |
| 10-3 | 0-65 | Yellowish brown (10YR5/4) sandy loam | 0-10 cm: lithic (1); 10-20 cm: lithic (1); 20-30 cm: lithic (1); 30-40 cm: lithic (1); 50-60 cm: lithic (1) |
| | 65-75 | Reddish yellow (7.5YR6/6) sandy clay with 10% yellowish red (5YR5/6) sandy clay and 10% light gray (10YR7/2) sandy clay | |

41FN178

The North Ridge site is shown to be located north of site 41FN177 at the same elevation (Figure 14) and set back from the terrace edge (Perttula et al. 2015a:2-5). Surface artifacts in the JL Collection include 25 dart points, two chipped stone drills, a groundstone tool, two celts, two arrowheads, a large chipped stone biface, and a single tool punctated/grog-tempered Early/Middle Caddo ceramic sherd. The dart points indicate Late Archaic and Woodland and Early Caddo occupations along with Williams Plain sherds described by Perttula et al. (2015a:9). Three positive STs were excavated on the terrace crest and they revealed 19-24 cm of brown sandy loam resting on orange clay. Artifacts from the STs included 15 pieces of lithic debris, 4 pieces of FCR, a plain body sherd, and 3 pieces of charred nutshells. Perttula reported in correspondence with Mr. Witcher, that he had obtained a radiocarbon date of 952±25 B.P., or A.D. 998±25 from Direct-AMS in Bothell, Washington (D-AMS 11793) on charred nutshell from the site (Witcher personal communication, 2015, Perttula 2016b). The 2-sigma calibration of this sample is A.D. 1090±67, which dates to the Early Caddo period (Perttula 2016b:1-2). It was estimated that the site covers 1-2 acres (Perttula et al. 2015a:4) but the site form describes the site as being 40 by 40 m (0.4 acres). On the one hand, the soils are described on the site form as being “undisturbed”, while at the same time the JL Collection was gathered after the site had been plowed and thus the soil had been disturbed. Based on the site report, it is possible that there could be a midden deposit located on the terrace edge in the area of ST A and B.



Figure 14. Overview of 41FN178 looking northeast towards top of terrace.

When ARC arrived at the site centroid, it was apparent that the site setting is not only at the eastern edge of the level terrace but that the terrace edge extends downslope to the edge of the floodplain, which largely corresponds with the mapped tree line. Testing began at the site centroid, which may correspond to one of Perttula’s positive STs. Artifacts were encountered in this ST (Table 5), but no artifacts were found in the four STs that were dug at 10 m distances around the centroid (Figure 15). A single ST to the southwest was positive. Eleven STs at 25 m spacing along the terrace edge contained artifacts. Two negative STs are included inside the estimated site boundary, which covers an area of 16,435 sq. meters (4.06 acres). Twenty-six negative STs were used to define the limits of the buried site deposit. Additional outlier STs further confirmed the site boundary.

Table 5. Positive ST Descriptions from Site 41FN178.

| ST # | Depth (cm) | Description | Comments/Artifacts |
|-------|------------|---|--|
| 4-4 | 0-20 | Very dark grayish brown (10YR3/2) loam | |
| | 20-90 | Brown (10YR4/3) loam | 60-70 cm: point (1), lithic (1); 70-80 cm: lithic (2), charcoal (1) |
| | 90-100 | Strong brown (7.5YR5/6) clay with 30% brown (7.5YR5/3) clay | |
| 4-4.1 | 0-52 | Brown (10YR4/3) sandy loam | 10-20 cm: lithic (1); 40-50 cm: charcoal (1) |
| | 52-60 | Dark gray (10YR4/1) clay | |
| 4-4.2 | 0-45 | Black (10YR2/1) loam | 0-10 cm: FCR (2); 10-20 cm: FCR (1), Bone (1); 20-30 cm: FCR (1), Bone (1); 30-40 cm: FCR (1), Bone (1); 40-50 cm: FCR (1) |
| | 45-63 | Brownish yellow (10YR6/8) clay | |
| 4-5 | 0-25 | Brown (10YR4/3) sandy loam | 10-20 cm: lithic (2); 20-30 cm: lithic (1) |
| | 25-44 | Brownish yellow (10YR6/8) clay | |

| ST # | Depth (cm) | Description | Comments/Artifacts |
|-------|------------|--|-----------------------------------|
| 5-3.3 | 0-20 | Dark grayish brown (10YR4/2) sandy clay | 0-10 cm: FCR (1) |
| | 20-30 | Strong brown (7.5YR5/6) clay loam | |
| 5-4 | 0-23 | Dark brown (10YR3/3) sandy loam | 10-20 cm: lithic (2) |
| | 23-39 | Strong brown (7.5YR5/8) clay with 10% yellowish red (5YR4/6) clay and 10% light reddish brown (2.5YR6/3) clay | |
| | 39-46 | Light reddish brown (2.5YR6/3) clay with 15% yellowish red (5YR4/6) sandy clay | |
| 5-4.1 | 0-25 | Very dark grayish brown (10YR3/2) sandy clay | 20-30 cm: lithic (1) |
| | 25-35 | Strong brown (7.5YR5/6) with 10% very dark grayish brown (10YR3/2) clay loam | |
| 5-5 | 0-37 | Brown (10YR4/3) sandy loam | 20-30 cm: lithic (2) |
| | 37-47 | Yellowish brown (10YR5/8) sandy clay | |
| 7-4 | 0-15 | Dark grayish brown (10YR4/2) sandy clay | 0-10 cm: lithic (1), charcoal (1) |
| | 15-25 | Yellowish brown (10YR5/4) clay loam with 50% strong brown (7.5YR4/6) | |
| 9-4.3 | 0-30 | Brown (7.5YR4/3) sandy loam | 10-20 cm: lithic (1) |
| | 30-45 | Yellowish red (5YR4/6) clay with 10% strong brown (7.5YR4/6) clay | 30-40 cm: lithic (1) |
| 10-4 | 0-50 | Yellowish brown (10YR5/4) loam | 30-40 cm: lithic (1) |
| | 50-55 | Reddish yellow (7.5YR6/6) sandy clay with yellowish red (5YR5/6) sandy clay and 10% very pale brown (10YR8/2) sandy clay | |

As with Perttula’s STs, lithic debris was the most common artifact class found in the ARC STs. Nine flakes and chips were fine-grained quartzite and four were chert. An Alba arrow point (Figure 16) made of chert was recovered at the base of the slope in ST 4-4 at a depth of 60-70 cm. The Alba arrow point likely dates to the Early/Middle Caddo (Turner et al. 2011:77; Perttula et al. 2015b:82). Four small slivers of unidentifiable animal bone were encountered in the ST matrices at the toe of the terrace slope between 10-40 cm and two pieces of charcoal were collected from two STs with sediments containing artifacts. No Native American ceramics were recovered and this low ceramic density relative to lithic debris/chipped stone tools compares favorably to Perttula’s artifact findings and those in the JL Collection. Based on the information from shovel testing and the JL Collection, it is concluded that occupation at site 41FN178 occurred from the Late Archaic to the Early/Middle Caddo. Given the organic preservation and the potential for unknown features, it is recommended that testing will be necessary to determine if site 41FN178 is eligible under Criterion D for the NRHP and as an SAL.

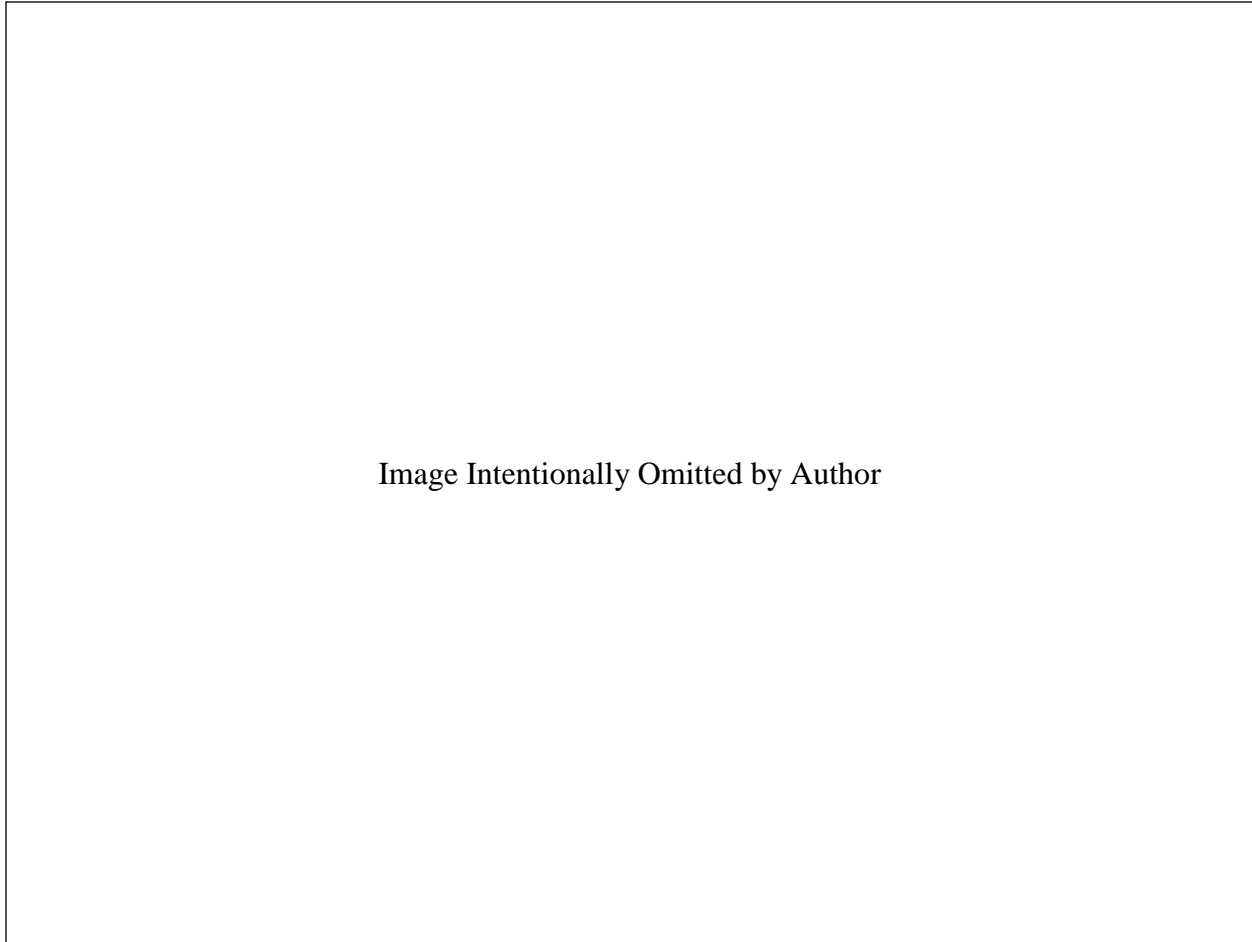


Figure 15. Site 41FN178 plan map shown on a recent aerial photograph.



Figure 16. Alba arrow point recovered from ST 4-4, 60-70 cmbs at site 41FN178.

41FN179

The SH site was initially reported on the basis of the examination of artifacts collected from the site surface and are in the JL Collection. The collection includes 26 dart points and a chipped stone biface. The identified dart points include seven Gary and two Kent specimens, which indicate that the site has a Woodland component. The Pertula team did not visit the site and the centroid was not recorded in the field. Based on the plotted location of the site submitted to TARL, the site centroid is on NTMWD property. This location was submitted to TARL and later confirmed by original submitters to be located as shown on Figure 8 and Appendix B. Although, their report describes the site being 300 m south of 41FN177 (Pertula et al. 2015:10), which would place the site on the south side of a large stock pond on Mr. Witcher's property and on NTMWD's property. During ARC's survey, Mr. Witcher (personal communication, 2015) described this area south of the stock pond as a place he thought artifacts were found by

Loschke. ARC doubled ST efforts in this area as shown on Figure 7; however, all STs were negative. The fence line near the reported site centroid represents the property line between the Witcher and the NTMWD land and is lined by trees that include bois d'arc and oak. Ground visibility west of the fence line was between 30 and 60 percent (Figure 17). No shovel tests were excavated on the NTMWD property south of the stock pond, as the site was described as being on the Witcher property and did not match the information sent to TARL (Appendix B). Given the description from the report, additional shovel tests should be excavated during the next phase of work conducted on the NTMWD property south of Mr. Witcher.



Figure 17. The reported site location is west of the fence beyond the bois d'arc tree and on NTMWD property.

Shovel testing on the NTMWD side of the fence line, where the site centroid was reported to TARL, encountered taller vegetation consisting of weeds and scrub brush. Using the centroid as a guide, the ARC team dug 13 STs in the immediate area, one of which was at the reported centroid location, at 10, 15, and 25 meter intervals all on NTMWD property (Figure 18). No cultural materials were encountered, even in the seven additional STs excavated on Mr. Witcher's property. It is ARC's conclusion that the reported artifacts were not from this location. ARC conducted further testing in the adjacent southwest corner, the south-central part, and the southeastern corner of Mr. Witcher's property but found no prehistoric artifacts. These tested areas include settings on the terrace edge and being 300 m south of site 41FN177 as described in the previous survey report (Pertula et al. 2015a:10) and as described by Mr. Witcher. ARC had no success in pinpointing the origin of the JL Collection artifacts from site 41FN179. Based on the reported location of 41FN179 and the numerous STs excavated in the area, the site was not relocated and the area on NTMWD property south of the stock pond should be shovel tested during the next phase of work.



Image Intentionally Omitted by Author

Figure 18. Reported locations of site 41FN179 shown on a recent aerial photograph.

41FN244

This site is located in the northern pasture along the eastern terrace edge overlooking the Bois d'Arc Creek floodplain. The Perttula team apparently did not survey in this area. The terrace had not been plowed in several years, but it certainly has been plowed in the past (Figure 19). The gently rolling terrain was covered with ankle-high grasses at the time of survey and artifacts were not visible on the ground surface. Eighty-two STs were excavated into the Porum loam in order to define the buried site deposit (Figure 20). A tree-lined drainage swale originates just east of the north end of the site deposit and then drains east and northeast before crossing the Bois d'Arc Creek floodplain. The site is approximately 440 m northwest/southeast by 230 m east/west and covers an estimated 35,749 sq. meters (8.83 acres) as shown in Figure 20. Eighty-four artifacts were recovered from 23 positive STs (Table 6 and Table 7). The topsoil consisted of dark-grayish brown to brown sandy loam and some sandy clay. The topsoil generally ranged in thickness up to 40 cm and rested on brown to reddish brown clay over most of the level terrace surface. The terrace slope is not as steep as at site 41FN178 and there is not a deeply buried midden at the more gradual toe slope. ST 7-8 presents an unexpected configuration in that it presents two deposition zones: 20-30 cm and 50-80 cm. Charcoal in the lower deposit should provide a datable early context that may be temporally distinct from more recent prehistoric occupation contained in the sediments that are preserved at the bottom of the plow zone throughout the site.



Figure 19. Overview of 41FN244 looking northeast towards the Bois d'Arc Creek.

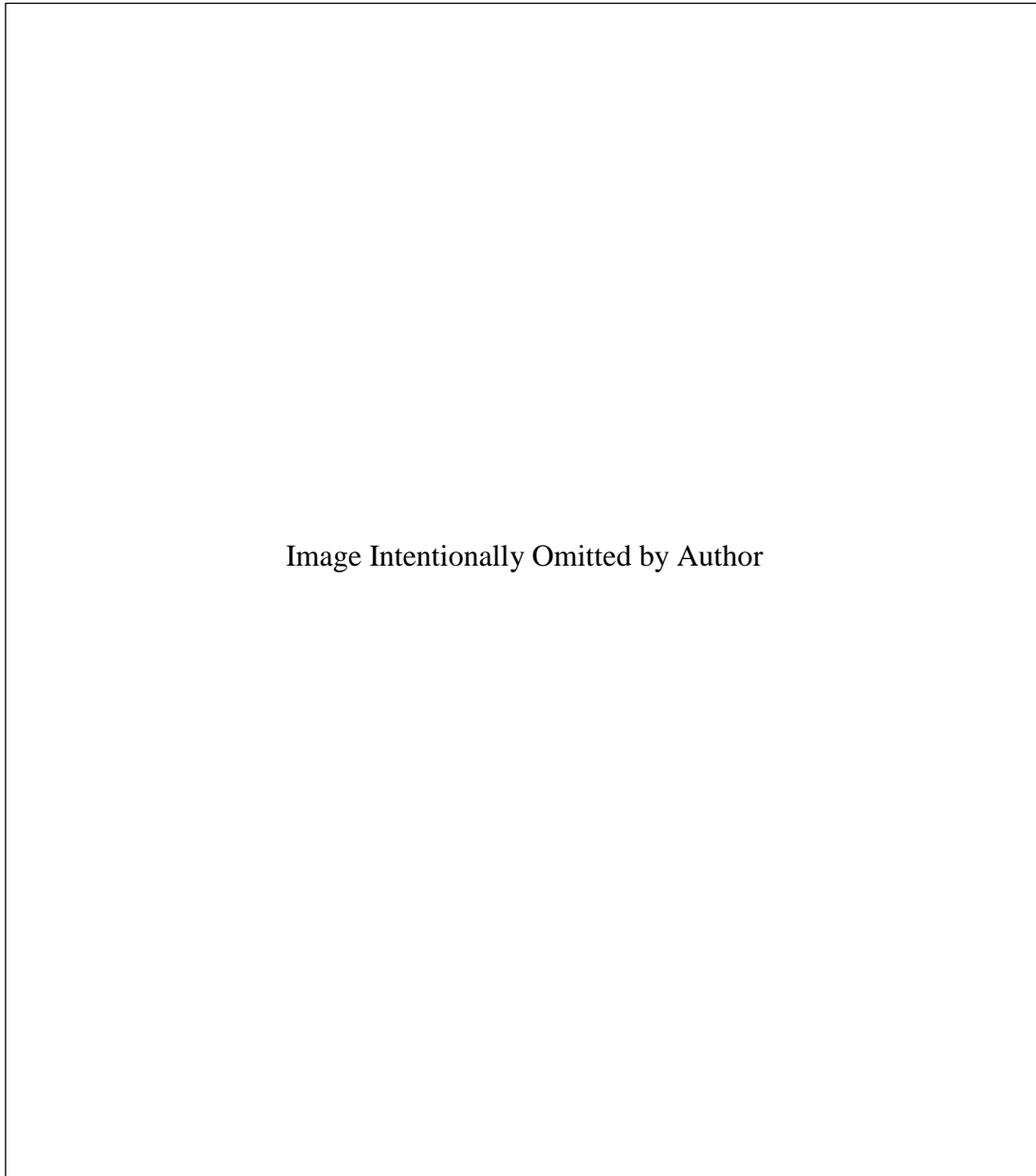


Figure 20. Site 41FN244 plan map shown on a recent aerial photograph.

