

**Cultural Resource Survey for the Terrestrial Portions of the
Reservoir Loop Project
Madison and Rankin Counties, Mississippi**



Figure 1.1. East overview from shovel test R-30.

Prepared for:
Messinger & Associates, Inc.



Prepared by
Michael Fedoroff
Pritchett Engineering and Planning, LLC.
November 21, 2011

**Cultural Resource Survey for the Terrestrial Portions of the
Reservoir Loop Project
Madison and Rankin Counties, Mississippi**

By
Michael Fedoroff

Prepared for:

Jeffrey M. Messinger, PLS
Messinger & Associates, Inc.
630 East Jefferson Avenue
Bastrop, Louisiana 71221

AND

Mississippi Department of Archives and History
P.O. Box 571
Jackson, Mississippi 39205-0571



Prepared by:
Pritchett Engineering and Planning, LLC.
797 Liberty Road
Suite 200
Flowood, Mississippi 39232

Michael Peter Fedoroff
Principal Investigator
November 15, 2011

The use of this report is restricted to those with the need-to-know in compliance with the National Historic Preservation Act of 1966, the National Environment Policy Act of 1969, and the "Procedures for the Protection of Historic and Cultural Properties" (36DFR800), established by the Advisory Council on Historic Preservation. In addition, attention was given to provisions of Executive Order 11593 and Public Law 93-291 as well as state laws.

TABLE OF CONTENTS

<i>TABLE OF CONTENTS</i>	iii
<i>MANAGEMENT SUMMARY</i>	iv
<i>LIST OF FIGURES</i>	v
<i>LIST OF TABLES</i>	vi
CHAPTER I	1
Introduction.....	1
Scope of Work	1
Research Design.....	1
Organization of the Report	4
CHAPTER II	5
Environmental Overview.....	5
CHAPTER III	13
Brief Prehistory of the Area.....	13
Paleoindian/Archaic Stage (12,500 BC – 2,500BC)	16
Gulf Formational Stage (2,500 BC – 500BC)	19
Woodland Stage (500 BC – AD 1000).....	20
Mississippi Stage (A.D. 1000 – 1700).....	24
Brief Historical Overview	26
CHAPTER IV	28
Previous Investigations of the Survey Area.....	28
Previous Archaeological Investigations	28
Previously Recorded Archaeological Sites	28
CHAPTER V	31
Field Investigations	31
Conduct of the Survey	31
CHAPTER VI	39
Summary and Recommendations.....	39
<i>Appendix A</i>	40
<i>REFERENCES CITED</i>	44

MANAGEMENT SUMMARY

In September, 2011 Messinger & Associates, Inc contracted with Pritchett Engineering and Planning, LLC (PEP) to conduct a Phase I cultural resource survey on 4.2 miles 6776 meters (22231 feet) of proposed right of way (ROW) for a CO2 pipeline in Madison and Rankin Counties, Mississippi. The Project area is located off Natchez Trace Parkway in Section 27, 28, 34.5, Township 8 North, Range 3 East, Section 1 Township 7 North Range 3 East of the Shoccoe and Goshen USGS Topographic Quadrangle (Figure 1.2).

Background research on the project area conducted on September 20, 2011 revealed that three sites were within a one- mile buffer zone, 22RA559 is under water due to the Ross Barnett Reservoir. 22MD508 and 22MD640 are north east of the projects west end. Fieldwork was conducted on the terrestrial portion of the project by the Author and a team of four PEP archaeologists on September 22, 23, and 26 of 2011. A total of 92 shovel test locations were investigated along the project ROW. Shovel testing produced two isolated finds, each containing 1 flake, with further delineation of the two positive shovel tests producing no more cultural resources. No other cultural resources were uncovered during this survey. Additionally, a visual inspection of a 300 meter (984 feet) buffer zone revealed no standing structures that would be deemed eligible for listing on the National Register of Historic Places.

Based on the findings of this study, the project should be cleared to begin ground disturbing activities, with one exception. In the remote possibility that archaeological features or human remains are found during construction on the proposed ROW, work should be delayed on that area and the survey archaeologist, and the MDAH, Historic Preservation Division, should be contacted immediately. The notes and computer files associated with this survey will be stored with the Principal Investigator, Michael P. Fedoroff, at Pritchett Engineering and Planning, LLC and a full report will be on file at MDAH- HP.

LIST OF FIGURES

Figure 1.1.	East overview from shovel test R-30.....	i
Figure 1.2.	Project location Topographic Map.	2
Figure 1.3.	Project location Aerial Map.	3
Figure 2.1.	Physiographic regions of Mississippi.	7
Figure 2.2.	Geology of the Project area.....	8
Figure 2.3.	Soil Map of the project area.....	9
Figure 2.4.	Plan view of shovel test R-1.	10
Figure 2.5.	Plan view of shovel test R-57.....	11
Figure 2.6.	Plan view of shovel test R-61.....	11
Figure 2.7.	Hydrology Map of project area.	12
Figure 3.1.	Clay Sandstone features.....	18
Figure 3.2.	Clay Sandstone features.....	18
Figure 3.3.	A) Mud Creek biface B) Flint Creek-Pontchartrain biface.....	20
Figure 3.4	Mossy Ridge <i>var. Mossy Ridge</i> . (Adapted from Fields et al. 2005)	22
Figure 3.5.	Artist sketch of Mulberry Creek Cordmarked.	23
Figure 3.6.	Collins point (artist rendition in double scale).....	24
Figure 3.7.	Map Indian Cessions of Mississippi During 1800s.....	27
Figure 4.1.	Previous Cultural Resource Sites and Surveys within one mile of Project APE	29
Figure 4.2.	Previous Cultural Resource Sites and Surveys within one mile of Project APE	30
Figure 5.1.	Topographic map of STP location on West side of Project Area.	35
Figure 5.2.	Topographic map of STP location on Eastern side of Project Area.....	36
Figure 5.3.	Plan view of shovel test R-24.....	37
Figure 5.4.	Plan view of ground at shovel test R-38.....	37
Figure 5.5.	Plan view of shovel test R-55.....	38
Figure A.1.	Garrett Rouse digging shovel test.....	40
Figure A.2.	Rosie Mayfield entering point in GPS.....	41
Figure A.3.	North overview of pumping station.....	41
Figure A.4.	Plan view of shovel test R-13.....	42
Figure A.5.	South overview of Old Trace.	42
Figure A.6.	Plan view of shovel test R-56.....	43