Table 6. Site 41FN244 Artifact Assemblage by Depth.

| Depth (cm) | Chipped Stone | Metal | Native American Ceramics | Samples | Grand Total |
|--------------------|---------------|-----------|--------------------------|-----------|-------------|
| 0-10 | 6 | 12 | | 1 | 19 |
| 10-20 | 12 | | 1 | 5 | 18 |
| 20-30 | 11 | | 4 | 6 | 21 |
| 30-40 | 7 | | | 5 | 12 |
| 40-50 | 3 | | | | 3 |
| 50-60 | 2 | | | 3 | 5 |
| 60-70 | | | | 1 | 1 |
| 70-80 | | | | 2 | 2 |
| Grand Total | 41 | 12 | 5 | 23 | 81 |

Table 7. Positive ST Descriptions from Site 41FN244.

| ST # | Depth (cm) | Description | Comments/Artifacts |
|-------|------------|--|---|
| 2-7.2 | 0-60 | Very dark grayish brown (10YR3/2) wet loamy clay | 20-30 cm: lithic (1) |
| | 60-70 | strong brown (7.5YR5/6) sandy clay | |
| 3-6 | 0-40 | Dark grayish brown (10YR4/2) loam | 30-40 cm: lithic (1), charcoal (4) |
| | 40-50 | Strong brown (7.5YR4/6) sandy clay with 20% brown (10YR5/3) sandy clay | |
| 3-7 | 0-45 | Very dark grayish brown (10YR3/2) sandy loam | 20-30 cm: lithic (1), charcoal (1) |
| | 45-55 | Strong brown (7.5YR4/6) clay | |
| 3-8.2 | 0-25 | Dark grayish brown (10YR4/2) sandy loam | 10-20 cm: lithic (1), FCR (1), burned clay (1); 20-30 cm: charcoal (1) |
| | 25-40 | Strong brown (7.5YR5/6) sandy clay | 30-40 cm: charcoal (1) |
| 3-8.3 | 0-35 | Dark brown (10YR3/3) sandy loam | 0-10 cm: lithic (1); 10-20 cm: lithic (1) |
| | 35-50 | Strong brown (7.5YR4/6) clay | |
| 3-9 | 0-20 | Very dark grayish brown (10YR3/2) loam | 10-20 cm: point (1) |
| | 20-35 | Strong brown (7.5YR5/6) clay with 10% Very dark grayish brown (10YR3/2) clay | |
| 4-7 | 0-33 | Brown (10YR4/3) sandy loam | 20-30 cm: lithic (1) |
| | 33-46 | Strong brown (7.5YR5/8) clay | |
| 4-8 | 0-35 | Dark grayish brown (10YR4/2) sandy loam | 10-20 cm: lithic (2), charcoal (1); 20-30 cm: lithic (1), charcoal (2); 30-40 cm: lithic (4), FCR (2) |
| | 35-63 | Reddish yellow (7.5YR6/8) clay | |
| 4-8.1 | 0-23 | Very dark grayish brown (10YR3/2) sandy loam | 10-20 cm: lithic (1) |
| | 23-35 | Brown (7.5YR5/4) sandy loam | |
| | 35-45 | Yellowish red (5YR4/6) clay | |

| ST # | Depth (cm) | Description | Comments/Artifacts |
|-------|------------|--|---|
| 5-8-3 | 0-25 | Dark grayish brown (10YR4/2) sandy loam | 10-20 cm: Native American ceramic (1), FCR (1), lithic (2) |
| | 25-40 | Strong brown (7.5YR5/6) sandy clay | |
| 5-9 | 0-37 | Very dark grayish brown (10YR3/2) clayey loam | 0-10 cm: metal (12), charcoal (1) |
| | 37-50 | Yellowish brown (10YR5/4) sandy clay | |
| 6-8.2 | 0-30 | Very dark grayish brown (10YR3/2) loamy clay | 10-20 cm: lithic (1) |
| | 30-40 | Strong brown (7.5YR5/8) sandy clay | |
| 6-8.3 | 0-20 | Dark brown (10YR3/3) sandy loam | |
| | 20-45 | Brown (7.5YR4/3) sandy loam | 30-40 cm: lithic (1) |
| | 45-55 | Yellowish red (5YR4/6) clay | |
| 7-7.3 | 0-28 | Brown (7.5YR4/2) sandy loam | 0-10 cm: lithic (2); 10-20 cm: lithic (1); 20-30 cm: lithic (1) |
| | 28-47 | Pinkish gray (7.5YR6/2) clay sand | 40-50 cm: lithic (1) |
| | 47-55 | Yellowish red (5YR5/8) clay | |
| 7-8 | 0-60 | Dark grayish brown (10YR4/2) sandy clay | 20-30 cm: FCR (1); 50-60 cm: FCR (2), lithic (2), charcoal (1) |
| | 60-85 | Brown (7.5YR4/3) compact sandy clay with 30% pale brown (10YR6/3) sandy clay | 60-70 cm: charcoal (1), 70-80 cm: charcoal (1), FCR (1) |
| 7-8.3 | 0-34 | Brown (10YR4/3) sandy loam | 10-20 cm: lithic (1), charcoal (1) |
| | 34-45 | Yellowish red (5YR5/8) clay | |
| 7-9 | 0-35 | Dark grayish brown (10YR4/2) sandy clay | 20-30 cm: lithic (3) |
| | 35-45 | Yellowish red (5YR5/6) sandy clay | |
| 8-8.2 | 0-30 | Dark yellowish brown (10YR4/4) loamy sand | |
| | 30-85 | Dark yellowish brown (10YR4/6) clay sand | 40-50 cm: lithic (1) |
| | 85-95 | Yellowish red (5YR4/6) sandy clay | |
| 8-9.1 | 0-43 | Brown (10YR4/3) sandy loam | 10-20 cm: lithic (1) |
| | 43-56 | Yellowish red (5YR5/8) clay | |
| 9-9.3 | 0-47 | Dark brown (10YR3/3) sandy loam | 20-30 cm: Native American ceramic (1), charcoal (1) |
| | 47-52 | Red 2.5YR4/6 clay | |
| 10-9 | 0-5 | Dark grayish brown (10YR4/2) sandy loam | |
| | 5-80 | Brown (10YR5/3) sandy loam | 30-40 cm: lithic (1); 40-50 cm: lithic (1) |
| | 80-90 | Strong brown (7.5YR4/6) clay | |
| 10-10 | 0-35 | Dark grayish brown (10YR4/2) sandy loam | 0-10 cm: lithic (2); 10-20 cm: lithic (1) |
| | 35-45 | Strong brown (7.5YR4/6) sandy clay with 20% brown (7.5YR5/3) sandy clay | |
| 11-10 | 0-3 | Dark grayish brown (10YR4/2) sandy loam | |
| | 3-42 | Brownish yellow (10YR6/6) loamy sand | 20-30 cm: lithic (1), charcoal (1); 30-40 cm: charcoal (2) |
| | 42-54 | Strong brown (7.5YR5/8) clay | |

The largest number of the artifacts came from the top 10 cmbs; nearly 86 percent came from the top 40 cm as shown in Table 6. The artifact assemblage includes 41 chipped stone, 12 pieces of metal, five Native American ceramics, and 23 samples. The samples consist of two pieces of burned clay, seven pieces of FCR, and 14 charcoal samples. The metal was all unidentifiable. The chipped stone assemblage contained two fine-grained quartzite cobble cores, 36 pieces of lithic debitage, two biface fragments, and an Alba arrow point (Figure 20). The lithic debris contained a variety of chips, flakes, and shatter. The majority of the lithic debitage was 19 pieces of fine-grained quartzite and 16 pieces of chert, but a single petrified wood chip was identified. The two bifaces were both in very early stages of reduction. The Alba arrow point (Figure 21 and Table 8) was recovered from 10-20 cmbs of ST 3-9 and dates to the Early/Middle Caddo (Turner et al. 2011:77; Perttula et al. 2015b:82).

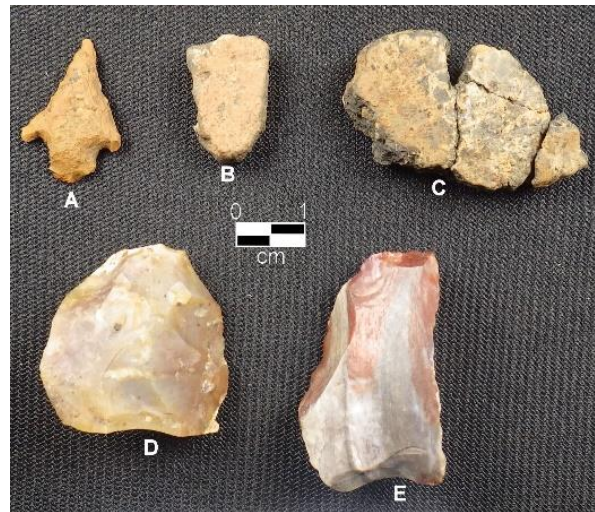


Figure 21. Select artifacts from 41FN244. Detailed descriptions in Table 8.

Table 8. Detailed Descriptions of Artifacts in Figure 21.

| Figure Letter | Field ST | Depth (cmbs) | Detailed Analysis |
|---------------|----------|--------------|---|
| A | 3-9 | 10-20 | 1 FQz Alba point (Length 20.43mm, blade width 14.22+mm, base width 6.45mm, thickness 3.28mm) |
| B | 5-8.3 | 10-20 | 1 red slipped sherd (4.59 mm thick, fine paste, grog temper, smoothed interior, and slipped exterior) |
| C | 9-9.3 | 20-30 | 4 sherds refit (one is 5.49mm thick other 2 are 6.92mm thick (broke during analysis), medium paste, grog and bone temper, smooth interior and exterior) |
| D | 7-9 | 20-30 | 1 Ch Biface fragment (length:26.04mm, width:26.81mm, thickness:12.40mm) |
| E | 7-8 | 50-60 | 1 PW early stage biface fragment (length:32.87 mm, width:20.60 mm, thickness:10.39 mm) |

The ceramic assemblage includes five analyzed sherds collected from 10-30 cmbs in two STs as well as two sherdlets. The sherds were analyzed using descriptive terms and attributes from the Suhm and Jelks typology (1962), refined by Perttula (2010, 2011; Perttula and Nelson 2004). Of the five sherds, three refit and are from a vessel with a medium paste with grog and bone temper. During the analysis, one of these sherds broke into two pieces. The refitted sherds have smoothed interior and exterior surface treatment and were identified as a utility ware. The sherds and were originally identified as having possible incising, however, closer inspection reveals that the line could have been caused by the breakage the sherd has incurred. Based on thickness, temper, and paste of the sherds, they likely date to the Middle Caddo period. A fourth sherd is from the same provenience and appears to have been from the same vessel although it did not

refit. The fifth sherd has a fine paste with grog temper. The exterior is red slipped and most closely resembles Sanders Slipped (Perttula et al. 2016:87). Based on these points of comparison and taking into account regional variation, the ceramic assemblage likely dates from to the Early/Middle Caddo periods.

While the artifacts and any features that may have been present in the upper 30 cm of the site deposit are likely to have been destroyed by plowing, intact features could be preserved below the plow zone in the underlying clay subsoil. Artifacts recovered from the site suggest it was occupied during the Early to Middle Caddo periods. Given the wood charcoal preservation, and the potential for residential features such as houses, burial pits, middens, and storage pits, it is recommended that additional testing is necessary to determine if site 41FN244 is eligible under Criterion D for the NRHP or as an SAL. The historic component of the site, likely dates to the early or mid-20th century, and no further work for this component is recommended.

41FN245

This small historic site is located in the west central portion of the study area, just south of the drainage that bisects the property. The site is located near the junction of three fence lines. The ground surface is level and the site measures approximately 100 m north/south by 85 m east/west and covers 6,490 sq. meters ([0.48 acres] Figure 22). A two-track road provides access through the site area to the southern pasture. As such, ground visibility was between 50 and 70 percent for a large portion of the site area. Despite the exposure, no artifacts were noted on the surface or protruding from the soil. Likewise, no evidence of residential or storage structures in the form of rocks, bricks, boards, or sheet metal was present.

Five of the 13 STs excavated in the area were positive for historic artifacts. The majority (n=15) came from 10-20 cmbs and all artifacts were found in the top 30 cmbs (Table 9). There were nine European ceramics, 10 pieces of glass, and nine pieces of metal. The ceramics were all unidentifiable whiteware. Two sherds had exterior decoration. One had a blue glaze and the other was too degraded to ascertain. Both were too small to identify. The nine container glass shards included amber, to aqua, clear, milk, and opaque colors. All are consistent with late-19th to mid-20th century production. The one piece of window glass recovered, measured 2.63 mm thick and probably post-dates 1920 (Moir 1988). Seven unidentifiable nail fragments, a fence staple, and one other unidentifiable fragment make up the metal assemblage. No structures were ever shown in this location on historic maps or aerials and the location was likely a dumping area near the edge of the property adjacent to a road. Overall, the historic assemblage dates from the late-19th to mid-20th century. Due to the relatively low-artifact density, absence of any structural remains or features, and the lack of deposit integrity the site is not recommended as eligible for listing on the NRHP or as an SAL.

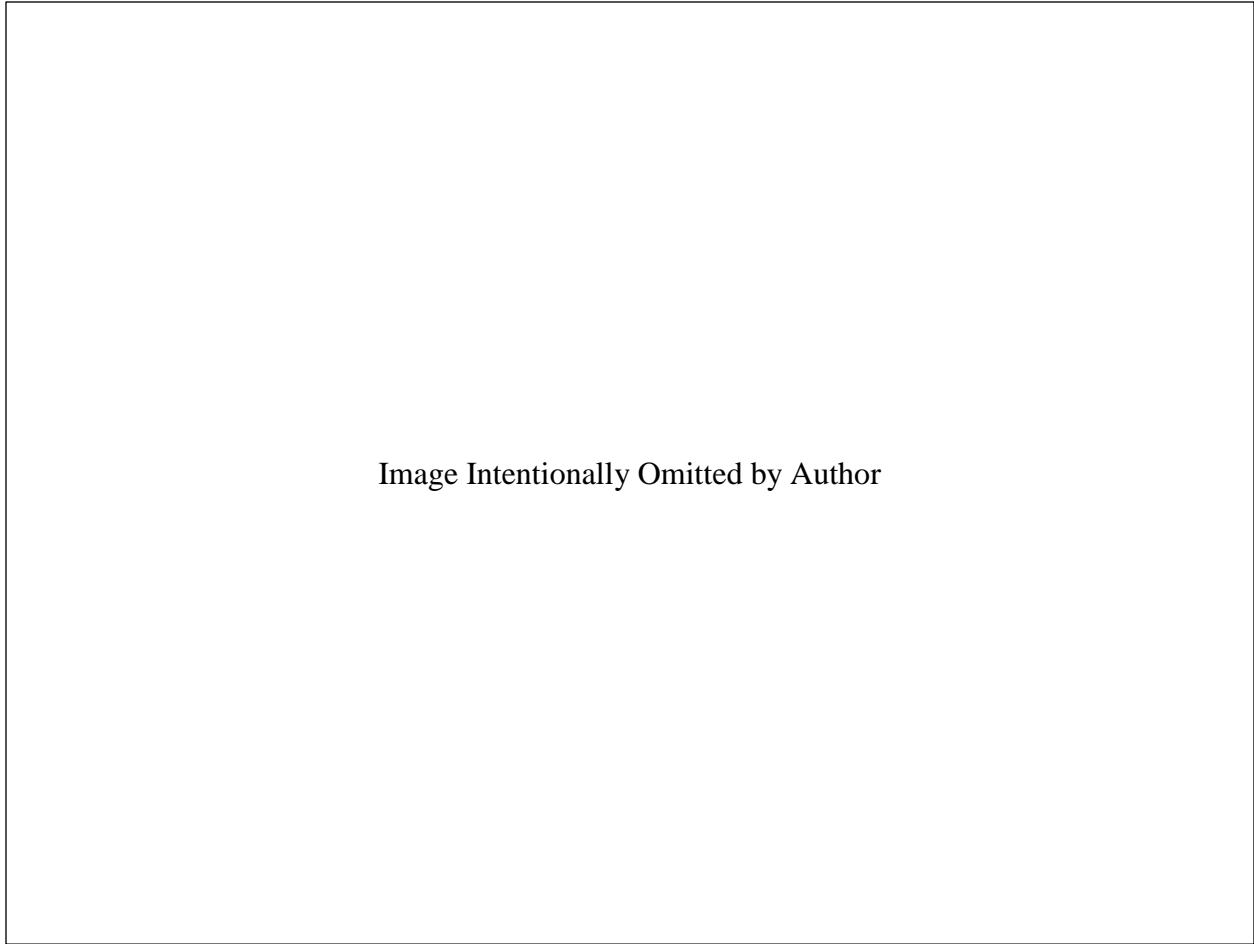


Figure 22. Site 41FN245 plan map shown on a recent aerial photograph.

Table 9. Positive ST Descriptions from Site 41FN245.

| ST # | Depth (cm) | Description | Comments/Artifacts |
|--------|------------|---|--|
| 17-2.2 | 0-20 | Dark grayish brown (10YR4/2) sandy loam | 0-10 cm: European ceramic (1) |
| | 21-29 | Dark reddish brown (5YR3/2) clay with 30% yellowish red (5YR4/6) clay | |
| 18-2 | 0-20 | Very dark grayish brown (10YR3/2) sandy loam | 10-20 cm: European ceramic (6), glass (1) |
| | 20-37 | Brownish yellow (10YR6/6) loamy sand | 20-30 cm: glass (2) |
| | 37-46 | Strong brown (7.5YR5/8) clay | |
| 18-2.1 | 0-32 | Dark grayish brown (10YR4/2) sandy loam | 10-20 cm: metal (1), glass (1); 20-30 cm: metal (2) |
| | 32-38 | Yellowish red (5YR5/8) clay | |
| 19-0.1 | 0-55 | Brown (10YR5/3) sandy loam | 0-10 cm: glass (1), metal (1); 10-20 cm: glass (1), metal (1); 20-30 cm: metal (2) |
| 19-0.2 | 0-32 | Very dark grayish brown (10YR3/2) sandy loam | 10-20 cm: metal (1), European ceramic (1), glass (2); 20-30 cm: metal (1), European ceramic (1), glass (2) |
| | 32-49 | Yellowish red (5YR4/6) clay | |

41FN246

Site 41FN246 is a historic trash accumulation that was encountered near the southwest corner of the Witcher property along the western fence line in conjunction with attempts to relocate site 41FN179. No artifacts or evidence of structural features were found on the surface of the pasture which is shown in Figure 23. No structures were shown at this location on any of the historic maps or aerials that were reviewed. The site covers an area of 3,695 sq. meters (0.91 acres) that is oriented roughly north-south and is 80 m long and 55 m wide.

Nine artifacts were recovered from the upper 20 cm of three of the nine ST excavated (Figure 24 and Table 10). The artifacts included only European ceramics and container glass. The ceramics consisted of a stoneware sherd and three whiteware sherds. One of the whiteware sherds had a partial maker's mark that was identified as the William Brunt Pottery Co. (Figure 25) and likely dates between 1892 and 1911 (Kovel and Kovel 1986:194C). The five shards of container glass were clear, amber, and sun-colored-amethyst. Overall, the historic assemblage dates from the late-19th to mid-20th century. Due to the low artifact density, the absence of any structural remains or features, and the lack of deposit integrity the site is not recommended as eligible for listing on the NRHP or as an SAL.