LIST OF TABLES

Table 2.1.	Selected Fauna of Mississippi.	6
Table 3.1.	Pine Hills ceramic chronology. (After Fields et al. 2005).	14
Table 3.2.	Blitz and Mann’s synthesis of Mississippi Coastal chronology.	15
Table 3.3.	Chronology of Indian Culture in Southwest Alabama. (After Gardner 2005).	21
Table 3.4.	Summary of cultural traditions found in South Mississippi (After Jackson 1995)...	25
Table 4.1.	Previous Surveys within 1 mile (1.6 km) buffer.	28
Table 4.2.	Previous Recorded Sites within 1 mile (1.6 km) buffer.	28
Table 5.1.	Actions at each Shovel Test.	32

CHAPTER I

Introduction

Scope of Work

The following is a report of Phase I cultural resource survey performed in Madison and Rankin County for a 1.4 miles /2244meter/7362.2 ft. ROW for a CO2 pipeline in Section 27, 28, 34.5, Township 8 North, Range 3 East, Section 1 Township 7 North, Range 3 East, of the Shoccoe and Goshen Springs USGS Topographic Quadrangle (Figure 1.2). In September, 2011 Messinger & Associates, Inc. contracted with Pritchett Engineering and Planning, LLC (PEP) to conduct a Phase I cultural resource survey. Background research on the project area conducted on September 20, 2011 revealed that three sites were within a one- mile buffer zone, 22RA559 is under water due to the Ross Barnett Reservoir. 22MD508, 22MD640 are on the west side of the Reservoir to the north east of the project western end. Fieldwork was conducted by the Author of this report along with a team of four PEP archaeologists on October 27, 2011. It is important to note that this report addresses only the portion of the project ROW that is on the ground. Further work and an additional report will be filed for the underwater portions of this project.

Research Design

This Cultural Resource Survey addressed five objectives: 1) to determine the vertical and horizontal distribution of cultural deposits; 2) to determine the density and distribution of artifacts; 3) evaluate any extant structures for historic significance; 4) identify the chronological and cultural affiliations of the components represented; 5) collect a sample of archaeological remains that represent any identified sites. Field methods and a research design were created to accomplish this task.

Prior to entering the fieldwork environment, an extensive site file/background search was undertaken by the Pritchett Archaeologists. This search included an in-depth map reconnaissance of the study area in order to formulate the highest probable locations for cultural resources to be identified. This is done with the intent of maximizing time in the field, and quickly locating cultural deposits during a Phase I survey in order to better delineate their boundaries.