Figure 23. Overview of 41FN246 site area looking northwest with the Witcher property right of the fence line. Note the dense vegetation on the NTMWD land to the left.

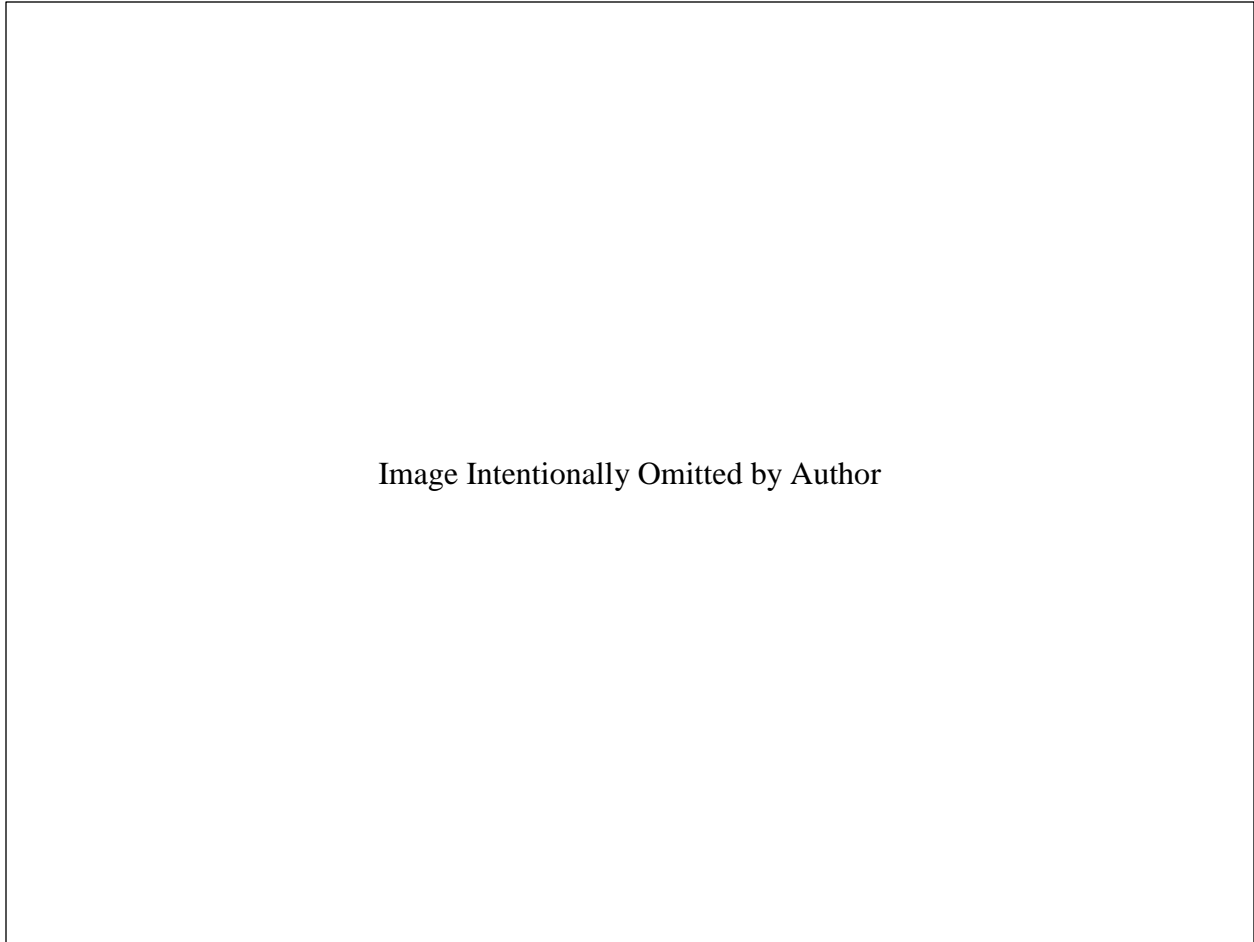


Figure 24. Site 41FN246 plan map shown on a recent aerial photograph.

Table 10. Positive ST Descriptions from Site 41FN246.

| ST # | Depth (cm) | Description | Comments/Artifacts |
|--------|------------|--|---|
| 179-19 | 0-23 | Dark grayish brown (10YR4/2) sandy loam | 10-20 cm: glass (2) |
| | 23-49 | Light yellowish brown (10YR6/4) sandy loam | |
| | 49-52 | Yellowish red (5YR5/8) sandy clay | |
| 15-1.2 | 0-15 | Brown (7.5YR5/3) clay loam | |
| | 15-28 | Yellow (10YR7/6) clay sand | 10-20 cm: glass (3), European ceramic (3) |
| | 28-40 | Reddish yellow (5YR6/8) clay with 10% light gray (7.5YR7/1) clay | |
| 16-0.1 | 0-50 | Yellowish brown (10YR5/4) sandy loam | 0-10 cm: European ceramic (1) |



Figure 25. Whiteware sherd with partial maker's mark for William Burnt Pottery Co. (1892-1911)(Kovel and Kovel 1986:194C) recovered from ST 15-1.2 (10-20 cmbs).

Conclusions

During planning for the intensive pedestrian survey of 30 percent of the proposed LBCR footprint, Survey Area Q was selected because it crossed a high potential area where the edge of the second terrace of Bois d'Arc Creek was present. This proposed survey area was to cross private property owned by Mr. Witcher. At the time, Mr. Witcher denied NTMWD's request for survey access and ARC revised the proposed survey areas (Davis et al 2014:99). Since that time, Mr. Witcher identified four archaeological sites (41FN176, 41FN177, 41FN178, and 41FN179) on his property (Perttula et al. 2015a). All of this information was provided to NTMWD, who in turn requested that ARC conduct an intensive pedestrian survey of the Witcher property, since Mr. Witcher would now grant access. However, the reported location of site 41FN179 by the original recorders demonstrated that the site could be on property owned by NTMWD (TARL 2015). The site was not relocated during the current field effort. The site appears to be misplotted. The centroid reported to TARL was extensively tested, but no evidence of the site was found. The site description does not match the one described in the initial recording report (Perttula et al. 2015a:10). That report says 300 m south of 41FN177, which would place it on NTMWD property south of Mr. Witcher's property. Although, Mr. Witcher pointed out to the area directly south of his stock pond as the possible site location during the ARC survey. This area was also shovel tested and no artifacts were recovered. Additional testing on the NTMWD property south of the Mr. Witcher will be necessary to see if the site lies where it was described rather than where it was plotted.

The sites recorded within the Witcher Property study area represent prehistoric and historic sites similar to those recorded on adjacent properties during the original LBCR survey (Davis et al. 2014). Additionally, this survey area represents the bulk of the remaining unsurveyed terrace deposits along Bois d'Arc Creek (Davis et al. 2014:Figure 14). The prehistoric sites previously recorded on the Witcher property were contemporaneous and consistent with sites in the area dating between the Late Archaic and the Middle Caddo periods.

Paleoindian dart points have been documented in a wide variety of private personal collections in Fannin County that are discussed by the following researchers (Green 2014:295-302; Bolin 1993; Jennings 2005; Perttula et al. 2015a:9). However, none have been documented in situ in the LBCR project area and they were typically found deflated in the Bois d'Arc Creek channel or on the surface of plowed fields. Site 41FN177 is described by Perttula et al. (2015a:9) as having

a Dalton dart point in the private JL Collection. During the survey, no evidence of the Paleoindian period was found. Additional testing at 41FN177 is necessary to finalize an NRHP and SAL recommendation.

Sites 41FN176, 41FN178, and 41FN179 were all described as dating between the Late Archaic and Middle Caddo periods (Pertulla et al. 2015a). ARC attempted to relocate site 41FN179 but it was not found. Only site 41FN178 revealed sufficient evidence of these time periods during ARC's revisit. This site is comparable in location and setting to 41FN110, 41FN118, 41FN120, 41FN122, and 41FN151, upstream on Bois d'Arc Creek (Davis et al. 2014). A similar assemblage was recovered at site 41FN244 during this study. All these sites are situated along the leading edges of the terrace deposits overlooking the creek's floodplain. Additionally, sites 41FN178 and 41FN244 may have sufficient preservation that radiocarbon dates and environmental reconstruction are possible and could help to better understand these time periods in the Bois d'Arc Creek and Red River watersheds. Recent survey work at Riverby Ranch demonstrated that features could be present and preserved at the base of the plow zone similar to the features found at sites 41FN41 and 41FN235 (Davis et al. 2015:386). ARC documented prehistoric ceramics and diagnostic arrow points from sites 41FN178 and 41FN244 that are consistent with other Early to Middle Caddo assemblages in the area. Sites 41FN176, 41FN178, and 41FN244 warrant additional testing to determine if they are eligible under Criterion D for the NRHP or as an SAL.

Additionally, three sites (41FN244, 41FN245, and 41FN246) contained historic artifacts. The assemblages from these sites suggest late-19th to mid-20th century occupation. However, no structures were documented in these areas or found on the ground surface. Historic research and oral histories collected during the LBCR study (Davis et al. 2014:380-381) demonstrated that most of the late-19th century occupation was removed during the mid-20th century to maximize agricultural activities. The historic components have no features and contain generic mass-produced artifacts found commonly in numerous historic sites along Bois d'Arc Creek. Sites 41FN245 and 41FN246, as well as the historic component of 41FN244 do not present contexts that are worthy of further investigation.

RECOMMENDATIONS

No additional testing is recommended at sites 41FN245, and 41FN246. These sites have low-density deposits in the plow zone with no evidence of organic preservation. They are similar to others recorded along Bois d’Arc Creek and are not eligible under Criterion A, B, C, or D of the NRHP or as SALs. Further testing and investigation is needed at the following sites in order to determine their full vertical and horizontal extents as well as to assist in making NRHP determinations: 41FN176, 41FN177, 41FN178, and 41FN244. These sites are similar to other sites in the LBCR study area and represent the remains of Late Archaic through Early/Middle Caddo period Native American occupations. Additionally, the third possible location for the site 41FN179 should be investigated, 300 m south of 41FN177 on NTMWD property. These investigations should be conducted under a new antiquities permit and coordinated with the USACE, Caddo Nation of Oklahoma, and the THC in accordance with the project’s PA and Research Design (Skinner et al. 2010).

Table 11. Archaeological Sites Recorded and Associated Recommendations.

| Trinomial | Time Period | Recommendation |
|------------------|---|---|
| 41FN176 | Early to Middle Caddo | Undetermined eligibility for NRHP and SAL Further testing is needed to determine NRHP eligibility |
| 41FN177 | Late Paleoindian, Late Archaic, Woodland, and Early Caddo | Undetermined eligibility for NRHP and SAL Further testing is needed to determine NRHP eligibility |
| 41FN178 | Late Archaic to Middle Caddo | Undetermined eligibility for NRHP and SAL Further testing is needed to determine NRHP eligibility |
| 41FN179 | Woodland | Unable to relocate using TARK centroid or on Witcher property through original recorder’s description. Both locations were systematically shovel tested. However, land south of Witcher’s property, owned by NTMWD, should be shovel tested more intensively in the area that matches the original reported location. |
| 41FN244 | Early to Middle Caddo/Early-to mid-20 th century | Undetermined eligibility for NRHP and SAL Further testing is needed to determine NRHP eligibility for prehistoric component. Historic component is ineligible for NRHP and SAL. |
| 41FN245 | Late-19 th to mid-20 th century | Ineligible for NRHP and SAL |
| 41FN246 | Late-19 th to mid-20 th century | Ineligible for NRHP and SAL |

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APPENDIX A

Shovel Test Descriptions

| ST# | Depth (cm) | Description | Artifacts |
|-------|------------|---|----------------------|
| 1-1 | 0-50 | dark brown (7.5YR3/2) clay | |
| 1-2 | 0-32 | brown (7.5YR5/2) clay loam | |
| 1-2 | 32-45 | very dark gray (7.5YR3/1) clay | |
| 1-3 | 0-27 | brown (7.5YR5/2) clay loam | |
| 1-3 | 27-42 | very dark gray (7.5YR3/1) clay | |
| 1-4 | 0-24 | brown (7.5YR5/2) clay loam | |
| 1-4 | 24-40 | light brown (7.5YR6/4) silty clay | |
| 1-5 | 0-12 | brown (7.5YR5/2) clay loam | |
| 1-5 | 12-35 | gray (7.5YR6/1) silty clay | |
| 1-6 | 0-14 | brown (7.5YR5/2) clay loam | |
| 1-6 | 14-35 | light brown (7.5YR6/4) silty clay | |
| 1-7 | 0-12 | brown (7.5YR5/2) clay loam | |
| 1-7 | 12-42 | very dark gray (7.5YR3/1) clay | |
| 1-8 | 0-40 | Gray (7.5YR5/1) loamy clay | |
| 1-8 | 40-50 | Dark brown (7.5YR3/2) clay | |
| 1-9 | 0-35 | Gray (7.5YR5/1) loamy clay | |
| 1-9 | 35-40 | Dark brown (7.5YR3/2) clay | |
| 1-10 | 0-30 | Gray (7.5YR5/1) loamy clay | |
| 1-10 | 30-40 | Reddish yellow (5YR6/6) loamy clay | |
| 1-11 | 0-10 | Dark gray (7.5YR4/1) clay loam | |
| 1-11 | 10-25 | Reddish brown (5YR5/4) clay sand | |
| 1-11 | 25-35 | Yellowish red (5YR5/8) silty clay | |
| 1-12 | 0-55 | Gray (7.5YR5/1) loamy clay | |
| 1-12 | 55-60 | Dark brown (7.5YR3/2) clay | |
| 2-1 | 0-45 | very dark gray (7.5YR3/1) clay | |
| 2-1 | 45-50 | very dark grayish brown (10YR3/2) w/ 10% strong brown (7.5YR4/6) clay | |
| 2-2 | 0-50 | very dark gray (7.5YR3/1) clay | |
| 2-3 | 0-50 | dark brown (7.5YR3/2) clay | |
| 2-4 | 0-50 | dark brown (7.5YR3/2) clay | |
| 2-5 | 0-30 | very dark gray (7.5YR3/1) clay | |
| 2-5 | 30-45 | dark gray (7.5YR4/1) w/ 25% strong brown (7.5YR4/6) clay | |
| 2-6 | 0-30 | black (10YR2/1) clay | |
| 2-6 | 30-45 | dark brown (7.5YR3/2) clay | |
| 2-6.1 | 0-50 | dark brown (7.5YR3/2) clay | |
| 2-6.2 | 0-30 | black (10YR2/1) clay | |
| 2-6.2 | 30-45 | dark brown (7.5YR3/2) clay | |
| 2-6.3 | 0-27 | black (10YR2/1) clay | |
| 2-6.3 | 27-45 | dark brown (7.5YR3/2) clay | |
| 2-7 | 0-30 | dark brown (7.5YR3/2) clay | |
| 2-7 | 30-45 | dark reddish gray (5YR4/2) w/ 10% strong brown (7.5YR4/6) sandy clay | |
| 2-7 | 45-50 | strong brown (7.5YR4/6) clay | |
| 2-7.1 | 0-55 | very dark grayish brown (10YR3/2) loamy clay | |
| 2-7.1 | 55-60 | strong brown (7.5YR5/6) sandy clay | |
| 2-7.2 | 0-60 | very dark grayish brown (10YR3/2) loamy clay | 20-30 cm: lithic (1) |
| 2-7.2 | 60-70 | strong brown (7.5YR5/6) sandy clay | |
| 2-7.3 | 0-12 | dark gray (7.5YR4/1) clay loam | |
| 2-7.3 | 12-36 | brown (10YR5/3) clay sand | |
| 2-7.3 | 36-47 | yellowish red (5YR5/8) silty clay | |
| 2-8 | 0-25 | Black (10YR2/1) clay | |
| 2-8 | 25-35 | Very dark grayish brown (10YR3/2) clay | |

| ST# | Depth (cm) | Description | Artifacts |
|--------|------------|---|------------------------------------|
| 2-9 | 0-30 | Black (10YR2/1) clay | |
| 2-9 | 30-50 | Very dark gray (10YR3/1) clay | |
| 2-9.1 | 0-27 | dark gray (7.5YR4/1) sandy loam | |
| 2-9.1 | 27-40 | reddish yellow (5YR6/6) sandy clay | |
| 2-9.2 | 0-31 | brown (7.5YR4/2) clay sand | |
| 2-9.2 | 31-41 | yellowish red (5YR5/8) clay | |
| 2-10 | 0-35 | Black (10YR2/1) clay | |
| 2-10 | 35-50 | Very dark gray (10YR3/1) clay | |
| 2-11 | 0-20 | Brown (7.5YR4/3) sandy clay | |
| 2-11 | 20-30 | Brown (7.5YR4/4) clay | |
| 2-11.2 | 0-22 | reddish yellow (7.5YR6/6) loamy clay | |
| 2-11.2 | 22-32 | reddish yellow (7.5YR6/8) clay | |
| 2-12 | 0-35 | Black (10YR2/1) clay | |
| 2-12 | 35-45 | Very dark gray (7.5YR3/1) clay | |
| 3-1 | 0-25 | very dark grayish brown (10YR3/2) clay loam | |
| 3-1 | 25-30 | dark grayish brown (10YR4/2) clay | |
| 3-2 | 0-35 | very dark grayish brown (10YR3/2) clay loam | |
| 3-2 | 35-45 | dark grayish brown (10YR4/2) clay | |
| 3-2.2 | 0-49 | very dark gray (10YR3/1) clay | |
| 3-2.2 | 49-55 | brown (10YR5/3) sandy clay | |
| 3-2.3 | 0-42 | very dark gray (10YR3/1) clay | |
| 3-2.3 | 42-57 | brown (10YR5/3) sandy clay | |
| 3-3 | 0-25 | very dark gray (10YR3/1) clay loam | |
| 3-3 | 25-40 | brown (7.5YR4/4) w/ 20% very dark gray (10YR3/1) sandy clay | |
| 3-3.1 | 0-25 | dark gray (10YR4/1) clay loam | |
| 3-3.1 | 25-35 | very dark gray (10YR3/1) clay loam | |
| 3.3-2 | 0-55 | very dark gray (10YR3/1) clay | |
| 3-3.3 | 0-25 | black (10YR2/1) clay | |
| 3-3.3 | 25-40 | dark brown (7.5YR3/2) clay | |
| 3-4 | 0-50 | very dark grayish brown (10YR3/2) loam | |
| 3-4 | 50-110 | grayish brown (10YR5/2) sand | |
| 3-4 | 110-115 | dark brown (7.5YR3/2) w/ 20% dark brown (7.5YR3/4) clay | |
| 3-4.2 | 0-11 | brown (7.5YR4/2) loam | |
| 3-4.2 | 11-28 | brownish yellow (10YR6/6) clay sand | |
| 3-4.2 | 28-41 | yellowish red (5YR5/6) silty clay | |
| 3-5 | 0-40 | dark grayish brown (10YR4/2) clay loam | |
| 3-5 | 40-50 | brown (7.5YR4/4) w/ 20% brown (10YR5/3) clay | |
| 3-5.3 | 0-50 | dark grayish brown (10YR4/2) clay loam | |
| 3-5.3 | 50-60 | brown (7.5YR5/4) w/ 10% dark grayish brown (10YR4/2) and 10% brown (10YR5/3) clay | |
| 3-6 | 0-40 | dark grayish brown (10YR4/2) loam | 30-40 cm: lithic (1), charcoal (1) |
| 3-6 | 40-50 | strong brown (7.5YR4/6) w/ 20% brown (10YR5/3) sandy clay | |
| 3-6.1 | 0-10 | very dark grayish brown (10YR3/2) loam | |
| 3-6.1 | 10-35 | dark yellowish brown (10YR4/4) sandy loam | |
| 3-6.1 | 35-50 | strong brown (7.5YR4/6) w/ 10% dark yellowish brown (10YR4/4) sandy clay | |
| 3-6.2 | 0-35 | very dark grayish brown (10YR3/2) sandy loam | |
| 3-6.2 | 35-50 | strong brown (7.5YR5/6) sandy clay | |
| 3-6.3 | 0-21 | dark gray (7.5YR4/1) clay loam | |

| ST# | Depth (cm) | Description | Artifacts |
|--------|------------|---|--|
| 3-6.3 | 21-42 | brown (10YR5/3) clay sand | |
| 3-6.3 | 42-49 | yellowish red (5YR5/8) silty clay | |
| 3-7 | 0-45 | Very dark grayish brown (10YR3/2) sandy loam | 20-30 cm: lithic (1), charcoal (1) |
| 3-7 | 45-55 | Strong brown (7.5YR4/6) clay | |
| 3-7.1 | 0-19 | yellowish brown (10YR5/6) clay loam | |
| 3-7.1 | 19-32 | yellowish red (5YR5/8) clay | |
| 3-7.2 | 0-20 | dark grayish brown (10YR4/2) sandy loam | |
| 3-7.2 | 20-35 | yellowish red (5YR5/6) sandy clay | |
| 3-7.3 | 0-21 | yellowish brown (10YR5/4) loam | |
| 3-7.3 | 21-36 | reddish yellow (5YR6/8) clay | |
| 3-8 | 0-20 | Very dark gray (10YR3/1) loam | |
| 3-8 | 20-40 | Brown (10YR5/3) w/ 45% yellowish red (7.5YR4/6) w/ 10% very dark gray (10YR3/1) sandy clay | |
| 3-8.1 | 0-45 | very dark grayish brown (10YR3/2) sandy clay | |
| 3-8.1 | 45-55 | strong brown (7.5YR5/6) w/ 10% light brownish gray (10YR6/2) sandy clay | |
| 3-8.2 | 0-25 | dark grayish brown (10YR4/2) sandy loam | 10-20 cm: lithic (1), FCR (1), burned clay (1); 20-30 cm: charcoal (1) |
| 3-8.2 | 25-40 | strong brown (7.5YR5/6) sandy clay | 30-40 cm: charcoal (1) |
| 3-8.3 | 0-35 | dark brown (10YR3/3) sandy loam | 0-10 cm: lithic (1); 10-20 cm: lithic (1) |
| 3-8.3 | 35-50 | strong brown (7.5YR4/6) clay | |
| 3-9 | 0-20 | Very dark grayish brown (10YR3/2) loam | 0-10 cm: projectile point (1) |
| 3-9 | 20-35 | Strong brown (7.5YR5/6) w/ 10% very dark grayish brown (10YR3/2) sandy clay | |
| 3-9.1 | 0-25 | dark brown (10YR3/3) sandy loam | |
| 3-9.1 | 25-40 | strong brown (7.5YR4/6) clay | |
| 3-10 | 0-25 | Very dark grayish brown (10YR3/2) loam | |
| 3-10 | 25-40 | Strong brown (7.5YR5/6) w/ 10% very dark grayish brown (10YR3/2) sandy clay | |
| 3-10.3 | 0-25 | dark yellowish brown (10YR4/6) loamy clay | |
| 3-10.3 | 25-40 | yellowish brown (10YR5/8) sandy clay | |
| 3-11 | 0-20 | Brown (10YR4/3) w/ 10% yellowish red (5YR4/6) loam | 0-10 cm: FCR (1), lithic (1) |
| 3-11 | 20-35 | Yellowish red (5YR4/6) w/ 10% brown (10YR4/3) clay | |
| 3-11.1 | 0-15 | dark yellowish brown (10YR4/6) loamy clay | |
| 3-11.1 | 15-30 | yellowish red (5YR4/6) sandy clay | |
| 3-12 | 0-85 | Very dark gray (10YR3/1) clay loam | |
| 3-12 | 85-115 | Black (10YR2/1) clay | |
| 4-1 | 0-20 | very dark grayish brown (10YR3/2) clay loam | |
| 4-1 | 20-30 | dark grayish brown (10YR4/2) w/ 40% very dark grayish brown (10YR3/2) clay | |
| 4-2 | 0-20 | very dark grayish brown (10YR3/2) clay loam | |
| 4-2 | 20-30 | dark grayish brown (10YR4/2) w/ 20% brown (7.5YR4/4) and 20% very dark grayish brown (10YR3/2) clay | |
| 4-2.3 | 0-20 | very dark grayish brown (10YR3/2) clay loam | |
| 4-2.3 | 20-30 | brown (7.5YR4/4) w/ 20% very dark grayish brown (10YR3/2) and 20% dark yellowish brown (10YR4/4) clay | |
| 4-3 | 0-15 | dark grayish brown (10YR4/2) loam | |

| ST# | Depth (cm) | Description | Artifacts |
|-------|------------|--|--|
| 4-3 | 15-30 | strong brown (7.5YR5/6) w/ 20% dark yellowish brown (10YR4/4) sandy clay | |
| 4.3-1 | 0-15 | very dark grayish brown (10YR3/2) loam | |
| 4-3.1 | 15-55 | dark grayish brown (10YR4/2) w/ 40% yellowish brown (10YR5/4) sandy loam | 30-40 cm: lithic (1); 40-50 cm: lithic (2) |
| 4-3.1 | 55-65 | very dark gray (7.5YR3/1) clay | |
| 4-3.2 | 0-15 | very dark grayish brown (10YR3/2) loam | |
| 4-3.2 | 15-62 | dark grayish brown (10YR4/2) w/40% yellowish brown (10YR5/4) sandy loam | |
| 4-3.2 | 62-68 | very dark gray (7.5YR3/1) clay | |
| 4-3.3 | 0-20 | very dark grayish brown (10YR3/2) loam | |
| 4-3.3 | 20-60 | brown (10YR4/3) loam | |
| 4-3.3 | 60-70 | very dark gray (7.5YR3/1) clay | |
| 4-4 | 0-20 | very dark grayish brown (10YR3/2) loam | |
| 4-4 | 20-90 | brown (10YR4/3) loam | 60-70 cm: lithic (1), projectile point (1); 70-80 cm: lithic (2), charcoal (1) |
| 4-4 | 90-100 | strong brown (7.5YR5/6) w/ 30% brown (7.5YR5/3) clay | |
| 4-4.1 | 0-52 | brown (10YR4/3) sandy loam | 10-20 cm: lithic (1); 40-50 cm: charcoal (1) |
| 4-4.1 | 52-60 | dark gray (10YR4/1) clay | |
| 4-4.2 | 0-45 | black (7.5YR2.5/1) loam | 0-10 cm: FCR (2); 10-20 cm: FCR (1), bone (1); 20-30 cm: FCR (1), bone (1); 30-40 cm: FCR (1), bone (1); 40-50 cm: FCR (1) |
| 4-4.2 | 45-63 | brownish yellow (10YR6/8) clay | |
| 4-4.3 | 0-13 | brown (10YR4/3) sandy loam | |
| 4-4.3 | 13-30 | brownish yellow (10YR6/8) clay | |
| 4-5 | 0-25 | brown (10YR4/3) sandy loam | 10-20 cm: lithic (2); 20-30 cm: lithic (1) |
| 4-5 | 25-44 | brownish yellow (10YR6/8) clay | |
| 4-5.1 | 0-20 | brown (10YR4/3) sandy loam | |
| 4-5.1 | 20-30 | brownish yellow (10YR6/8) clay | |
| 4-5.2 | 0-30 | dark grayish brown (10YR4/2) loam | |
| 4-5.2 | 30-43 | strong brown (7.5YR5/8) clay | |
| 4-5.3 | 0-53 | very dark gray (10YR3/1) clay | |
| 4-6 | 0-46 | dark grayish brown (10YR4/2) loam | |
| 4-6 | 46-60 | light gray (10YR7/2) w/ 20% strong brown (7.5YR5/8) sandy clay | |
| 4-6.2 | 0-20 | dark grayish brown (10YR4/2) sandy loam | |
| 4-6.2 | 20-35 | strong brown (7.5YR5/6) sandy clay | |
| 4-6.3 | 0-26 | brown (10YR4/3) loam | |
| 4-6.3 | 26-40 | strong brown (7.5YR5/8) clay | |
| 4-7 | 0-33 | brown (10YR4/3) sandy loam | 20-30 cm: lithic (1) |
| 4-7 | 33-46 | strong brown (7.5YR5/8) clay | |
| 4-7.1 | 0-32 | brown (10YR4/3) sandy loam | |
| 4-7.1 | 32-42 | strong brown (7.5YR5/8) clay | |
| 4-7.2 | 0-23 | black (10YR2/1) sandy loam | |
| 4-7.2 | 23-40 | brown (7.5YR4/4) w/ 20% dark brown (7.5YR3/4) clay | |
| 4-7.3 | 0-28 | dark grayish brown (10YR4/2) sandy loam | |
| 4-7.3 | 28-45 | yellowish red (5YR5/6) sandy clay | |
| 4-8 | 0-35 | Dark grayish brown (10YR4/2) sandy loam | 10-20 cm: lithic (2), charcoal (1); 20- |

| ST# | Depth (cm) | Description | Artifacts |
|--------|------------|---|---|
| | | | 30 cm: lithic (1), charcoal (2); 30-40 cm: lithic (4), FCR (2) |
| 4-8 | 35-63 | Reddish yellow (7.5YR6/8) clay | |
| 4-8.1 | 0-23 | very dark grayish brown (10YR3/2) sandy loam | 10-20 cm: lithic (1) |
| 4-8.1 | 23-35 | brown (7.5YR5/4) sandy loam | |
| 4-8.1 | 35-45 | yellowish red (5YR4/6) clay | |
| 4-8.2 | 0-17 | very dark gray (7.5YR3/1) sandy loam | |
| 4-8.2 | 17-40 | yellowish red (5YR4/6) clay | |
| 4-9 | 0-29 | Dark grayish brown (10YR4/2) sandy loam | |
| 4-9 | 29-46 | Reddish yellow (10YR6/8) clay | |
| 4-9.1 | 0-15 | dark grayish brown (10YR4/2) sandy loam | |
| 4-9.1 | 15-30 | yellowish brown (10YR5/6) sandy clay | |
| 4-9.2 | 0-27 | dark brown (10YR3/3) sandy loam | |
| 4-9.2 | 27-40 | strong brown (7.5YR4/6) clay | |
| 4-10 | 0-44 | Dark grayish brown (10YR4/2) sandy loam | |
| 4-10 | 44-52 | Light yellowish brown (10YR6/4) clay | |
| 4-11 | 0-20 | Dark grayish brown (10YR4/2) sandy loam | |
| 4-11 | 20-48 | Reddish yellow (10YR6/8) clay | |
| 4-11.2 | 0-5 | brown (10YR4/3) loam | |
| 4-11.2 | 5-30 | strong brown (7.5YR4/6) w/ 10% yellowish red (5YR4/6) and 10% brown (10YR4/3) clay | |
| 4-12 | 0-13 | Very dark grayish brown (10YR3/2) sandy loam | |
| 4-12 | 13-45 | Brown (10YR4/3) sandy clay | |
| 5-1 | 0-60 | very dark grayish brown (10YR3/2) sandy loam | |
| 5-1 | 60-70 | strong brown (7.5YR5/8) w/ 15% gray (10YR6/1) sandy clay | |
| 5-2 | 0-27 | very dark grayish brown (10YR3/2) sandy loam | |
| 5-2 | 27-42 | strong brown (7.5YR5/8) clay | |
| 5-2.1 | 0-40 | brown (10YR4/3) sandy loam | 0-10 cm: lithic (1); 10-20 cm: lithic (2); 20-30 cm: lithic (1) |
| 5-2.1 | 40-50 | strong brown (7.5YR4/6) w/ 30% yellowish brown (10YR5/4) and 10% brown (10YR4/3) sandy clay | |
| 5-2.2 | 0-18 | dark grayish brown (10YR4/2) sandy loam | |
| 5-2.2 | 18-40 | strong brown (7.5YR5/8) w/ 25% light reddish brown (2.5YR6/3) clay | |
| 5-2.3 | 0-27 | very dark grayish brown (10YR3/2) silty clay | |
| 5-2.3 | 27-42 | yellowish red (5YR4/6) w/ 50% yellowish brown (10YR5/6) clay | |
| 5-3 | 0-16 | dark grayish brown (10YR4/2) sandy loam | |
| 5-3 | 16-46 | yellowish brown (10YR5/4) w/ 25% strong brown (7.5YR5/8) and 10% grayish brown (10YR5/2) sandy clay | |
| 5-3.1 | 0-15 | dark grayish brown (10YR4/2) sandy clay | |
| 5-3.1 | 15-30 | strong brown (7.5YR4/6) w/ 40% light yellowish brown (10YR6/4) sandy clay loam | |
| 5-3.2 | 0-10 | dark grayish brown (10YR4/2) sandy clay | |
| 5-3.2 | 10-25 | strong brown (7.5YR4/6) sandy clay loam | |
| 5-3.3 | 0-20 | dark grayish brown (10YR4/2) sandy clay | 0-10 cm: FCR (1) |
| 5-3.3 | 20-30 | strong brown (7.5YR5/6) clay loam | |
| 5-4 | 0-23 | dark brown (10YR3/3) sandy loam | 10-20 cm: lithic (2) |
| 5-4 | 23-39 | strong brown (7.5YR5/8) w/ 10% yellowish red | |

| ST# | Depth (cm) | Description | Artifacts |
|-------|------------|---|--|
| | | (5YR4/6) and 10% light reddish brown (2.5YR6/3) sandy clay | |
| 5-4 | 39-46 | Light reddish brown (2.5YR6/3) w/ 15% yellowish red (5YR4/6) sandy clay | |
| 5-4.1 | 0-25 | very dark grayish brown (10YR3/2) sandy clay | 20-30 cm: lithic (1) |
| 5-4.1 | 25-35 | strong brown (7.5YR5/6) w/ 10% very dark grayish brown (10YR3/2) clay loam | |
| 5-4.2 | 0-15 | dark grayish brown (10YR4/2) sandy clay | |
| 5-4.2 | 15-25 | strong brown (7.5YR4/6) clay loam | |
| 5-4.3 | 0-20 | dark grayish brown (10YR4/2) sandy clay | |
| 5-4.3 | 20-30 | strong brown (7.5YR5/8) clay loam | |
| 5-5 | 0-37 | brown (10YR4/3) sandy loam | 20-30 cm: lithic (2) |
| 5-5 | 37-47 | yellowish brown (10YR5/8) sandy clay | |
| 5-5.1 | 0-20 | very dark gray (10YR3/1) clay | |
| 5-5.1 | 20-30 | dark gray (10YR4/1) clay | |
| 5-6 | 0-20 | brown (10YR4/3) sandy loam | |
| 5-6 | 20-35 | strong brown (7.5YR5/8) clay | |
| 5-6.2 | 0-30 | dark grayish brown (10YR4/2) sandy clay | |
| 5-6.2 | 30-35 | strong brown (7.5YR4/6) slightly sandy clay | |
| 5-7 | 0-26 | dark grayish brown (10YR4/2) sandy loam | |
| 5-7 | 26-50 | strong brown (7.5YR5/8) clay | |
| 5-7.2 | 0-25 | very dark grayish brown (10YR3/2) sandy loam | |
| 5-7.2 | 25-35 | brown (7.5YR5/4) sandy loam | |
| 5-7.2 | 35-45 | yellowish red (5YR4/6) clay | |
| 5-7.3 | 0-25 | dark grayish brown (10YR4/2) sandy loam | |
| 5-7.3 | 25-40 | yellowish red (5YR5/6) sandy clay | |
| 5-8 | 0-26 | dark grayish brown (10YR4/2) clay loam | |
| 5-8 | 26-50 | strong brown (7.5YR5/8) w/ 30% yellowish red (5YR5/6) and 10% light reddish brown (2.5YR6/4) clay | |
| 5-8.1 | 0-25 | dark brown (7.5YR3/2) sandy loam | |
| 5-8.1 | 25-40 | strong brown (7.5YR4/6) clay | |
| 5-8.2 | 0-25 | very dark gray (10YR3/1) sandy loam | |
| 5-8.2 | 25-35 | strong brown (7.5YR4/6) clay | |
| 5-8.3 | 0-25 | dark grayish brown (10YR4/2) sandy loam | 10-20 cm: Native American ceramic (1), FCR (1), lithic (2) |
| 5-8.3 | 25-40 | strong brown (7.5YR4/6) sandy clay | |
| 5-9 | 0-37 | very dark grayish brown (10YR3/2) clay loam | 0-10 cm: metal (12), charcoal (1) |
| 5-9 | 37-50 | yellowish brown (10YR5/4) sandy clay | |
| 5-9.1 | 0-36 | brown (10YR4/3) sandy loam | |
| 5-9.1 | 36-48 | dark brown (10YR3/3) w/ 30% red (2.5YR4/6) clay | |
| 5-10 | 0-44 | dark grayish brown (10YR4/2) sandy clay loam | |
| 5-10 | 44-60 | yellowish brown (10YR5/4) sandy clay | |
| 5-11 | 0-16 | brown (10YR4/3) sandy loam | |
| 5-11 | 16-35 | strong brown (7.5YR5/8) sandy clay | |
| 5-12 | 0-29 | very dark grayish brown (10YR3/2) clay loam | |
| 5-12 | 29-50 | dark gray (10YR4/1) clay | |
| 6-1 | 0-45 | very dark grayish brown (10YR3/2) clay loam | |
| 6-1 | 45-55 | brown (7.5YR5/4) sandy clay | |
| 6-2 | 0-35 | very dark grayish brown (10YR3/2) clay loam | |
| 6-2 | 35-50 | brown (7.5YR5/4) sandy clay | |
| 6-2.3 | 0-35 | very dark grayish brown (10YR3/2) clay loam | |