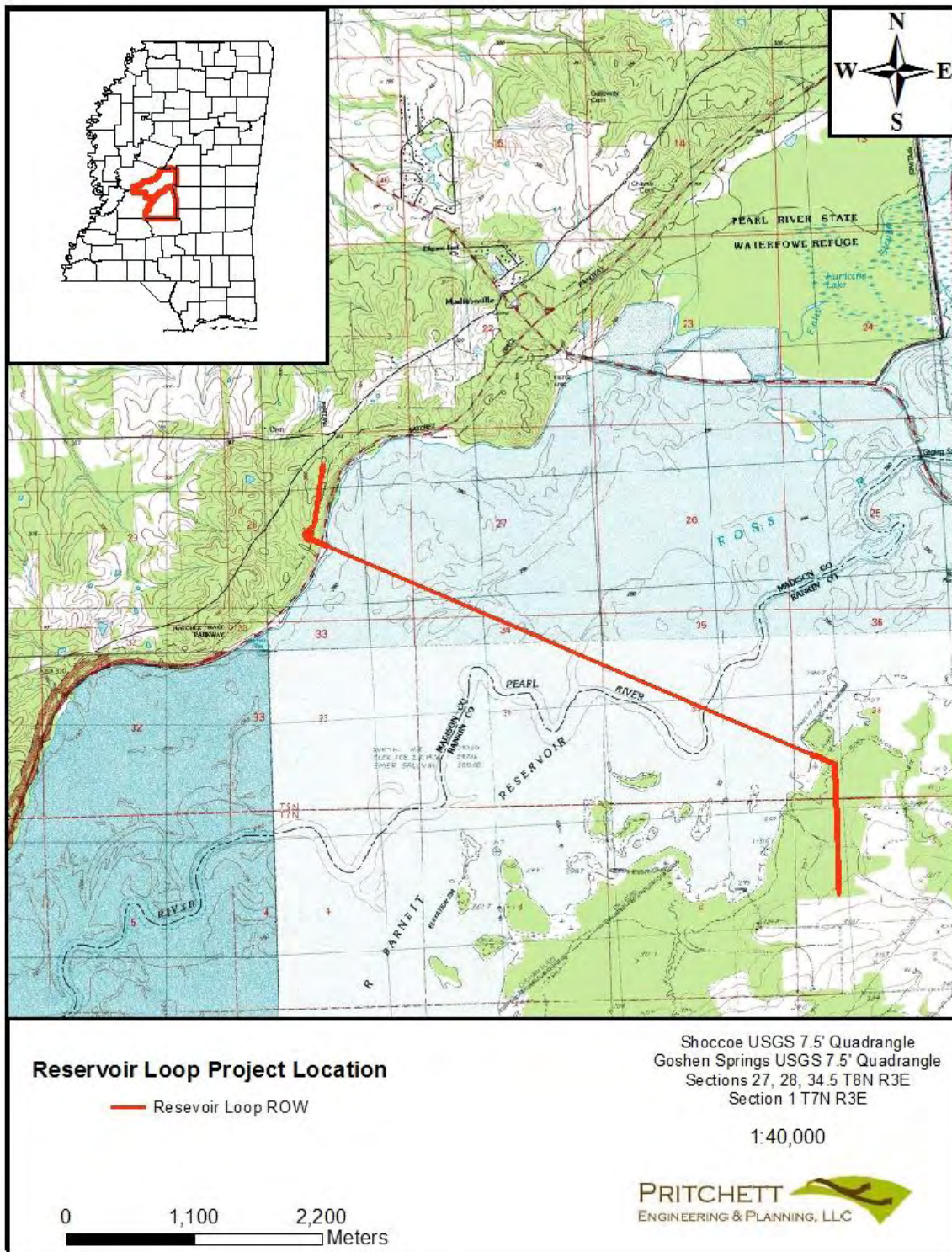


Figure 1.2. Project location Topographic Map.

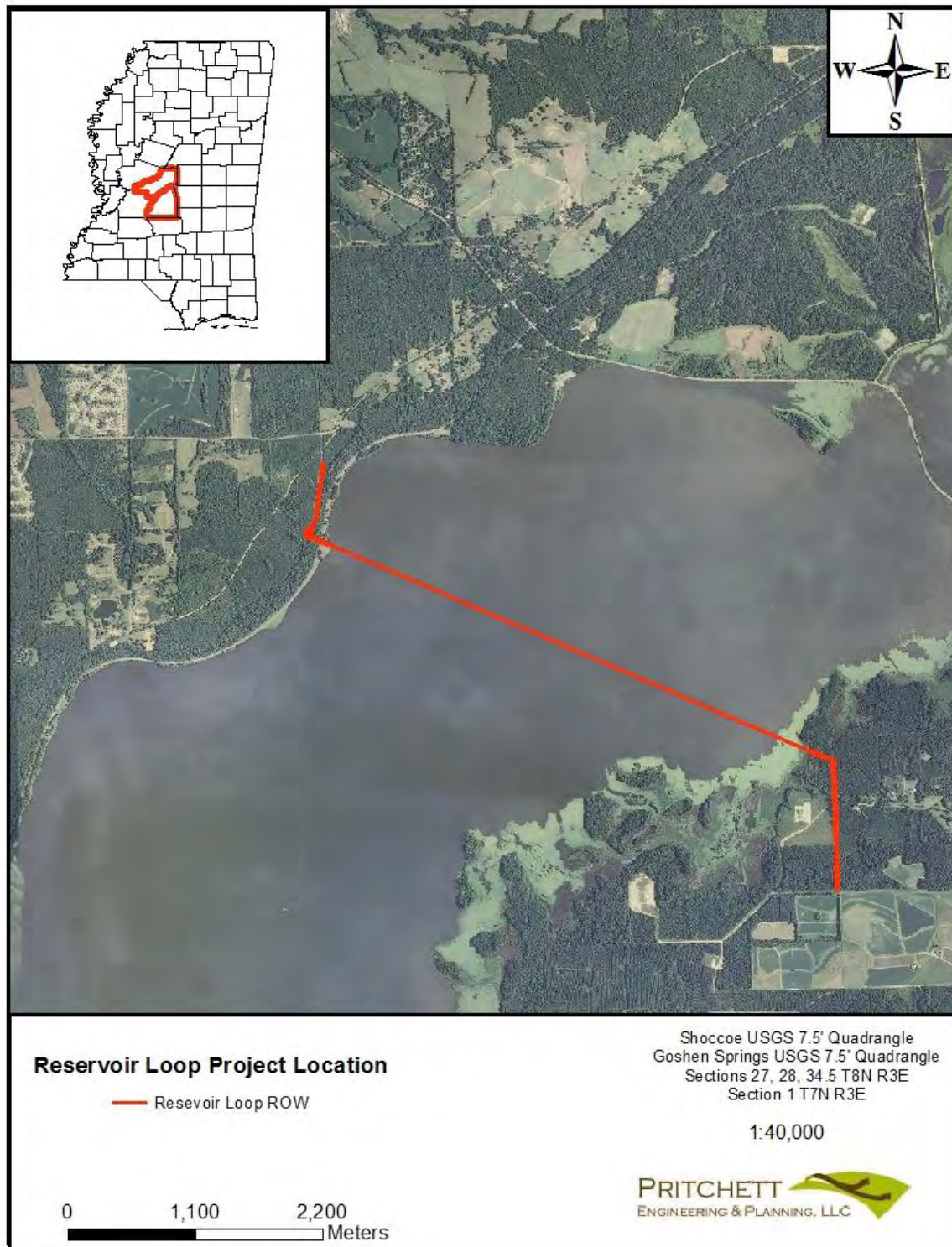


Figure 1.3. Project location Aerial Map.

Organization of the Report

The following assessment is organized into five Chapters and pertinent appendices to provide a clear account of all cultural resources present in the project area. Following the introduction, Chapter II provides a brief environmental overview of the study area in order to offer a point of reference for the reader uninstructed in Mississippi regional landscapes. Chapter III provides an archaeological background of the area as it pertains to the project area. Chapter IV provides information on previous archaeological investigations and surveys within a 1 mile (1.6 km) buffer of the project boundary. Chapter V recounts all methodologies pertaining to the current project, both in the field and in the lab, and presents the results of the field investigation. Chapter VI contains a summary of findings with recommendations followed by the appendices and references cited.

CHAPTER II

Environmental Overview

The environment of the Coastal Plain is the foundation upon which South Mississippi archaeological research is set, and in order to understand how the archaeology of this region is affected by the environment, the climatic events of the greater Southeast must be recounted.