| ST# | Depth (cm) | Description | Artifacts |
|-------|------------|--|----------------------|
| 6-2.3 | 35-50 | strong brown (7.5YR5/8) clay | |
| 6-3 | 0-10 | very dark grayish brown (10YR3/2) sandy loamy clay | |
| 6-3 | 10-25 | yellowish brown (10YR5/4) clay sand | |
| 6-3 | 25-35 | light gray (10YR7/2) w/ 50% yellowish brown (10YR5/6) clay | |
| 6-3.1 | 0-65 | dark yellowish brown (10YR4/4) sandy clay | |
| 6-3.1 | 65-75 | yellowish brown (10YR5/6) clay | |
| 6-3.2 | 0-30 | very dark grayish brown (10YR3/2) loamy clay | |
| 6-3.2 | 30-50 | strong brown (7.5YR5/6) sandy clay | |
| 6-3.3 | 0-15 | very dark grayish brown (10YR3/2) loamy clay | |
| 6-3.3 | 15-45 | strong brown (7.5YR5/8) sandy clay | |
| 6-4 | 0-15 | very dark grayish brown (10YR3/2) clay loam | |
| 6-4 | 15-30 | strong brown (7.5YR5/8) sandy clay | |
| 6-4.1 | 0-35 | very dark grayish brown (10YR3/2) loamy clay | |
| 6-4.1 | 35-60 | strong brown (7.5YR5/8) sandy clay | |
| 6-4.2 | 0-50 | brown (10YR4/3) loamy sandy clay | |
| 6-4.2 | 50-65 | strong brown (7.5YR4/6) sandy clay | |
| 6-4.3 | 0-45 | very dark grayish brown (10YR3/2) loamy clay | |
| 6-4.3 | 45-55 | strong brown (7.5YR5/6) sandy clay | |
| 6-5 | 0-30 | very dark grayish brown (10YR3/2) loamy clay | |
| 6-5 | 30-45 | dark yellowish brown (10YR4/4) sandy clay | |
| 6-5 | 45-60 | strong brown (7.5YR5/8) sandy clay | |
| 6-5.1 | 0-65 | dark gray (7.5YR4/1) clay | |
| 6-5.1 | 65-75 | strong brown (7.5YR5/8) clay | |
| 6-5.2 | 0-40 | very dark grayish brown (10YR3/2) loamy clay | |
| 6-5.2 | 40-55 | strong brown (7.5YR5/8) sandy clay | |
| 6-5.3 | 0-50 | dark gray (7.5YR4/1) clay | |
| 6-6 | 0-50 | dark grayish brown (10YR4/2) clay | |
| 6-6.1 | 0-35 | very dark grayish brown (10YR3/2) loamy clay | |
| 6-6.1 | 35-45 | strong brown (7.5YR5/8) sandy clay | |
| 6-6.2 | 0-30 | very dark grayish brown (10YR3/2) loamy clay | |
| 6-6.2 | 30-50 | strong brown (7.5YR5/8) sandy clay | |
| 6-6.3 | 0-35 | very dark grayish brown (10YR3/2) loamy clay | |
| 6-6.3 | 35-50 | strong brown (7.5YR5/8) sandy clay | |
| 6-7 | 0-20 | very dark grayish brown (10YR3/2) loamy clay | |
| 6-7 | 20-35 | strong brown (7.5YR5/8) sandy clay | |
| 6-8 | 0-30 | very dark grayish brown (10YR3/2) loamy clay | |
| 6-8 | 30-40 | dark yellowish brown (10YR4/6) clay | |
| 6-8.1 | 0-25 | dark grayish brown (10YR4/2) sandy loam | |
| 6-8.1 | 25-40 | strong brown (7.5YR4/6) sandy clay | |
| 6-8.2 | 0-30 | very dark grayish brown (10YR3/2) loamy clay | 10-20 cm: lithic (1) |
| 6-8.2 | 30-40 | strong brown (7.5YR5/8) sandy clay | |
| 6-8.3 | 0-20 | dark brown (10YR3/3) sandy loam | |
| 6-8.3 | 20-45 | brown (7.5YR4/3) sandy loam | 30-40 cm: lithic (1) |
| 6-8.3 | 45-55 | yellowish red (5YR4/6) clay | |
| 6-9 | 0-25 | very dark grayish brown (10YR3/2) clay | |
| 6-9 | 25-80 | dark grayish brown (10YR4/2) clay | |
| 6-9.1 | 0-27 | very dark grayish brown (10YR3/2) sandy loam | |
| 6-9.1 | 27-40 | strong brown (7.5YR5/8) clay | |
| 6-9.2 | 0-20 | dark brown (10YR3/3) sandy loam | |
| 6-9.2 | 20-30 | red (2.5YR4/6) clay | |
| 6-10 | 0-10 | very dark grayish brown (10YR3/2) loamy clay | |

| ST# | Depth (cm) | Description | Artifacts |
|-------|------------|--|---------------------------------------|
| 6-10 | 10-45 | yellowish brown (10YR5/6) clay | |
| 6-11 | 0-22 | very dark grayish brown (10YR3/2) loamy clay | |
| 6-11 | 22-35 | strong brown (7.5YR4/6) clay | |
| 6-12 | 0-125 | very dark grayish brown (10YR3/2) clay | |
| 6-12 | 125-140 | dark yellowish brown (10YR4/4) clay | |
| 7-1 | 0-5 | dark grayish brown (10YR4/2) sandy clay | |
| 7-1 | 5-15 | yellowish red (5YR4/6) clay loam | |
| 7-2 | 0-10 | dark grayish brown (10YR4/2) sandy clay | |
| 7-2 | 10-30 | yellowish red (5YR5/8) w/ 10% light yellowish brown (10YR6/4) clay loam | |
| 7-2.1 | 0-10 | dark grayish brown (10YR4/2) sandy clay | |
| 7-2.1 | 10-20 | yellowish red (5YR5/8) w/ 10% light yellowish brown (10YR6/4) clay loam | |
| 7-2.2 | 0-10 | dark grayish brown (10YR4/2) sandy clay | |
| 7-2.2 | 10-30 | yellowish red (5YR5/8) w/ 10% light yellowish brown (10YR6/4) clay loam | |
| 7-2.3 | 0-5 | dark grayish brown (10YR4/2) sandy clay | |
| 7-2.3 | 5-15 | strong brown (7.5YR5/8) w/ 20% strong brown (7.5YR4/6) and 20% light yellowish brown (10YR6/4) clay loam | |
| 7-3 | 0-30 | dark grayish brown (10YR4/2) sandy clay | |
| 7-3 | 30-35 | light brownish gray (10YR6/2) w/ 50% strong brown (7.5YR4/6) clay loam | |
| 7-3.1 | 0-12 | very dark grayish brown (10YR3/2) loamy clay | |
| 7-3.1 | 12-35 | strong brown (7.5YR5/6) sandy clay | |
| 7-3.2 | 0-8 | dark grayish brown (10YR4/2) sandy loam | |
| 7-3.2 | 8-20 | strong brown (7.5YR5/6) w/ 50% light brownish gray (10YR6/2) clay loam | |
| 7-3.3 | 0-15 | yellowish brown (10YR5/4) w/ 50% pale brown (10YR6/3) compact sandy clay | |
| 7-3.3 | 15-30 | yellowish brown (10YR5/4) w/ 20% strong brown (7.5YR4/6) clay loam | |
| 7-4 | 0-15 | dark grayish brown (10YR4/2) sandy clay | 0-10 cm: lithic (1), charcoal (1) |
| 7-4 | 15-25 | yellowish brown (10YR5/4) w/ 50% strong brown (7.5YR4/6) clay loam | |
| 7-4.1 | 0-20 | dark grayish brown (10YR4/2) sandy clay | |
| 7-4.1 | 20-30 | strong brown (7.5YR4/6) slightly sandy clay | |
| 7-4.2 | 0-20 | dark grayish brown (10YR4/2) sandy clay | |
| 7-4.2 | 20-30 | strong brown (7.5YR4/6) sandy clay | |
| 7-4.3 | 0-20 | dark gray (10YR4/1) slightly sandy clay | |
| 7-4.3 | 20-35 | strong brown (7.5YR4/6) w/ 40% dark grayish brown (10YR4/2) slightly sandy clay | |
| 7-5 | 0-20 | dark gray (10YR4/1) sandy clay | |
| 7-5 | 20-30 | strong brown (7.5YR4/6) slightly sandy clay | |
| 7-6 | 0-30 | dark grayish brown (10YR4/2) sandy clay | |
| 7-6 | 30-40 | strong brown (7.5YR4/6) slightly sandy clay | |
| 7-7 | 0-25 | Brown (10YR4/3) sandy clay | |
| 7-7 | 25-35 | yellowish brown (10YR5/4) w/ 50% yellowish red (5YR4/6) clay loam | |
| 7-7.2 | 0-17 | brown (7.5YR4/2) sandy loam | |
| 7-7.2 | 17-41 | pinkish gray (7.5YR6/2) clay sand | |
| 7-7.2 | 41-51 | yellowish red (5YR5/8) clay | |
| 7-7.3 | 0-28 | brown (7.5YR4/2) sandy loam | 0-10 cm: lithic (2); 10-20 cm: lithic |

| ST# | Depth (cm) | Description | Artifacts |
|-------|------------|---|--|
| | | | (1); 20-30 cm: lithic (1) |
| 7-7.3 | 28-47 | pinkish gray (7.5YR6/2) clay sand | 40-50 cm: lithic (1) |
| 7-7.3 | 47-55 | yellowish red (5YR5/8) clay | |
| 7-8 | 0-60 | dark grayish brown (10YR4/2) sandy clay | 20-30 cm: FCR (1); 50-60 cm: FCR (2), lithic (2), charcoal (1) |
| 7-8 | 60-85 | brown (7.5YR4/3) w/ 30% pale brown (10YR6/3) sandy clay | 60-70 cm: charcoal (1); 70-80 cm: charcoal (1), FCR (1) |
| 7-8.1 | 0-30 | dark grayish brown (10YR4/2) sandy loam | |
| 7-8.1 | 30-45 | strong brown (7.5YR4/6) sandy clay | |
| 7-8.2 | 0-23 | very dark grayish brown (10YR3/2) sandy loam | |
| 7-8.2 | 23-46 | pale brown (10YR6/3) fine sand | |
| 7-8.2 | 46-56 | strong brown (7.5YR5/6) w/ 20% gray (7.5YR6/1) and 15% dark red (2.5YR3/6) clay | |
| 7-8.3 | 0-34 | brown (10YR4/3) sandy loam | 10-20 cm: lithic (1), charcoal (1) |
| 7-8.3 | 34-45 | yellowish red (5YR5/8) sandy clay | |
| 7-9 | 0-35 | dark grayish brown (10YR4/2) sandy clay | 20-30 cm: lithic (3) |
| 7-9 | 35-45 | yellowish red (5YR5/6) sandy clay | |
| 7-9.1 | 0-5 | very dark grayish brown (10YR3/2) sandy clay loam | |
| 7-9.1 | 5-10 | red (2.5YR4/6) clay | |
| 7-10 | 0-25 | dark grayish brown (10YR4/2) sandy clay | |
| 7-10 | 25-35 | yellowish red (5YR5/6) sandy clay | |
| 7-11 | 0-20 | Brown (10YR4/3) sandy clay | |
| 7-11 | 20-35 | strong brown (7.5YR4/6) sandy clay | |
| 7-12 | 0-53 | very dark gray (10YR3/1) clay loam | |
| 8-1 | 0-14 | brown (7.5YR5/4) clay loam | |
| 8-1 | 14-40 | yellowish red (5YR5/6) clay | |
| 8-2 | 0-8 | brown (7.5YR5/4) clay loam | |
| 8-2 | 8-32 | yellowish red (5YR5/6) w/ 30% light gray (7.5YR7/1) clay | |
| 8-2 | 32-42 | yellowish red (5YR5/8) clay | |
| 8-2.3 | 0-9 | strong brown (7.5YR5/6) clay loam | |
| 8-2.3 | 9-25 | yellowish red (5YR5/6) w/ 20% light gray (7.5YR7/1) clay | |
| 8-2.3 | 25-38 | yellowish red (5YR5/8) clay | |
| 8-3 | 0-9 | brown (7.5YR5/4) clay loam | |
| 8-3 | 9-22 | reddish brown (5YR5/4) clay sand | |
| 8-3 | 22-38 | yellowish red (5YR5/6) sandy clay | |
| 8-3.1 | 0-9 | brown (7.5YR4/3) clay loam | |
| 8-3.1 | 9-23 | brown (7.5YR5/4) sandy clay | |
| 8-3.1 | 23-40 | yellowish red (5YR5/8) clay | |
| 8-3.2 | 0-9 | brown (7.5YR5/3) clay loam | |
| 8-3.2 | 9-19 | light brown (7.5YR6/4) clay sand | |
| 8-3.2 | 19-39 | yellowish red (5YR5/6) sandy clay | |
| 8-3.3 | 0-9 | dark gray (7.5YR4/1) loam | |
| 8-3.3 | 9-31 | light brown (7.5YR6/4) sandy loam | |
| 8-3.3 | 31-41 | dark brown (7.5YR3/4) sandy clay | |
| 8-4 | 0-10 | dark gray (7.5YR4/1) clay loam | |
| 8-4 | 10-28 | light brown (7.5YR6/4) clay sand | |
| 8-4 | 28-38 | yellowish red (5YR5/6) w/ 30% light gray (7.5YR7/1) sandy clay | |
| 8-4.1 | 0-8 | dark gray (7.5YR4/1) clay loam | |
| 8-4.1 | 8-26 | light brown (7.5YR6/4) clay sand | |

| ST# | Depth (cm) | Description | Artifacts |
|-------|------------|---|----------------------|
| 8-4.1 | 26-36 | yellowish red (5YR5/6) w/ 30% pinkish gray (7.5YR7/2) clay | |
| 8-4.2 | 0-13 | dark gray (7.5YR4/1) clay loam | |
| 8-4.2 | 13-21 | light brown (7.5YR6/4) clay sand | |
| 8-4.2 | 21-35 | yellowish red (5YR5/6) clay | |
| 8-4.3 | 0-12 | dark gray (7.5YR4/1) clay loam | |
| 8-4.3 | 12-24 | light brown (7.5YR6/4) clay sand | |
| 8-4.3 | 24-35 | yellowish red (5YR5/6) clay | |
| 8-5 | 0-5 | light brown (7.5YR6/4) clay sand | |
| 8-5 | 5-35 | yellowish red (5YR5/6) clay | |
| 8-6 | 0-27 | light brown (7.5YR6/4) w/ 30% brown (7.5YR4/2) clay loam | |
| 8-6 | 27-40 | pinkish gray (7.5YR7/2) silty clay | |
| 8-7 | 0-7 | dark gray (7.5YR4/1) clay loam | |
| 8-7 | 7-19 | light brown (7.5YR6/4) clay sand | |
| 8-7 | 19-30 | yellowish red (5YR5/6) clay | |
| 8-8 | 0-35 | Brown (7.5YR5/4) sandy loam | |
| 8-8 | 35-45 | Reddish yellow (5YR6/6) w/ 10% gray (7.5YR6/1) sandy clay | |
| 8-8.1 | 0-17 | brown (10YR4/3) sandy loam | |
| 8-8.1 | 17-39 | pale brown (10YR6/3) silty clay | |
| 8-8.1 | 39-51 | light yellowish brown (10YR6/4) w/ 20% gray (10YR6/1) and 10% red (2.5YR4/8) clay | |
| 8-8.2 | 0-30 | dark yellowish brown (10YR4/4) loamy sand | |
| 8-8.2 | 30-85 | dark yellowish brown (10YR4/6) clay sand | 40-50 cm: lithic (1) |
| 8-8.2 | 85-95 | yellowish red (5YR4/6) sandy clay | |
| 8-8.3 | 0-50 | dark yellowish brown (10YR3/4) clay sand | |
| 8-8.3 | 50-60 | yellowish red (5YR4/6) sandy clay | |
| 8-9 | 0-48 | Brown (7.5YR5/4) sandy loam | |
| 8-9 | 48-62 | Reddish yellow (7.5YR6/6) sandy clay | |
| 8-9.1 | 0-43 | brown (10YR4/3) sandy loam | 10-20 cm: lithic (1) |
| 8-9.1 | 43-56 | yellowish red (5YR5/8) clay | |
| 8-9.2 | 0-20 | dark brown (10YR3/3) sandy loam | |
| 8-9.2 | 20-44 | yellowish red (5YR5/8) w/ 40% dark brown (10YR3/3) | |
| 8-10 | 0-30 | Brown (7.5YR5/4) clay loam | |
| 8-10 | 30-40 | Gray (7.5YR6/1) w/ 30% reddish yellow (7.5YR6/6) silty clay | |
| 8-11 | 0-33 | Brown (7.5YR5/3) sandy loam | |
| 8-11 | 33-40 | Reddish yellow (7.5YR6/6) silty clay | |
| 8-12 | 0-40 | Brown (7.5YR5/3) sandy loam | |
| 8-12 | 40-50 | Gray (7.5YR5/1) compact sandy loam | |
| 9-1 | 0-10 | very dark grayish brown (10YR3/2) sandy loam | |
| 9-1 | 10-25 | brown (7.5YR4/3) sandy loam | |
| 9-1 | 25-40 | yellowish red (5YR4/6) w/ 30% pale brown (10YR6/3) clay | |
| 9-1.1 | 0-7 | very dark grayish brown (10YR3/2) sandy loam | |
| 9-1.1 | 7-23 | brown (10YR5/3) sandy loam | |
| 9-1.1 | 23-40 | pale brown (10YR6/3) w/ 30% yellowish brown (10YR5/8) clay | |
| 9-1.2 | 0-6 | very dark grayish brown (10YR3/2) sandy loam | |
| 9-1.2 | 6-17 | brown (10YR5/3) sandy loam | |
| 9-1.2 | 17-35 | strong brown (7.5YR5/8) w/ 20% light reddish | |

| ST# | Depth (cm) | Description | Artifacts |
|-------|------------|--|----------------------|
| | | brown (2.5YR6/3) and 10% yellowish red (5YR5/8) clay | |
| 9-1.3 | 0-27 | yellowish brown (10YR5/4) sandy loam | |
| 9-1.3 | 27-42 | brownish yellow (10YR6/6) w/ 30% yellowish red (5YR5/8) clay | |
| 9-2 | 0-10 | dark brown (10YR3/3) sandy loam | |
| 9-2 | 10-30 | brown (7.5YR5/4) sandy loam | |
| 9-2 | 30-40 | red (2.5YR4/6) w/ 15% strong brown (7.5YR4/6) clay | |
| 9-3 | 0-15 | brown (7.5YR5/4) sandy loam | |
| 9-3 | 15-40 | red (2.5YR4/6) w/ 15% strong brown (7.5YR4/6) clay | |
| 9-3.1 | 0-8 | dark brown (10YR3/3) sandy loam | |
| 9-3.1 | 8-15 | brown (7.5YR5/4) sandy loam | |
| 9-3.1 | 15-35 | red (2.5YR4/6) w/ 20% pale brown (10YR6/3) clay | |
| 9-3.2 | 0-12 | dark brown (7.5YR3/3) sandy loam | |
| 9-3.2 | 12-40 | reddish brown (5YR4/4) sandy clay loam | 10-20 cm: lithic (1) |
| 9-3.2 | 40-45 | strong brown (7.5YR4/6) w/ 25% pale brown (10YR6/3) clay | |
| 9-3.3 | 0-25 | very dark grayish brown (10YR3/2) sandy loam | |
| 9-3.3 | 25-40 | yellowish red (5YR4/6) clay | |
| 9-4 | 0-20 | dark yellowish brown (10YR3/4) sandy clay | |
| 9-4 | 20-35 | yellowish red (5YR4/6) w/ 25% strong brown (7.5YR4/6) clay | |
| 9-4.1 | 0-15 | brown (7.5YR4/2) w/ 20% yellowish red (5YR4/6) clay | |
| 9-4.1 | 15-30 | dark brown (7.5YR3/2) w/ 25% yellowish red (5YR4/6) clay | |
| 9-4.2 | 0-20 | brown (7.5YR4/2) sandy clay loam | |
| 9-4.2 | 20-30 | brown (7.5YR5/2) w/ 30% yellowish red (5YR4/6) clay | |
| 9-4.3 | 0-30 | brown (7.5YR4/3) sandy loam | 10-20 cm: lithic (1) |
| 9-4.3 | 30-45 | yellowish red (5YR4/6) w/ 10% strong brown (7.5YR4/6) clay | 30-40 cm: lithic (1) |
| 9-5 | 0-15 | brown (7.5YR4/3) sandy loam | |
| 9-5 | 15-30 | yellowish red (5YR4/6) w/ 15% strong brown (7.5YR4/6) clay | |
| 9-5.1 | 0-8 | dark brown (7.5YR3/4) sandy loam | |
| 9-5.1 | 8-30 | dark red (dark red (2.5YR3/6)) clay | |
| 9-6 | 0-35 | dark brown (7.5YR3/2) sandy clay loam | |
| 9-6 | 35-80 | grayish brown (10YR5/2) sandy loam | |
| 9-6 | 80-85 | dark brown (7.5YR3/2) clay | |
| 9-7 | 0-23 | yellowish red (5YR5/6) w/ 20% reddish brown (5YR5/3) clay | |
| 9-7 | 23-40 | dark brown (7.5YR3/2) clay | |
| 9-8 | 0-25 | Brown (10YR4/3) sandy clay loam | |
| 9-8 | 25-45 | Pale brown (10YR6/3) w/ 20% strong brown (7.5YR5/6) clay | |
| 9-9 | 0-20 | Dark brown (7.5YR3/3) sandy loam | |
| 9-9 | 20-35 | Pale brown (10YR6/3) sandy loam | |
| 9-9 | 35-50 | Reddish brown (5YR5/4) w/ 35% dark red (2.5YR3/6) clay | |

| ST# | Depth (cm) | Description | Artifacts |
|--------|------------|---|--|
| 9-9.2 | 0-40 | dark brown (10YR3/3) sandy loam | |
| 9-9.2 | 40-50 | dark brown (10YR3/3) w/ 30% yellowish red (5YR5/8) clay | |
| 9-9.3 | 0-47 | dark brown (10YR3/3) sandy loam | 20-30 cm: European ceramic (2), charcoal (1) |
| 9-9.3 | 47-52 | red (2.5YR4/6) clay | |
| 9-10 | 0-15 | Dark brown (10YR3/3) sandy loam | |
| 9-10 | 15-27 | Pale brown (10YR6/3) sandy loam | |
| 9-10 | 27-35 | Reddish brown (5YR5/4) w/ 30% dark red (2.5YR3/6) clay | |
| 9-10.2 | 0-30 | very dark grayish brown (10YR3/2) sandy loam | |
| 9-10.2 | 30-40 | strong brown (7.5YR5/6) sandy clay | |
| 9-11 | 0-20 | Dark brown (10YR3/3) sandy loam | |
| 9-11 | 20-40 | Red (2.5YR4/8) clay | |
| 9-12 | 0-15 | Brown (7.5YR4/3) sandy clay loam | |
| 9-12 | 15-40 | Yellowish red (5YR5/6) clay | |
| 10-0.3 | 0-9 | very dark grayish brown (10YR3/2) sandy loam | |
| 10-0.3 | 9-26 | yellowish brown (10YR5/4) sandy loam | |
| 10-0.3 | 26-45 | light gray (10YR7/2) w/ 15% red (2.5YR4/8) and 5% strong brown (7.5YR5/8) clay | |
| 10-1 | 0-10 | very dark grayish brown (10YR3/2) sandy loam | |
| 10-1 | 10-35 | yellowish brown (10YR5/4) sandy loam | |
| 10-1 | 35-40 | strong brown (7.5YR4/6) w/ 10% yellowish red (5YR5/6) and 10% yellowish brown (10YR5/4) sandy clay | |
| 10-1.1 | 0-19 | brown (10YR4/3) sandy loam | |
| 10-1.1 | 19-38 | yellowish brown (10YR5/6) w/ 15% yellowish red (5YR5/8) clay | |
| 10-2.3 | 0-5 | brown (10YR4/3) sandy loam | |
| 10-2.3 | 5-15 | yellowish brown (10YR5/4) sandy loam | |
| 10-2.3 | 15-52 | light yellowish brown (10YR6/4) w/ 20% grayish brown (10YR5/2), 10% yellowish brown (10YR5/8), and 5% red (2.5YR4/8) clay | |
| 10-3 | 0-65 | yellowish brown (10YR5/4) sandy loam | 0-10 cm: lithic (1); 10-20 cm: lithic (1); 20-30 cm: lithic (1); 30-40 cm: lithic (1); 50-60 cm: FCR (1), lithic (1) |
| 10-3 | 65-75 | reddish yellow (7.5YR6/6) w/ 10% yellowish red (5YR5/6) and 10% light gray (10YR7/2) sandy clay | |
| 10-3.1 | 0-26 | yellowish brown (10YR5/4) sandy loam | |
| 10-3.1 | 26-45 | yellowish red (5YR5/8) w/ 10% yellowish red (5YR4/6) clay | |
| 10-3.2 | 0-18 | dark yellowish brown (10YR4/4) sandy loam | |
| 10-3.2 | 18-31 | yellowish red (5YR5/8) w/ 20% light yellowish brown (10YR6/4) clay | |
| 10-3.3 | 0-4 | very dark grayish brown (10YR3/2) sandy loam | |
| 10-3.3 | 4-14 | brown (10YR5/3) sandy loam | |
| 10-3.3 | 14-34 | yellowish red (5YR5/8) w/ 20% light brownish gray (10YR6/2) clay | |
| 10-4 | 0-50 | yellowish brown (10YR5/4) loam | 30-40 cm: lithic (1) |
| 10-4 | 50-55 | reddish yellow (7.5YR6/6) w/ 10% very pale brown (10YR8/2) and 10% yellowish red (5YR5/6) sandy clay | |

| ST# | Depth (cm) | Description | Artifacts |
|---------|------------|---|--|
| 10-4.1 | 0-20 | yellowish brown (10YR5/4) loam | |
| 10-4.1 | 20-30 | yellowish red (5YR5/6) w/ 20% yellowish brown (10YR5/4) clay | |
| 10-4.2 | 0-15 | yellowish brown (10YR5/4) loam | |
| 10-4.2 | 15-25 | yellowish red (5YR5/6) w/ 20% yellowish brown (10YR5/4) clay | |
| 10-5 | 0-18 | very dark grayish brown (10YR3/2) loam | |
| 10-5 | 18-30 | strong brown (7.5YR4/6) w/ 40% very dark grayish brown (10YR3/2) sandy clay | |
| 10-6 | 0-20 | very dark grayish brown (10YR3/2) clay loam | |
| 10-6 | 20-30 | strong brown (7.5YR4/6) w/ 40% very dark grayish brown (10YR3/2) clay | |
| 10-7 | 0-10 | brown (10YR4/3) loam | |
| 10-7 | 10-25 | brown (7.5YR4/4) sandy clay | |
| 10-8 | 0-5 | Dark grayish brown (10YR4/2) loam | |
| 10-8 | 5-15 | Brown (10YR5/3) loam | |
| 10-8 | 15-30 | Yellowish red (5YR4/6) w/ 40% brown (10YR5/3) sandy clay | |
| 10-8.3 | 0-45 | brown (10YR5/3) sandy loam | |
| 10-8.3 | 45-50 | strong brown (7.5YR5/6) sandy clay | |
| 10-9 | 0-5 | Dark grayish brown (10YR4/2) sandy loam | |
| 10-9 | 5-80 | Brown (10YR5/3) sandy loam | 20-30 cm: lithic (2); 30-40 cm: lithic (1); 40-50 cm: lithic (1) |
| 10-9 | 80-90 | Strong brown (7.5YR4/6) clay | |
| 10-9.1 | 0-40 | brown (10YR4/3) sandy loam | |
| 10-9.1 | 40-45 | strong brown (7.5YR5/6) sandy clay | |
| 10-9.2 | 0-10 | brown (10YR4/3) sandy loam | |
| 10-9.2 | 10-35 | light brownish gray (10YR6/2) sandy clay | |
| 10-9.2 | 35-40 | brown (7.5YR4/2) clay | |
| 10-9.3 | 0-40 | dark yellowish brown (10YR3/4) loamy clay | |
| 10-9.3 | 40-50 | strong brown (7.5YR5/6) sandy clay | |
| 10-10 | 0-35 | Dark grayish brown (10YR4/2) sandy loam | 0-10 cm: lithic (2); 10-20 cm: lithic (1) |
| 10-10 | 35-45 | Strong brown (7.5YR4/6) w/ 20% brown (7.5YR5/3) sandy clay | |
| 10-10.1 | 0-25 | brown (10YR4/3) sandy loam | |
| 10-10.1 | 25-30 | strong brown (7.5YR4/6) w/ 10% brown (10YR4/3) clay | |
| 10-11 | 0-15 | Very dark gray (10YR3/1) loam | |
| 10-11 | 15-35 | Strong brown (7.5YR4/6) clay | |
| 10-12 | 0-60 | Brown (10YR4/3) sandy loam | |
| 10-12 | 60-70 | Very dark grayish brown (10YR3/2) sandy clay | |
| 11-1 | 0-10 | dark grayish brown (10YR4/2) sandy loam | |
| 11-1 | 10-40 | brownish yellow (10YR6/6) loamy sand | |
| 11-1 | 40-50 | light gray (10YR7/2) w/ 20% strong brown (7.5YR5/8) clay | |
| 11-1.1 | 0-20 | brown (10YR4/3) sandy loam | |
| 11-1.1 | 20-35 | strong brown (7.5YR5/8) w/ 10% gray (10YR6/1) clay | |
| 11-1.2 | 0-16 | brown (10YR4/3) sandy loam | |
| 11-1.2 | 16-30 | strong brown (7.5YR5/8) w/ 15% gray (10YR6/1) clay | |
| 11-1.3 | 0-30 | brown (10YR4/3) sandy loam | |
| 11-1.3 | 30-46 | strong brown (7.5YR5/8) w/ 30% gray | |

| ST# | Depth (cm) | Description | Artifacts |
|--------|------------|--|--|
| | | (10YR6/1) sandy clay | |
| 11-2 | 0-33 | brown (10YR4/3) sandy loam | |
| 11-2 | 33-41 | strong brown (7.5YR5/8) clay | |
| 11-3 | 0-22 | brown (10YR4/3) sandy loam | |
| 11-3 | 22-35 | light gray (10YR7/2) w/ 20% strong brown (7.5YR5/8) clay | |
| 11-3.1 | 0-7 | brown (10YR4/3) sandy loam | |
| 11-3.1 | 7-47 | yellowish brown (10YR5/4) fine sand | |
| 11-3.1 | 47-60 | light gray (10YR7/2) w/ 30% yellowish red (5YR4/6) sandy clay | |
| 11-3.2 | 0-28 | yellowish brown (10YR5/4) sandy loam | |
| 11-3.2 | 28-40 | yellowish red (5YR5/8) w/ 10% light yellowish brown (10YR6/4) clay | |
| 11-3.3 | 0-38 | yellowish brown (10YR5/4) sandy loam | |
| 11-3.3 | 38-50 | strong brown (7.5YR5/8) clay | |
| 11-4 | 0-16 | dark grayish brown (10YR4/2) sandy loam | |
| 11-4 | 16-38 | brownish yellow (10YR6/6) sandy loam | |
| 11-4 | 38-52 | strong brown (7.5YR5/8) clay | |
| 11-4.1 | 0-7 | very dark grayish brown (10YR3/2) sandy loam | |
| 11-4.1 | 7-32 | brown (10YR5/3) sandy loam | |
| 11-4.1 | 32-43 | yellowish red (5YR5/8) w/ 15% light brownish gray (10YR6/2) clay | |
| 11-4.2 | 0-5 | very dark grayish brown (10YR3/2) sandy loam | |
| 11-4.2 | 5-24 | yellowish brown (10YR5/4) sandy loam | |
| 11-4.2 | 24-33 | yellowish red (5YR5/8) w/ 10% 5YR4/6 clay | |
| 11-4.3 | 0-28 | brown (10YR4/3) sandy loam | |
| 11-4.3 | 28-40 | pale red (2.5YR6/2) w/ 25% yellowish red (5YR5/8) clay | |
| 11-5 | 0-5 | dark grayish brown (10YR4/2) sandy loam | |
| 11-5 | 5-30 | brownish yellow (10YR6/6) loamy sand | |
| 11-5 | 30-40 | light gray (10YR7/2) clay | |
| 11-6 | 0-10 | very dark grayish brown (10YR3/2) loam | |
| 11-6 | 10-25 | yellowish red (5YR4/6) w/ 20% very dark grayish brown (10YR3/2) sandy clay | |
| 11-7 | 0-10 | very dark grayish brown (10YR3/2) loam | |
| 11-7 | 10-25 | strong brown (7.5YR4/6) w/ 40% reddish yellow (7.5YR6/6) clay | |
| 11-8 | 0-16 | Dark grayish brown (10YR4/2) sandy loam | |
| 11-8 | 16-25 | Strong brown (7.5YR5/8) clay | |
| 11-8 | 25-33 | Very pale brown (10YR7/3) w/ 10% red (2.5YR4/8) clay | |
| 11-9 | 0-5 | Dark grayish brown (10YR4/2) sandy loam | |
| 11-9 | 5-67 | Brownish yellow (10YR6/6) loamy sand | |
| 11-9 | 67-75 | Strong brown (7.5YR5/8) clay | |
| 11-9.2 | 0-10 | dark grayish brown (10YR4/2) loam | |
| 11-9.2 | 10-41 | yellowish brown (10YR5/4) sandy loam | |
| 11-9.2 | 41-50 | strong brown (7.5YR5/8) clay | |
| 11-9.3 | 0-14 | dark grayish brown (10YR4/2) loam | |
| 11-9.3 | 14-40 | yellowish brown (10YR5/4) sandy loam | |
| 11-9.3 | 40-49 | strong brown (7.5YR5/8) clay | |
| 11-10 | 0-3 | Dark grayish brown (10YR4/2) sandy loam | |
| 11-10 | 3-42 | Brownish yellow (10YR6/6) loamy sand | 20-30 cm: lithic (1), charcoal (1); 30-40 cm: charcoal (2) |

| ST# | Depth (cm) | Description | Artifacts |
|---------|------------|---|-----------|
| 11-10 | 42-54 | Strong brown (7.5YR5/8) clay | |
| 11-10.1 | 0-15 | brown (10YR4/3) sandy loam | |
| 11-10.1 | 15-20 | yellowish brown (10YR5/4) sandy loam | |
| 11-10.1 | 20-30 | strong brown (7.5YR4/6) sandy clay | |
| 11-10.2 | 0-23 | yellowish brown (10YR5/4) sandy loam | |
| 11-10.2 | 23-30 | strong brown (7.5YR5/8) clay | |
| 11-11 | 0-20 | Dark grayish brown (10YR4/2) sandy loam | |
| 11-11 | 20-33 | Strong brown (7.5YR5/8) clay | |
| 11-12 | 0-9 | Dark grayish brown (10YR4/2) sandy loam | |
| 11-12 | 9-28 | Reddish yellow (10YR6/6) loamy sand | |
| 11-12 | 28-40 | Strong brown (7.5YR5/8) clay | |
| 12-1 | 0-6 | very dark grayish brown (10YR3/2) sandy loam | |
| 12-1 | 6-15 | yellowish brown (10YR5/4) sandy loam | |
| 12-1 | 15-30 | yellowish red (5YR5/8) w/ 10% yellowish red (5YR4/6) and 10% gray (10YR6/1) clay | |
| 12-1.1 | 0-28 | brown (10YR4/3) sandy loam | |
| 12-1.1 | 28-40 | strong brown (7.5YR5/8) w/ 30% gray (10YR6/1) sandy clay | |
| 12-1.2 | 0-24 | brown (10YR4/3) sandy loam | |
| 12-1.2 | 24-38 | strong brown (7.5YR5/8) w/ 15% gray (10YR6/1) sandy clay | |
| 12-1.3 | 0-17 | brown (10YR4/3) sandy loam | |
| 12-1.3 | 17-45 | yellowish brown (10YR5/4) sandy loam | |
| 12-1.3 | 45-53 | strong brown (7.5YR5/8) w/ 10% gray (10YR6/1) sandy clay | |
| 12-2 | 0-10 | very dark grayish brown (10YR3/2) sandy loam | |
| 12-2 | 10-32 | gray (10YR6/1) w/ 20% strong brown (7.5YR5/8) clay | |
| 12-3 | 0-6 | very dark grayish brown (10YR3/2) sandy loam | |
| 12-3 | 6-39 | yellowish brown (10YR5/4) sandy loam | |
| 12-3 | 39-45 | strong brown (7.5YR5/8) sandy clay | |
| 12-4 | 0-12 | brown (10YR4/3) sandy loam | |
| 12-4 | 12-23 | 10YR5/4 sand | |
| 12-4 | 23-32 | yellowish red (5YR5/8) clay | |
| 12-5 | 0-31 | dark grayish brown (10YR4/2) silty clay | |
| 12-5 | 31-45 | pale brown (10YR6/3) w/ 15% strong brown (7.5YR4/6) sandy clay | |
| 12-7 | 0-24 | dark yellowish brown (10YR4/4) sandy loam | |
| 12-7 | 24-33 | yellowish brown (10YR5/6) w/ 15% gray (10YR5/1), 10% yellowish brown (10YR5/8), 10% yellowish red (5YR5/8), and 5% pale red (2.5YR7/2) clay | |
| 12-8 | 0-11 | brown (10YR4/3) sandy loam | |
| 12-8 | 11-27 | light yellowish brown (10YR6/4) sand | |
| 12-8 | 27-41 | strong brown (7.5YR5/6) w/ 20% yellowish red (5YR4/6) clay | |
| 12-9 | 0-14 | brown (10YR4/3) sandy loam | |
| 12-9 | 14-48 | pale brown (10YR6/3) sand | |
| 12-9 | 48-57 | strong brown (7.5YR5/8) w/ 20% dark grayish brown (10YR4/2) and 10% yellowish red (5YR5/8) | |
| 12-9.2 | 0-30 | yellowish brown (10YR5/4) sandy loam | |
| 12-9.2 | 30-36 | strong brown (7.5YR5/8) clay | |