The environment of the Southeast region of the United States was one of instability toward the end of the Pleistocene. As the Laurentide Ice Sheet began to retreat, great trends in warm temperatures marked the beginning of the Holocene culminating in a climatic warming episode known as the Hypsithermal or Altithermal (Delcourt and Delcourt 1979). Contemporary with this warming episode, a rise in sea level was seen which had many consequences for aboriginal populations during this time. As sea levels began to stabilize, river valley characteristics changed from once braided streams to deeper meandering channels. Examples, such as the Tennessee River valley, show that where once poor resource areas near braided streams existed new resource rich channels were available for prehistoric populations to exploit. Oxbow lakes begin to form during this time of climatic warming during the Mid-Holocene which created epicenters of aquatic resources such as waterfowl, fish, and turtles (Sassaman and Anderson 1996). In Laporte's work, *Ancient Environments* (1979), he makes a compelling argument that the temperature increase coupled with the change in water levels during the Hypsithermal could have potentially led to an increase in aquatic resource populations such as shellfish which led prehistoric populations to harvest this resource at higher frequencies.

Of course, water was not the only thing affected by this climatic episode. Based on research using pollen samples recovered from archaeological sites published in *Quaternary Ecology* (1991), Paul and Hazel Delcourt have evidenced a change in paleovegetation in parts of the Southeast from a mixed deciduous forest to a homogenous pine forest. As the Hypsithermal climaxed around 6000 BP, climatic variables such as lightning induced fires both propagated and maintained the pine forests of the Southeast (Delcourt and Delcourt 1979). This change was gradual and did not happen as a chronological contemporaneous phenomenon across the Southeast. As explained by Schuldenrein (1996), Florida's transition and multiple micro-environmental zones are not as simply explained based on climate. These changes had implications for the environments of Mississippi and specifically shaped the physiographic region known as the Coastal Plain, yet this gradual environmental shift allowed prehistoric populations time to adapt locally to the new changes of resource availability.

Potential foods exploited by prehistoric foragers during this period certainly included 'wild plants', and the list of edible plants available, even during the driest periods of the Hypsithermal, within the Southeast region are extensive. Green Brier roots, Prickly Pear cactus, Arrowhead roots, and Wild Potatoes are just a few of the choices available for Coastal Plain inhabitants to forage (Fedoroff 2009).

Although uncovering faunal remains becomes a difficult task in certain regions of Mississippi (Fields and Rochester 2003), the chart below illustrates much of the wildlife available as resources for prehistoric foragers. As shown in Table 2.1, the Jackson Prairie area is capable of providing an abundant source of animal resources.

Table 2.1. Selected Fauna of Mississippi.

COMMON NAME	HABITAT
Alligator snapping turtle	Wetlands/Swamp/Riverrine
American alligator	Wetlands/Swamp/Riverrine
Barred Owl	Mixed upland forests, floodplain forests
Beaver	Ponds, lakes, stream margins
Black bear	Mixed upland forests, floodplain forests
Black Vulture	Mixed upland forests, floodplain forests
Bobcat	Mixed upland forests, floodplain forests
Box turtle	Wetlands/Swamp/Riverrine
Common Crow	Mixed upland forests, floodplain forests
Cottonmouth	Wetlands/Swamp/Riverrine
Cottontail rabbit	Mixed upland forests, floodplain forests
Ducks	Wetlands/Swamp/Riverrine
Eastern panther	Mixed upland forests, floodplain forests
Eastern woodrat	Thickets, woodland borders
Gopher tortoise	Xeric patches
Gray fox	Mixed upland forests, floodplain forests
Gray squirrel	Mixed upland forests, floodplain forests
Hognose snake	Xeric patches
Map turtles	Wetlands/Swamp/Riverrine
Painted turtle	Wetlands/Swamp/Riverrine
Raccoon	Mixed upland forests, floodplain forests
Rattlesnake	Xeric patches, open woodland
Red Fox	Mixed upland forests, floodplain forests
Red wolf	Mixed upland forests, floodplain forests
River otter	Riverine
Snapping turtle	Ponds, lakes, stream margins
Soft-shell turtle	Ponds, lakes, stream margins
Southern flying squirrel	Mixed upland forests, floodplain forests
Skunk	Mixed upland forests, floodplain forests
Swamp rabbit	Wetlands/Swamp/Riverrine
White-tailed deer	Mixed upland forests, floodplain forests
Wild turkey	Mixed upland forests, floodplain forests

Physiographic and Geologic Location

The Coastal Plain region of Mississippi has been divided into multiple zones and geographic units, yet two main zones are of interest to the survey area. The eastern end of the current study falls in the Jackson Black Prairie region (Figure 2.1). This zone is defined as an area consisting of dark fertile soils, and gently rolling grassland (Cross and Wales 1974). The South Central Hills are an area of rolling, forested uplands, frequently dissected by small drainages.

The Jackson Prairie and the South Central Hills rest on Eocene deposits (Figure 2.2), a time period marked with warm temperatures and volcanic deposits. Eocene deposits consist largely of lignitic clays and marls (Mellen 1940). Snowden and Priddy (1968) assign this region to the Peoria Loess formation, with loess deposits ranging from 4-5 feet. However, Caplenor et al. point out that erosion has eradicated many of these deposits, and coverage near Jackson in Hinds County, just to the west, was only 33% (Snowden and Priddy 1968: 210-211).

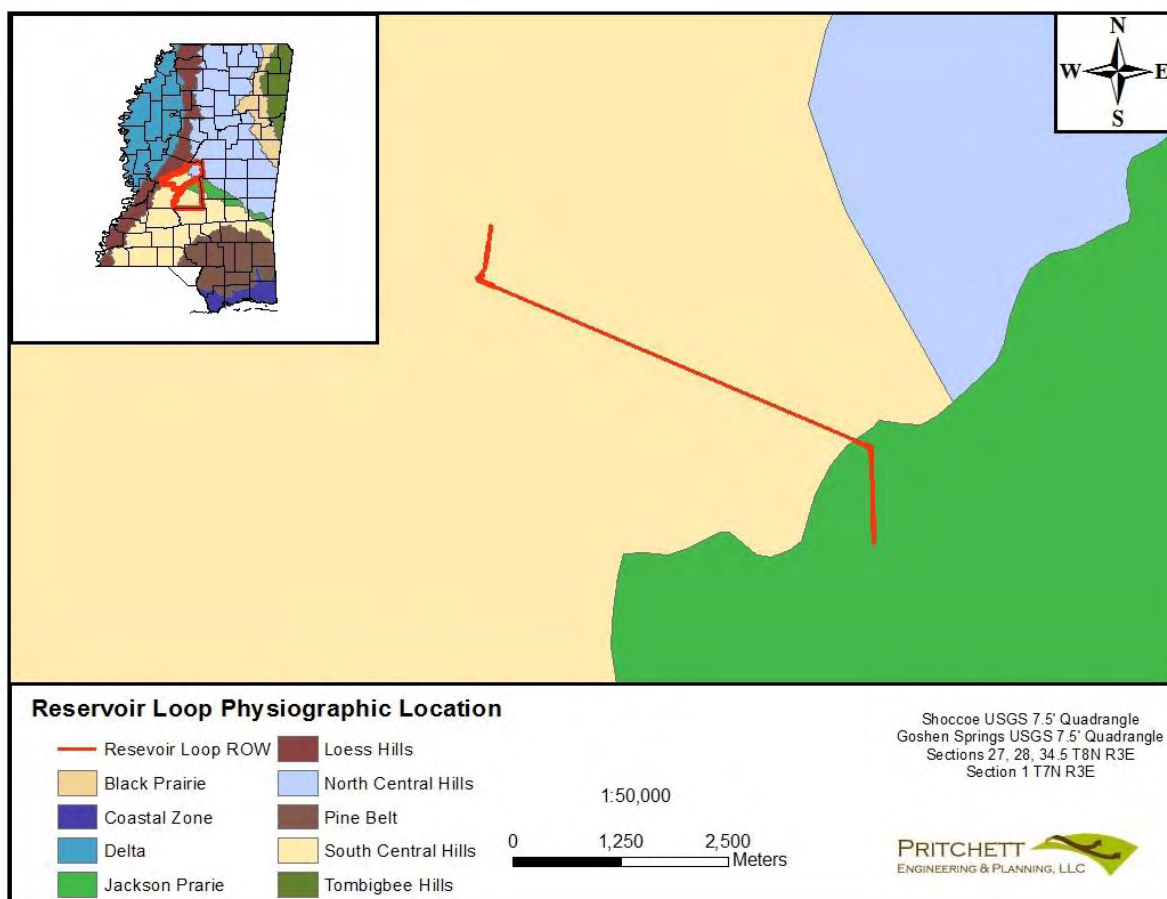


Figure 2.1. Physiographic regions of Mississippi.

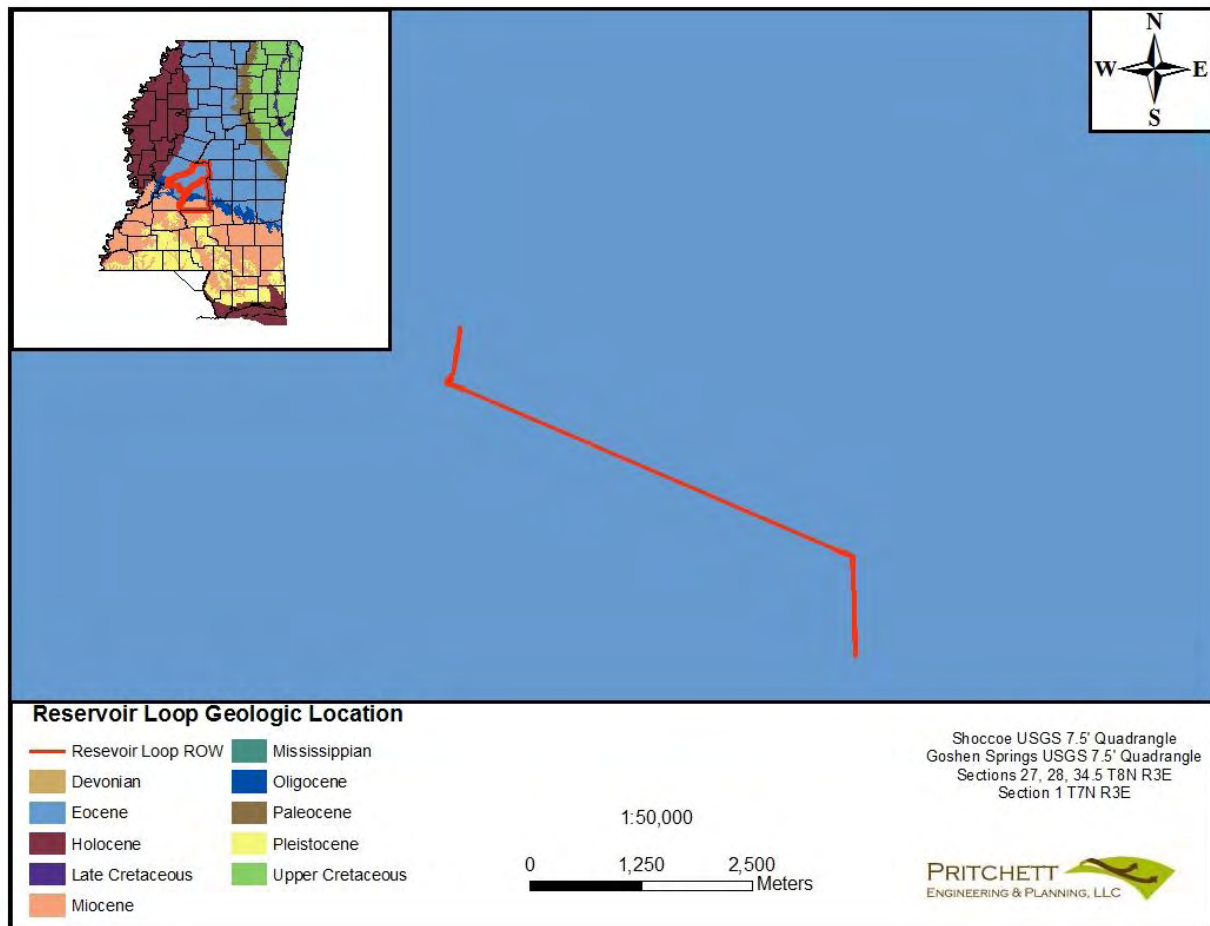


Figure 2.2. Geology of the Project area.