| ST# | Depth (cm) | Description | Artifacts |
|--------|------------|---|-----------|
| 12-10 | 0-14 | very dark grayish brown (10YR3/2) clay loam | |
| 12-10 | 14-18 | pale brown (10YR6/3) sandy loam | |
| 12-10 | 18-40 | strong brown (7.5YR5/8) clay | |
| 12-11 | 0-14 | very dark grayish brown (10YR3/2) sandy loam | |
| 12-11 | 14-35 | strong brown (7.5YR5/8) sandy clay | |
| 12-12 | 0-8 | very dark gray (10YR3/1) clay | |
| 12-12 | 8-52 | dark gray (10YR4/1) clay | |
| 13-1 | 0-25 | very dark grayish brown (10YR3/2) loamy clay | |
| 13-1 | 25-40 | yellowish red (5YR4/6) sandy clay | |
| 13-2 | 0-50 | very dark grayish brown (10YR3/2) loamy sandy clay | |
| 13-2 | 50-60 | yellowish red (5YR4/6) sandy clay | |
| 13-3 | 0-20 | very dark grayish brown (10YR3/2) loamy sandy clay | |
| 13-3 | 20-45 | very pale brown (10YR7/3) clay | |
| 13-3 | 45-60 | yellowish brown (10YR5/4) sandy clay | |
| 13-4 | 0-15 | very dark grayish brown (10YR3/2) loamy sandy clay | |
| 13-4 | 15-70 | dark yellowish brown (10YR4/4) w/ 50% 5/6 sandy clay | |
| 13-5 | 0-55 | very dark grayish brown (10YR3/2) loamy clay | |
| 13-5 | 55-70 | yellowish brown (10YR5/4) w/ 15% very pale brown (10YR7/3) sandy clay | |
| 13-6 | 0-40 | very dark grayish brown (10YR3/2) clay | |
| 13-6 | 40-50 | yellowish brown (10YR5/4) sandy clay | |
| 13-7 | 0-15 | very dark grayish brown (10YR3/2) loamy clay | |
| 13-7 | 15-30 | yellowish brown (10YR5/4) sandy clay | |
| 13-8 | 0-20 | very dark grayish brown (10YR3/2) loamy clay | |
| 13-8 | 20-35 | dark yellowish brown (10YR4/6) sandy clay | |
| 13-9 | 0-40 | very dark grayish brown (10YR3/2) clay | |
| 13-9 | 40-50 | dark grayish brown (10YR4/2) clay | |
| 13-10 | 0-20 | very dark grayish brown (10YR3/2) clay | |
| 13-10 | 20-30 | dark yellowish brown (10YR4/6) clay | |
| 13-11 | 0-45 | very dark grayish brown (10YR3/2) loamy clay | |
| 13-11 | 45-55 | dark yellowish brown (10YR4/6) sandy clay | |
| 13-12 | 0-35 | very dark grayish brown (10YR3/2) loamy clay | |
| 13-12 | 35-50 | dark grayish brown (10YR4/2) clay | |
| 14-0.1 | 0-30 | dark grayish brown (10YR4/2) sandy clay | |
| 14-0.1 | 30-35 | grayish brown (10YR5/2) w/ 50% yellowish red (5YR5/8) slightly sandy clay | |
| 14-0.2 | 0-25 | dark grayish brown (10YR4/2) sandy clay | |
| 14-0.2 | 25-35 | yellowish red (5YR4/6) slightly sandy clay | |
| 14-0.3 | 0-10 | dark grayish brown (10YR4/2) sandy clay | |
| 14-0.3 | 10-20 | grayish brown (10YR5/2) sandy clay | |
| 14-0.3 | 20-25 | yellowish brown (10YR5/4) w/ 50% grayish brown (10YR5/2) sandy clay | |
| 14-1 | 0-10 | dark grayish brown (10YR4/2) sandy clay | |
| 14-1 | 10-20 | grayish brown (10YR5/2) sandy clay | |
| 14-1 | 20-35 | yellowish brown (10YR5/4) w/ 50% dark grayish brown (10YR4/2) sandy clay | |
| 14-2 | 0-20 | dark grayish brown (10YR4/2) sandy clay | |
| 14-2 | 20-35 | very dark gray (10YR3/1) clay | |
| 14-3 | 0-35 | brown (10YR4/3) sandy clay | |

| ST# | Depth (cm) | Description | Artifacts |
|--------|------------|---|---|
| 14-3 | 35-40 | light brownish gray (10YR6/2) w/ 50% strong brown (7.5YR5/8) sandy clay | |
| 14-4 | 0-15 | brown (10YR4/3) sandy clay | |
| 14-4 | 15-25 | pale brown (10YR6/3) w/ 50% red (2.5YR4/8) sandy clay | |
| 14-5 | 0-15 | dark grayish brown (10YR4/2) sandy clay | |
| 14-5 | 15-45 | brown (10YR5/3) sandy clay | |
| 14-5 | 45-65 | light gray (10YR7/2) w/ 50% yellowish brown (10YR5/4) sandy clay | |
| 14-8 | 0-25 | light brownish gray (10YR6/2) sandy clay | |
| 14-8 | 25-40 | yellowish red (5YR4/6) clay loam | |
| 14-9 | 0-35 | dark grayish brown (10YR4/2) sandy clay | |
| 14-9 | 35-65 | grayish brown (10YR5/2) sandy clay | |
| 14-10 | 0-30 | very dark gray (10YR3/1) clay loam | |
| 14-10 | 30-45 | yellowish red (5YR4/6) clay loam | |
| 14-11 | 0-55 | dark grayish brown (10YR4/2) sandy clay | |
| 14-11 | 55-60 | brown (10YR4/3) w/ 50% very dark grayish brown (10YR3/2) clay loam | |
| 14-12 | 0-50 | very dark gray (10YR3/1) clay loam | |
| 15-1 | 0-11 | brown (7.5YR5/4) clay loam | |
| 15-1 | 11-46 | yellow (10YR7/6) clay sand | |
| 15-1 | 46-54 | yellowish red (5YR5/8) w/ 10% very dark gray (7.5YR3/1) sandy clay | |
| 15-1.1 | 0-28 | brown (7.5YR5/4) clay sand | |
| 15-1.1 | 28-40 | reddish yellow (5YR6/8) clay | |
| 15-1.2 | 0-15 | brown (7.5YR5/3) clay loam | |
| 15-1.2 | 15-28 | yellow (10YR7/6) clay sand | 10-20 cm: glass (3), European ceramic (3) |
| 15-1.2 | 28-40 | reddish yellow (5YR6/8) w/ 10% light gray (7.5YR7/1) clay | |
| 15-1.3 | 0-20 | very dark grayish brown (10YR3/2) sandy loam | |
| 15-1.3 | 20-24 | yellowish brown (10YR5/4) sandy loam | |
| 15-1.3 | 24-36 | yellowish red (5YR4/6) clay | |
| 15-2 | 0-16 | brown (7.5YR5/3) clay loam | |
| 15-2 | 16-52 | yellow (10YR7/6) clay sand | |
| 15-2 | 52-60 | reddish yellow (5YR6/8) w/ 40% 7.5YR7/1 compact sandy clay | |
| 15-3 | 0-16 | brown (7.5YR5/3) clay loam | |
| 15-3 | 16-38 | yellow (10YR7/6) clay sand | |
| 15-3 | 38-48 | reddish yellow (5YR6/8) w/ 30% light gray (7.5YR7/1) sandy clay | |
| 15-4 | 0-17 | brown (7.5YR5/3) clay loam | |
| 15-4 | 17-42 | yellow (10YR7/6) clay sand | |
| 15-4 | 42-52 | reddish yellow (5YR6/8) w/ 10% black (7.5YR2.5/1) clay | |
| 15-5 | 0-16 | brown (7.5YR5/3) clay loam | |
| 15-5 | 16-42 | yellow (10YR7/6) clay sand | |
| 15-5 | 42-53 | reddish yellow (5YR6/8) clay | |
| 15-6 | 0-16 | brown (7.5YR5/3) clay loam | |
| 15-6 | 16-35 | strong brown (7.5YR5/8) clay | |
| 15-7 | 0-11 | brown (7.5YR4/2) sandy loam | |
| 15-7 | 11-30 | strong brown (7.5YR5/6) silty clay | |
| 15-8 | 0-14 | Brown (7.5YR5/4) sandy loam | |

| ST# | Depth (cm) | Description | Artifacts |
|--------|------------|--|-------------------------------|
| 15-8 | 14-40 | Reddish yellow (7.5YR6/6) w/ 10% yellowish red (5YR5/8) clay | |
| 15-9 | 0-10 | Gray (7.5YR5/1) sandy loam | |
| 15-9 | 10-22 | Strong brown (7.5YR5/6) sandy loam | |
| 15-9 | 22-43 | Light gray (7.5YR7/1) sand | |
| 15-9 | 43-52 | Reddish yellow (7.5YR6/6) clay | |
| 15-10 | 0-26 | Brown (7.5YR5/4) sandy loam | |
| 15-10 | 26-40 | Reddish yellow (7.5YR6/6) sandy clay | |
| 15-11 | 0-10 | Gray (7.5YR5/1) sandy loam | |
| 15-11 | 10-26 | Reddish brown (5YR5/4) sandy loam | |
| 15-11 | 26-38 | Gray (7.5YR5/1) clay loam | |
| 15-11 | 38-45 | Dark brown (7.5YR3/2) sandy clay | |
| 15-12 | 0-40 | Gray (7.5YR5/1) loamy clay | |
| 15-12 | 40-45 | Dark brown (7.5YR3/2) clay | |
| 16-0.1 | 0-50 | yellowish brown (10YR5/4) sandy loam | 0-10 cm: European ceramic (1) |
| 16-0.2 | 0-30 | yellowish brown (10YR5/4) sandy loam | |
| 16-0.2 | 30-37 | yellowish red (5YR4/6) clay | |
| 16-1 | 0-11 | brown (10YR4/3) sandy loam | |
| 16-1 | 11-50 | brown (7.5YR5/4) sandy loam | |
| 16-1 | 50-60 | brown (7.5YR5/4) w/ 25% 10UR6/3 clay | |
| 16-2 | 0-15 | brown (10YR4/3) sandy loam | |
| 16-2 | 15-40 | reddish brown (5YR4/4) sandy loam | |
| 16-2 | 40-50 | red (2.5YR4/6) w/ 35% strong brown (7.5YR4/6) clay | |
| 16-3 | 0-20 | brown (10YR4/3) sandy loam | |
| 16-3 | 20-50 | reddish brown (5YR4/4) sandy loam | |
| 16-3 | 50-60 | reddish brown (5YR5/4) w/ 20% strong brown (7.5YR4/6) clay | |
| 16-4 | 0-40 | brown (10YR4/3) clay loam | |
| 16-4 | 40-50 | brown (10YR5/3) w/ 25% strong brown (7.5YR4/6) clay | |
| 16-6 | 0-25 | dark brown (7.5YR3/3) sandy loam | |
| 16-6 | 25-40 | brown (10YR4/3) w/ 25% red (2.5YR4/6) clay | |
| 16-7 | 0-13 | Dark yellowish brown (10YR4/4) sandy loam | |
| 16-7 | 13-50 | Brown (7.5YR4/4) sandy loam | |
| 16-7 | 50-60 | Red (2.5YR4/6) sandy clay | |
| 16-8 | 0-17 | Dark grayish brown (10YR4/2) sandy loam | |
| 16-8 | 17-40 | Red (2.5YR4/6) w/ 20% brown (7.5YR4/3) clay | |
| 16-9 | 0-14 | Dark reddish brown (5YR3/2) sandy loam | |
| 16-9 | 14-55 | Brown (7.5YR4/4) sandy loam | |
| 16-9 | 55-100 | Brown (10YR5/3) sandy loam | |
| 16-9 | 100-110 | Brown (7.5YR4/3) sandy clay | |
| 16-10 | 0-20 | Black (10YR2/1) clay | |
| 16-10 | 20-30 | Very dark gray (10YR3/1) clay | |
| 16-11 | 0-30 | Black (10YR2/1) clay | |
| 16-11 | 30-40 | Very dark gray (10YR3/1) clay | |
| 17-1 | 0-20 | brown (10YR5/3) sandy clay | |
| 17-1 | 20-35 | dark grayish brown (10YR4/2) clay | |
| 17-2 | 0-35 | brown (10YR5/3) sandy loam | |
| 17-2 | 35-40 | strong brown (7.5YR4/6) w/ 30% brown (10YR5/3) clay | |
| 17-2.1 | 0-27 | brown (7.5YR5/4) sandy loam | |
| 17-2.1 | 27-57 | brown (7.5YR5/4) w/ 20% yellowish red | |

| ST# | Depth (cm) | Description | Artifacts |
|--------|------------|--|---|
| | | (5YR5/6) clay | |
| 17-2.2 | 0-20 | dark grayish brown (10YR4/2) sandy loam | 0-20 cm: European ceramic (1) |
| 17-2.2 | 20-29 | dark reddish brown (5YR3/2) w/ 30% yellowish red (5YR4/6) clay | |
| 17-2.3 | 0-23 | brown (10YR5/3) sandy loam | |
| 17-2.3 | 23-36 | yellowish red (5YR5/8) silty clay | |
| 17-3 | 0-10 | very dark grayish brown (10YR3/2) loam | |
| 17-3 | 10-25 | strong brown (7.5YR4/6) w/ 10% very dark grayish brown (10YR3/2) clay | |
| 17-4 | 0-10 | dark brown (7.5YR3/2) loam | |
| 17-4 | 10-25 | strong brown (7.5YR4/6) w/ 30% dark brown (7.5YR3/2) clay | |
| 17-5 | 0-15 | dark brown (7.5YR3/2) loam | |
| 17-5 | 15-25 | strong brown (7.5YR4/6) w/ 30% dark brown (7.5YR3/2) clay | |
| 17-6 | 0-35 | pale brown (10YR6/3) sandy loam | |
| 17-6 | 35-40 | strong brown (7.5YR4/6) w/ 40% pale brown (10YR6/3) clay | |
| 17-7 | 0-5 | very dark grayish brown (10YR3/2) loam | |
| 17-7 | 5-30 | brown (10YR5/3) sandy loam | |
| 17-7 | 30-40 | strong brown (7.5YR4/6) clay | |
| 17-8 | 0-10 | very dark gray (10YR3/1) clay loam | |
| 17-8 | 10-20 | brown (10YR5/3) sandy clay | |
| 17-8 | 20-35 | strong brown (7.5YR4/6) clay | |
| 17-9 | 0-20 | very dark gray (10YR3/1) clay loam | |
| 17-9 | 20-45 | dark grayish brown (10YR4/2) sandy clay | |
| 17-10 | 0-80 | black (10YR2/1) clay | |
| 18-1 | 0-57 | brownish yellow (10YR6/6) sand | |
| 18-1 | 57-70 | light gray (10YR7/2) sandy clay | |
| 18-1.3 | 0-10 | brown (10YR4/3) sandy loam | |
| 18-1.3 | 10-25 | yellowish brown (10YR5/4) sandy loam | |
| 18-1.3 | 25-32 | strong brown (7.5YR5/6) sandy clay | |
| 18-2 | 0-20 | very dark grayish brown (10YR3/2) sandy loam | 10-20 cm: European ceramic (6), glass (1) |
| 18-2 | 20-37 | Brownish yellow (10YR6/6) loamy sand | 20-30 cm: glass (2) |
| 18-2 | 37-46 | strong brown (7.5YR5/8) clay | |
| 18-2.1 | 0-32 | dark grayish brown (10YR4/2) sandy loam | 10-20 cm: metal (1), glass (1); 20-30 cm: metal (2) |
| 18-2.1 | 32-38 | yellowish red (5YR5/8) clay | |
| 18-2.2 | 0-26 | black (10YR2/1) sandy loam | |
| 18-2.2 | 26-36 | brownish yellow (10YR6/6) clay | |
| 18-3 | 0-10 | dark grayish brown (10YR4/2) sandy loam | |
| 18-3 | 10-42 | brownish yellow (10YR6/6) loamy sand | |
| 18-3 | 42-63 | light gray (10YR7/2) w/ 20% light yellowish brown (10YR6/4) sandy clay | |
| 18-4 | 0-10 | brown (10YR4/3) sandy loam | |
| 18-4 | 10-30 | strong brown (7.5YR5/8) clay | |
| 18-5 | 0-7 | brown (10YR4/3) sandy loam | |
| 18-5 | 7-30 | brownish yellow (10YR6/6) loamy sand | |
| 18-5 | 30-45 | light gray (10YR7/2) clay | |
| 18-6 | 0-10 | brown (10YR4/3) sandy loam | |
| 18-6 | 10-35 | brownish yellow (10YR6/6) loamy sand | |
| 18-6 | 35-45 | strong brown (7.5YR5/8) clay | |

| ST# | Depth (cm) | Description | Artifacts |
|---------|------------|---|--|
| 18-7 | 0-11 | dark grayish brown (10YR4/2) sandy loam | |
| 18-7 | 11-34 | brownish yellow (10YR6/6) loamy sand | |
| 18-7 | 34-45 | strong brown (7.5YR5/8) clay | |
| 18-8 | 0-12 | dark grayish brown (10YR4/2) sandy loam | |
| 18-8 | 12-38 | very pale brown (10YR7/3) w/ 20% yellowish brown (10YR5/6) loamy sand | |
| 18-8 | 38-74 | very dark gray (10YR3/1) clay | |
| 18-9 | 0-63 | very dark gray (10YR3/1) clay | |
| 18-10 | 0-59 | very dark gray (10YR3/1) clay | |
| 19-0.1 | 0-55 | brown (10YR5/3) sandy loam | 0-10 cm: glass (1), metal (1); 10-20 cm: glass (1), metal (1); 20-30 cm: metal(2) |
| 19-0.1W | 0-25 | brown (10YR5/3) sandy loam | |
| 19-0.2 | 0-32 | very dark grayish brown (10YR3/2) sandy loam | 10-20 cm: metal (1), European ceramic (1), glass (2); 20-30 cm: glass (2), European ceramic (1), metal (1) |
| 19-0.2 | 32-49 | yellowish red (5YR4/6) sandy clay | |
| 19-0.3 | 0-4 | very dark grayish brown (10YR3/2) sandy loam | |
| 19-0.3 | 4-40 | yellowish brown (10YR5/4) very compact fine sand | |
| 19-0.3 | 40-46 | yellowish red (5YR5/8) sandy clay | |
| 19-1 | 0-26 | dark grayish brown (10YR4/2) sandy loam | |
| 19-1 | 26-38 | yellowish red (5YR5/6) clay | |
| 19-2 | 0-9 | very dark grayish brown (10YR3/2) clay loam | |
| 19-2 | 9-49 | yellowish brown (10YR5/4) sandy clay loam | |
| 19-2 | 49-60 | dark grayish brown (10YR4/2) silty clay | |
| 19-3 | 0-17 | very dark grayish brown (10YR3/2) clay loam | |
| 19-3 | 17-35 | strong brown (7.5YR5/8) clay | |
| 19-4 | 0-16 | dark grayish brown (10YR4/2) sandy loam | |
| 19-4 | 16-42 | light yellowish brown (10YR6/4) sand | |
| 19-4 | 42-55 | strong brown (7.5YR5/8) sandy clay | |
| 19-5 | 0-8 | brown (10YR4/3) sandy loam | |
| 19-5 | 8-34 | light yellowish brown (10YR6/4) sand | |
| 19-5 | 34-40 | strong brown (7.5YR5/8) sandy clay | |
| 19-6 | 0-12 | very dark grayish brown (10YR3/2) clay loam | |
| 19-6 | 12-35 | strong brown (7.5YR5/8) sandy clay | |
| 19-7 | 0-7 | black (10YR2/1) clay loam | |
| 19-7 | 7-50 | very dark gray (10YR3/1) clay | |
| 20-1 | 0-35 | very dark grayish brown (10YR3/2) sandy clay loam | |
| 20-1 | 35-50 | dark brown (10YR3/3) sandy clay | |
| 20-2 | 0-60 | very pale brown (10YR7/3) w/ 50% strong brown (7.5YR5/6) clay | |
| 20-3 | 0-45 | dark gray (10YR4/1) clay | |
| 20-4 | 0-20 | very dark grayish brown (10YR3/2) loamy clay | |
| 20-4 | 20-54 | yellowish brown (10YR5/4) clay sand | |
| 20-4 | 54-60 | strong brown (7.5YR4/6) sandy clay | |
| 20-5 | 0-10 | very dark grayish brown (10YR3/2) loamy clay | |
| 20-5 | 10-30 | yellowish brown (10YR5/4) clay sand | |
| 20-5 | 30-40 | dark yellowish brown (10YR4/6) sandy clay | |
| 20-6 | 0-15 | very dark grayish brown (10YR3/2) loamy clay | |
| 20-6 | 15-70 | dark brown (10YR3/3) loamy sandy clay | |
| 21-1 | 0-25 | dark grayish brown (10YR4/2) sandy clay | |