Soils

The project ROW covers a variety of soils, generally types of silt loams (Figure 2.3). A custom soils report was created for the project area (NRCS, 2011). Each soil type will be briefly discussed below.

Providence Silt Loam; Smithdale- Providence complex

The Providence silt loam consist of a silty loess situated on the uplands, with Smithdale deposits on the slopes. Smithdale soils are generally formed during periods of aggradation, especially seasonal flooding. Representative soils in the project area were a 10 YR 5/4 silty loam over a 7.5 YR 5/8 clay subsoil (Figure 2.4). Soils were generally shallow, most likely due to logging that had been conducted in the area.

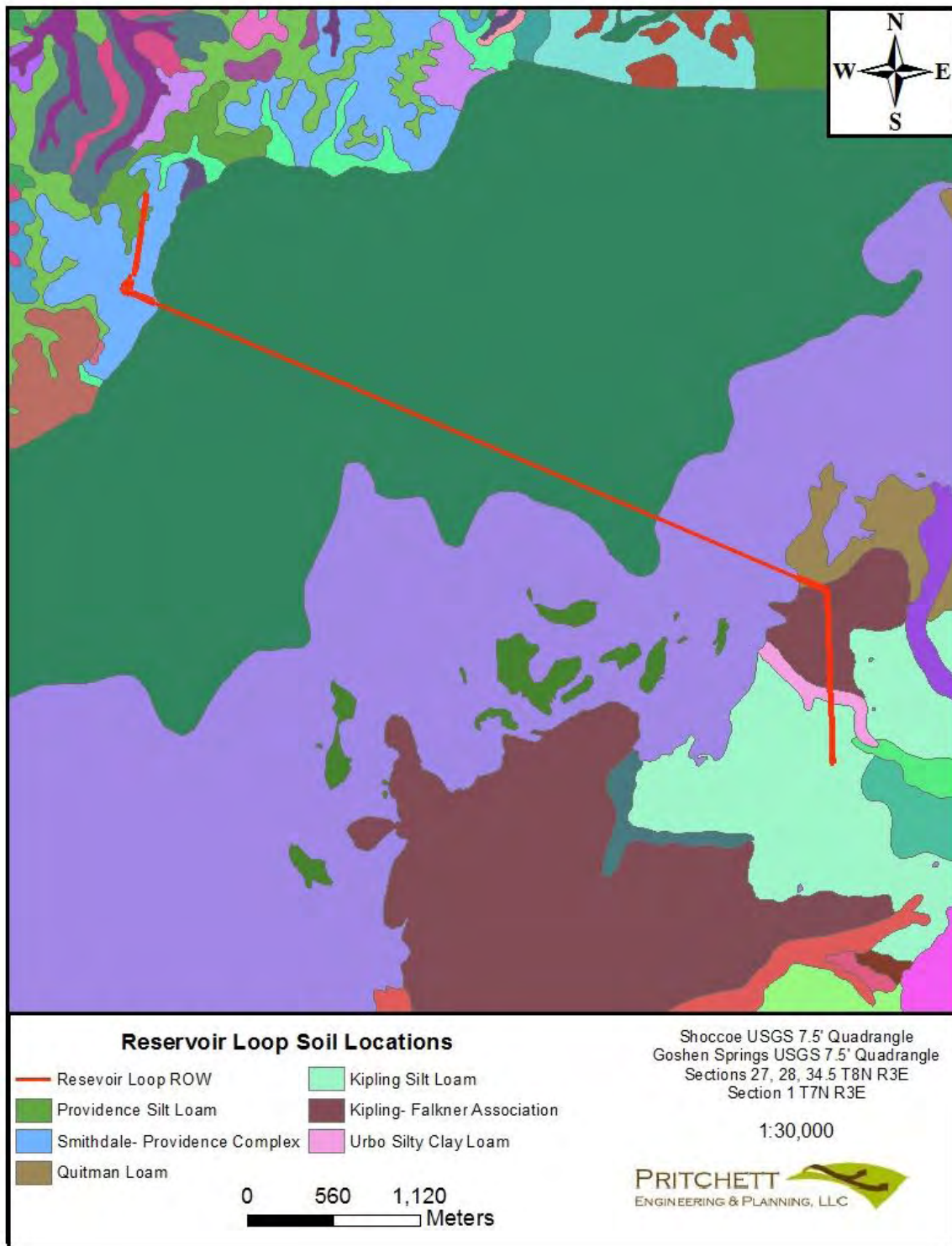


Figure 2.3. Soil Map of the project area.



Figure 2.4. Plan view of shovel test R-1.

Quitman Loam

Quitman loams are found on stram terraces. The soils are poorly drained alluvium on flat surfaces. Quitman loams were depleted in the project area; soil profiles were a 10YR 5/1 clay with iron staining from water saturation.

Kipling Silt Loam; Kipling -Falkner Association

The Kipling silt loam is situated on the uplands, while Falkner rests on the plains of coastal areas. The soils consist of silty clay alluvial deposits that are poorly drained. Soils in this portion of the project area were generally 10 YR 5/1 clay that showed iron staining from water saturation. (Figure 2.5).

Urbo Silty Clay Loam

Urbo silty clay loam is found on flood plains in the project area. These soils are poorly drained and are occasionally flooded. Soils in this portion of the ROW were a 10 YR 7/1 and 10 YR 7/8 mottled clay with iron staining from water saturation (figure 2.6).



Figure 2.5. Plan view of shovel test R-57.



Figure 2.6. Plan view of shovel test R-61.

Hydrology

The Reservoir Loop project area is between the boundaries of two drainages: Little Bear Creek-Bear Creek and the Cane Creek- Pearl River drainage, but lies firmly in the Mill Creek- Pearl River drainage (Figure 2.7). Both the Mill Creek and Cane Creek- Pearl River are small tributaries of the Pearl River. Little Bear Creek drains into the Bear creek.

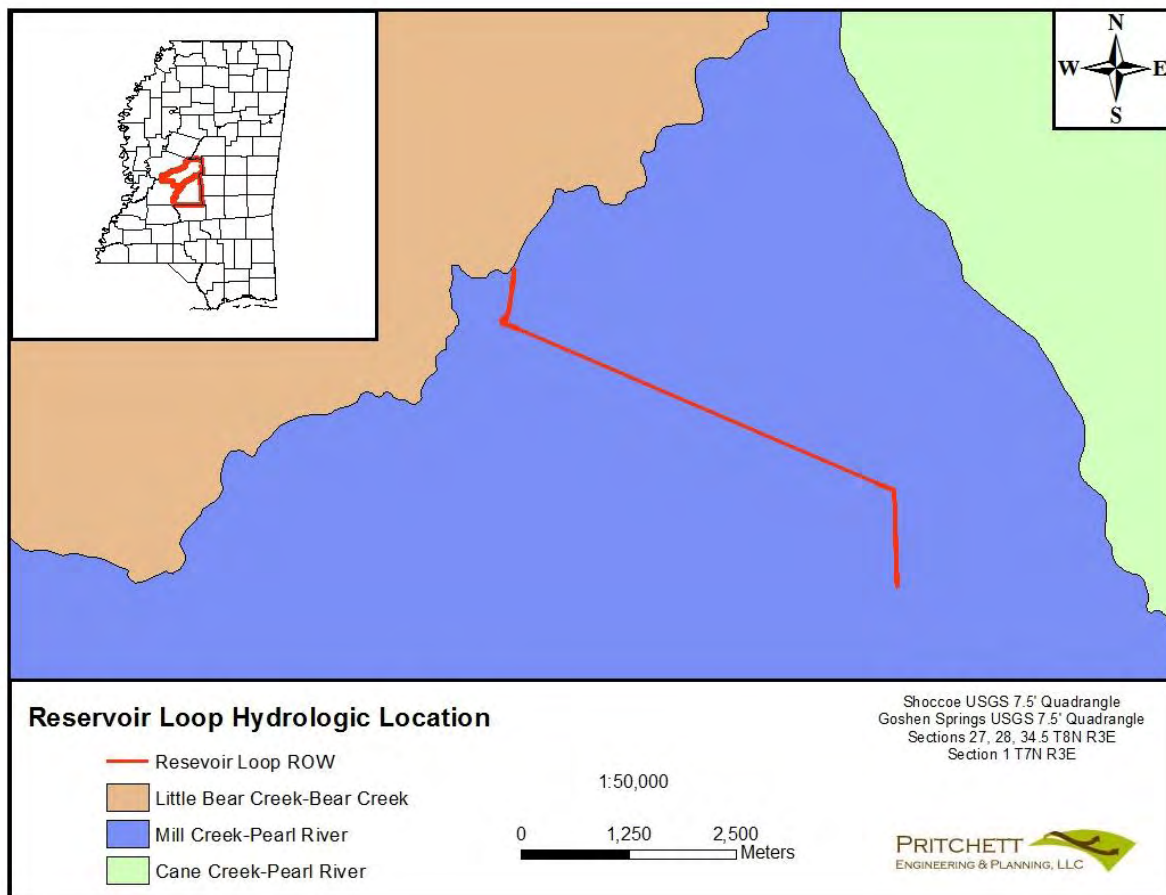


Figure 2.7. Hydrology Map of project area.

CHAPTER III

Brief Prehistory of the Area

Attempts at delineating a regional model of corporate identity, mobility, settlement patterns, and chronology for the prehistoric populations of Mississippi, has been a slow process. This is due in part to the lack of archaeological work in the area due to historical biases, yet a resurgence of Mississippi archaeology has recently flourished which challenges these obstacles (Jackson 2008). Better methodological techniques, more rigorous testing, and an increase in cultural resource management work have led to new efforts to ascertain a regional synthesis of Mississippi archaeology (Jackson et al. 2002).

Two major summaries of the archaeology of South Mississippi currently tackle a regional synthesis of areas south of the project area. *Fisherfolk, Farmers, and Frenchmen* (2000) by John Blitz and C. Baxter Mann is considered one systematic attempt at a detailed look at past archaeological work in the Coastal Meadows located south of the Pine Hills region. Building upon this foundation, Jackson et al. (2002) outlined the current state of Pine Hills archaeology north of where Blitz and Mann ended their study. Both of these summaries stress the lack of standard methods and historical investigations of these two areas, and they further challenge old notions of the lack of archaeological data in the region. These two works are the cornerstone of current archaeological investigations in both the Pine Hills and Coastal Pine Meadow regions of Mississippi, and they have spurred further work creating a regional model of interaction (Fields 2005) which is salient to the current study area of the Jackson Prairie.

One such result has been the ceramic chronology work done by Rita Fields. This attempt at a baseline synthesis of ceramic occurrence and chronology of Southeast Mississippi has been useful in creating linkages between the Pine Hills and Coastal Meadow prehistoric populations and other regions of Mississippi such as the South Central Hills.