| ST# | Depth (cm) | Description | Artifacts |
|-------|------------|---|---------------------|
| 21-1 | 25-40 | light brownish gray (10YR6/2) w/ 50% light yellowish brown (10YR6/4) sandy clay | 30-40 cm: metal (1) |
| 21-2 | 0-25 | brown (10YR4/3) sandy clay | |
| 21-2 | 25-35 | reddish brown (5YR5/4) w/ 50% brown (10YR5/3) sandy clay | |
| 21-3 | 0-10 | dark grayish brown (10YR4/2) sandy clay | |
| 21-3 | 10-35 | dark yellowish brown (10YR4/4) sandy clay | |
| 21-3 | 35-45 | reddish brown (5YR5/4) sandy clay | |
| 21-4 | 0-25 | brown (10YR5/3) sandy clay | |
| 21-4 | 25-33 | yellowish red (5YR5/8) sandy clay | |
| M21-5 | 0-25 | brown (10YR4/3) sandy clay | |
| M21-5 | 25-40 | light brownish gray (10YR6/2) w/ 50% strong brown (7.5YR5/8) sandy clay | |
| 22-1 | 0-12 | dark brown (7.5YR3/3) clay loam | |
| 22-1 | 12-28 | gray (7.5YR5/1) clay sand | |
| 22-1 | 28-40 | very dark gray (7.5YR3/1) clay | |
| 22-2 | 0-14 | brown (7.5YR5/3) loam | |
| 22-2 | 14-49 | very pale brown (10YR8/2) sand | |
| 22-2 | 49-62 | strong brown (7.5YR5/8) sandy clay | |
| 22-3 | 0-8 | brown (7.5YR5/3) clay loam | |
| 22-3 | 8-26 | gray (7.5YR5/1) sandy loam | |
| 22-3 | 26-40 | strong brown (7.5YR5/8) clay | |
| 23-1 | 0-20 | gray (10YR5/1) w/ 20% strong brown (7.5YR4/6) clay | |
| 23-1 | 20-35 | dark gray (7.5YR4/1) clay | |
| 23-2 | 0-12 | dark brown (10YR3/3) sandy loam | |
| 23-2 | 12-25 | brown (7.5YR4/3) sandy loam | |
| 23-2 | 25-35 | red (2.5YR4/6) clay | |
| 23-3 | 0-17 | dark brown (7.5YR3/2) sandy clay loam | |
| 23-3 | 17-40 | very dark gray (7.5YR3/1) clay | |
| 23-4 | 0-10 | dark brown (10YR3/3) sandy loam | |
| 23-4 | 10-20 | brown (7.5YR4/3) sandy loam | |
| 23-4 | 20-40 | red (2.5YR4/6) clay | |
| 24-1 | 0-11 | brown (7.5YR5/2) clay loam | |
| 24-1 | 11-42 | gray (7.5YR6/1) clay sand | |
| 24-1 | 42-53 | dark gray (7.5YR4/1) sandy clay | |
| 24-2 | 0-7 | brown (7.5YR5/2) clay loam | |
| 24-2 | 7-19 | light brown (7.5YR6/4) loam | |
| 24-2 | 19-32 | gray (7.5YR6/1) clay sand | |
| 24-2 | 32-40 | dark gray (7.5YR4/1) sandy clay | |
| 24-3 | 0-19 | brown (7.5YR5/2) clay loam | |
| 24-3 | 19-35 | black (7.5YR2.5/1) clay | |
| 24-4 | 0-16 | light brown (7.5YR6/3) sandy loam | |
| 24-4 | 16-23 | light gray (10YR7/2) sand | |
| 24-4 | 23-32 | dark brown (10YR3/3) sandy clay | |
| 24-4 | 32-45 | strong brown (7.5YR5/8) w/ 10% white (7.5YR8/1) clay | |
| 25-1 | 0-10 | dark brown (7.5YR3/2) sandy loam | |
| 25-1 | 10-35 | brown (7.5YR5/4) sandy loam | |
| 25-1 | 35-50 | dark brown (7.5YR3/2) w/ 15% strong brown (7.5YR4/6) clay | |
| 25-2 | 0-14 | dark brown (7.5YR3/2) sandy clay loam | |
| 25-2 | 14-40 | red (2.5YR4/6) w/ 20% pale brown (10YR6/3) | |

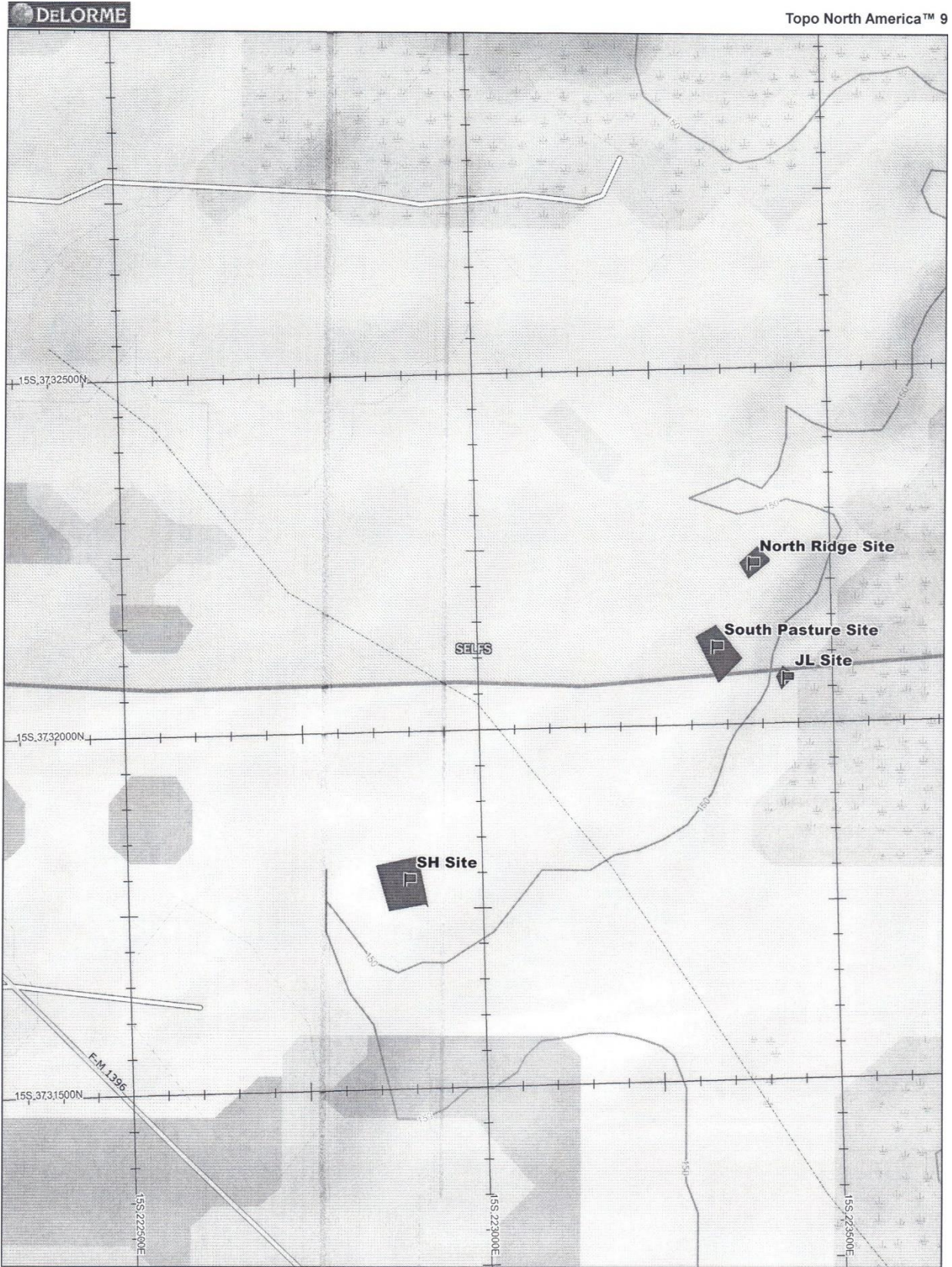
| ST# | Depth (cm) | Description | Artifacts |
|--------|------------|---|----------------------|
| | | clay | |
| 25-3 | 0-13 | dark brown (10YR3/3) sandy loam | |
| 25-3 | 13-40 | brown (7.5YR4/2) w/ 15% strong brown (7.5YR4/6) clay | |
| 26-1 | 0-45 | brown (10YR4/3) sandy clay | |
| 26-1 | 45-70 | light yellowish brown (10YR6/4) sandy clay | |
| 26-1 | 70-80 | strong brown (7.5YR5/8) w/ 10% pinkish gray (7.5YR7/2) sandy clay | |
| 26-2 | 0-7 | dark brown (7.5YR3/3) sandy loam | |
| 26-2 | 7-19 | brown (7.5YR4/4) sandy loam | |
| 26-2 | 19-30 | yellowish red (5YR4/6) sandy loam | |
| 26-2 | 30-40 | red (2.5YR4/6) clay | |
| 26-3 | 0-20 | very dark gray (10YR3/1) clay | |
| 26-3 | 20-40 | dark gray (10YR4/1) clay | |
| 27-1 | 0-10 | Yellowish brown (10YR5/4) sandy loam | |
| 27-1 | 10-60 | Light yellowish brown (10YR6/4) silty sand | |
| 27-1 | 60-70 | Yellowish brown (10YR5/6) w/ 20% pale brown (10YR6/3) sandy clay | |
| 27-2 | 0-10 | Light brownish gray (10YR6/2) sandy loam | |
| 27-2 | 10-40 | Very pale brown (10YR7/3) silty loam | |
| 27-2 | 40-50 | White (10YR8/1) w/ 40% strong brown (7.5YR5/6) sandy clay | |
| 28-1 | 0-10 | Dark grayish brown (10YR4/2) sandy loam | |
| 28-1 | 10-30 | Yellowish brown (10YR5/4) w/ 10% yellowish brown (10YR5/8) silty clay | |
| 28-1 | 30-40 | Strong brown (7.5YR5/6) w/ 20% light yellowish brown (10YR6/4) sandy clay | |
| 28-1.2 | 0-32 | yellowish brown (10YR5/4) sandy loam | |
| 21-1.2 | 32-39 | strong brown (7.5YR5/8) clay | |
| 28-2 | 0-20 | Pale brown (10YR6/3) w/ 40% strong brown (7.5YR5/6) clay | |
| 28-2 | 20-30 | Yellowish brown (10YR5/4) w/ 15% yellowish brown (10YR5/8) silty clay | |
| 28-2 | 30-40 | Strong brown (7.5YR5/6) w/ 50% light yellowish brown (10YR6/4) clay | |
| 29-0.3 | 0-35 | brown (7.5YR5/4) sandy loam | |
| 29-0.3 | 35-45 | yellowish brown (10YR5/4) w/ 20% pale brown (10YR6/3) clay | |
| 29-1 | 0-10 | Dark grayish brown (10YR4/2) sandy loam | |
| 29-1 | 10-20 | Yellowish brown (10YR5/4) silty loam | 10-20 cm: lithic (1) |
| 29-1 | 20-40 | Strong brown (7.5YR5/6) sandy clay | |
| 29-1.1 | 0-22 | brown (7.5YR5/4) loamy clay | |
| 29-1.1 | 22-32 | reddish yellow (7.5YR6/8) clay | |
| 29-2 | 0-20 | Brown (10YR4/3) silty loam | |
| 29-2 | 20-50 | Grayish brown (10YR5/2) silty clay | |
| 29-2 | 50-60 | Very dark grayish brown (10YR3/2) clay | |
| 30-1 | 0-20 | Dark yellowish brown (10YR4/6) sandy loam | |
| 30-1 | 20-30 | Light yellowish brown (10YR6/4) sandy loam | |
| 30-1 | 30-50 | Very dark gray (10YR3/1) clay | |
| 30-1.3 | 0-45 | yellowish brown (10YR5/4) clay sand | |
| 30-1.3 | 45-60 | dark yellowish brown (10YR4/6) sandy clay | |
| 176-1 | 0-25 | dark grayish brown (10YR4/2) sandy loam | |
| 176-1 | 25-45 | strong brown (7.5YR4/6) w/ 50% light | |

| ST# | Depth (cm) | Description | Artifacts |
|--------|------------|--|----------------------|
| | | yellowish brown (10YR6/4) sandy clay | |
| 176-2 | 0-25 | dark grayish brown (10YR4/2) sandy loam | |
| 176-2 | 25-50 | brownish yellow (10YR6/6) sandy clay | |
| 176-3 | 0-29 | dark yellowish brown (10YR4/4) loam | |
| 176-3 | 29-50 | brownish yellow (10YR6/6) sandy clay | 30-40 cm: lithic (1) |
| 176-4 | 0-10 | brown (10YR4/3) w/ 20% strong brown (7.5YR4/6) sandy loam | |
| 176-4 | 10-30 | strong brown (7.5YR4/6) sandy clay | |
| 177-1 | 0-25 | brown (10YR4/3) sandy loam | |
| 177-1 | 25-35 | yellowish red (5YR5/6) sandy clay | |
| 177-2 | 0-9 | dark grayish brown (10YR4/2) clay loam | |
| 177-2 | 9-21 | yellowish brown (10YR5/6) clay sand | |
| 177-2 | 21-34 | yellowish red (5YR5/8) clay | |
| 177-3 | 0-20 | brown (10YR4/3) sandy loam | |
| 177-3 | 20-40 | yellowish red (5YR5/6) sandy clay | |
| 177-4 | 0-17 | dark brown (10YR3/3) sandy clay loam | |
| 177-4 | 17-30 | red (2.5YR4/6) w/ 15% brown (7.5YR4/4) clay | |
| 178-1 | 0-25 | brown (10YR4/3) loamy sand | |
| 178-1 | 25-35 | yellowish red (5YR5/6) sandy clay | |
| 178-2 | 0-31 | yellowish brown (10YR5/6) clay loam | |
| 178-2 | 31-41 | yellowish red (5YR5/8) clay | |
| 178-3 | 0-20 | brown (7.5YR4/3) sandy clay | |
| 178-3 | 20-30 | red (2.5YR4/6) w/ 30% brown (7.5YR4/3) clay | |
| 178-4 | 0-40 | yellowish brown (10YR5/6) clay loam | |
| 178-4 | 40-50 | yellowish red (5YR5/8) clay | |
| 179-7 | 0-28 | dark yellowish brown (10YR4/4) clay loam | |
| 179-7 | 28-44 | light gray (10YR7/2) w/ 20% strong brown (7.5YR5/8) clay | |
| 179-8 | 0-55 | yellowish brown (10YR5/4) w/ 50% brown (7.5YR5/4) clay | |
| 179-8 | 55-70 | yellowish red (5YR4/6) sandy clay | |
| 179-9 | 0-5 | brown (10YR4/3) sandy loam | |
| 179-9 | 5-55 | yellowish brown (10YR5/4) sandy loam | |
| 179-9 | 55-65 | strong brown (7.5YR5/6) w/ 20% yellowish brown (10YR5/4) and 10% yellowish red (5YR5/6) sandy clay | |
| 179-10 | 0-30 | yellowish brown (10YR5/4) sandy loam | |
| 179-10 | 30-40 | yellowish red (5YR5/6) sandy clay | |
| 179-11 | 0-33 | dark yellowish brown (10YR4/4) clay loam | |
| 179-11 | 33-40 | strong brown (7.5YR5/8) clay | |
| 179-12 | 0-45 | brown (7.5YR5/4) sandy loam | |
| 179-12 | 45-50 | strong brown (7.5YR5/6) sandy clay | |
| 179-13 | 0-10 | brown (7.5YR4/3) sandy loam | |
| 179-13 | 10-40 | brown (7.5YR5/3) sandy loam | |
| 179-13 | 40-50 | brown (7.5YR5/4) w/ 30% yellowish red (5YR4/6) clay | |
| 179-16 | 0-28 | grayish brown (10YR5/2) clay fine sand | |
| 179-16 | 28-41 | yellowish red (5YR5/8) silty clay | |
| 179-17 | 0-32 | grayish brown (10YR5/2) clay fine sand | |
| 179-17 | 32-42 | yellowish red (5YR5/8) silty clay | |
| 179-18 | 0-20 | brown (7.5YR4/3) sandy loam | |
| 179-18 | 20-35 | brown (7.5YR5/3) sandy loam | |
| 179-18 | 35-45 | brown (7.5YR5/4) w/ 30% yellowish red | |

| ST# | Depth (cm) | Description | Artifacts |
|---------|------------|--|---------------------|
| | | (5YR4/6) sandy clay | |
| 179-19 | 0-23 | dark grayish brown (10YR4/2) sandy loam | 10-20 cm: glass (2) |
| 179-19 | 23-49 | light yellowish brown (10YR6/4) sandy loam | |
| 179-19 | 49-52 | yellowish red (5YR5/8) sandy clay | |
| 179-20 | 0-18 | brown (10YR4/3) sandy loam | |
| 179-20 | 18-34 | light brownish gray (10YR6/2) sandy loam | |
| 179-20 | 34-43 | yellowish red (5YR4/6) w/ 20% gray (5YR5/1) clay | |
| M179-24 | 0-68 | grayish brown (10YR5/2) clay fine sand | |
| M179-24 | 68-77 | yellowish red (5YR5/8) silty clay | |
| M179-25 | 0-10 | brown (7.5YR4/3) sandy loam | |
| M179-25 | 10-35 | strong brown (7.5YR5/6) sandy loam | |
| M179-25 | 35-45 | yellowish red (5YR4/6) sandy clay | |
| M179-26 | 0-35 | brown (7.5YR5/4) sandy loam | |
| M179-26 | 35-45 | strong brown (7.5YR4/6) sandy clay | |
| M179-27 | 0-40 | yellowish brown (10YR5/4) loamy sand | |
| M179-27 | 40-50 | yellowish red (5YR4/6) sandy clay | |
| 179-28 | 0-34 | brown (10YR5/3) sandy loam | |
| 179-28 | 34-47 | strong brown (7.5YR5/6) sandy clay | |

APPENDIX B

Original Site Map Submitted to TARL for SH Site (41FN179)



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