Table 3.1. Pine Hills ceramic chronology. (After Fields et al. 2005).

YEAR	STAGE	PERIOD	CERAMIC SERIES	PHASE
1450	Mississippian		Pensacola, Moundville, Piquemine	Undefined Mississippian
1100	Woodland	Late	Miller III, Coles Creek, Weeden Island	Tallahatchie
800		Middle	Marksville, Santa Rosa/Swift Creek Miller I, Miller II	Pine Hills II
400			Marksville, Santa Rosa/Swift Creek Miller II	Pine Hills I
200			Marksville, Santa Rosa/Swift Creek Miller I	Pine Hills I
A.D. B.C.	Gulf Formational	Late	Tisheluncle, Alexander	Atchafalaya
200		Middle	Wheeler	Undefined Fiber
1200		Early		
3000	Late Archaic	Pre-ceramic		Undefined

Blitz and Mann have further refined the ceramic sequence of the eastern half of the Mississippi Gulf Coast (Table 3.2) which has implications for wares found in our project area.

Table 3.2. Blitz and Mann’s synthesis of Mississippi Coastal chronology. (Data compiled from Blitz and Mann 2000).

DATES	STAGE	PHASE	CERAMIC SERIES
<i>1200-800BC</i>	GULF FORMATIONAL	<i>CLAIBORNE</i>	WHEELER; ALEXANDER
<i>800-100BC</i>	WOODLAND	<i>APPLE STREET</i>	TCHEFUNCTE; BAYOU LA BATRE
<i>100BC-200AD</i>	WOODLAND	<i>GREENWOOD ISLAND</i>	LATE VARIETIES OF TCHEFUNCTE AND BAYOU LA BATRE; EARLY MARKSVILLE
<i>AD 200-400</i>	WOODLAND	<i>GODSEY</i>	MARKSVILLE; SANTA ROSA
<i>AD 400-700</i>	WOODLAND	<i>GRAVELINE</i>	LATE MARKSVILLE (TROYVILLE); EARLY WEEDEN ISLAND
<i>AD 700-1200</i>	WOODLAND TO EARLY MISSISSIPPIAN	<i>TATES HAMMOCK</i>	COASTAL COLES CREEK; LATE WEEDEN ISLAND (WAKULLA); MILLER
<i>AD 1200-1350</i>	MISSISSIPPIAN	<i>PINOLA</i>	LATE COASTAL COLES CREEK; EARLY PLAQUEMINE
<i>AD 1350-1550</i>	MISSISSIPPIAN	<i>SINGING RIVER</i>	MOUNDVILLE (SINGING RIVER VARIETY); PENSACOLOA
<i>AD 1550-1699</i>	PROTOHISTORIC	<i>BEAR POINT</i>	LATE PENSACOLA
<i>AD 1699-1775</i>	HISTORIC	<i>LA POINTE</i>	GULF HISTORIC FINEWARE

Lead federal agencies such as the National Forest Service and FEMA have begun taking a proactive approach to the survey of Federal properties within the Coastal Plain, and the data gained from these surveys has been instrumental in formulating the current synthesis of Mississippi archaeology (Reams 2006). Part of this most recent surge is related to post Hurricane Katrina salvage work in the area, but an upward trend in Mississippi archaeology has roots in work from the late nineties (Mann 2009 personal communication).

Paleoindian/Archaic Stage (12,500 BC – 2,500BC)

The first stage of human occupation in the current project area is the Paleoindian Stage (12,500 B.C. -8000 B.C.), and the chief characteristic of this stage is one of high mobility. Subsistence economy was based on a variety of resources, and a generalized toolkit is evidenced.

Perhaps the best documented example of Paleoindian occupation in Mississippi is found in the excavation of the Beaumont Gravel Pit Site (22PE504). This site is located to the southeast of the current project area, and it is considered a multi-component site with estimated use dates at 10,000 through 500 B.P. The Beaumont Gravel Pit is located just above the Leaf River floodplain about a mile from the Leaf River watercourse, and the investigations of the site were conducted by both MDAH staff and amateur archaeologists Cary Geiger and Ted Brown spanning a period of eight years (Giliberti 1995). The stone tool assemblage was then analyzed by a University of Southern Mississippi graduate student, Joe Giliberti, resulting in a distinctive review of Paleoindian toolkits in Mississippi.

Lacking the current data now available for archaeologists working in Mississippi, Giliberti created one of the first baseline models of Paleoindian mobility and settlement in Mississippi relying on Paleoindian data gathered from across Mississippi and throughout the greater Southeast. Through his lithic analysis of the Beaumont assemblage, Giliberti suggests that the San Patrice point style may represent a late Dalton adaptation to the unique environment of the Mississippi Southeast (Giliberti 1995).

Following the Paleoindian Stage is the Archaic (8,000 B.C. - 2,500 B.C.) which has been subdivided in South Mississippi into three periods; Early, Middle, and Late with the Late announcing the start of the Gulf Formational (Anderson and Sassaman 1996; Walthall and Jenkins 1976). The Archaic Stage is a time of environmental change throughout the Coastal Plain, and high quality tools are a hallmark of this time. Goodyear (1979) offers insight into the high quality early archaic tools found across the southeast with his “cryptocrystalline hypothesis” which suggests a highly mobile foraging population with great dependence on a high quality and heavily curated toolkit (Goodyear 1979).

Subsistence economy in the Early Archaic was heavily dependent on nut mast, but small mammals were also hunted such as squirrel, box turtle, rabbits, etc. Little evidence of fishing occurs during the Early Archaic, and large mammal remains such as deer are not recovered in Early Archaic contexts in this region of Central Mississippi. There is a possibility that all archaic populations depended greatly on plant resources, yet due to the acidic soil matrices of the Central Hills and Pine Hills regions this is not well reflected through the archaeological record (Gremillion 2004; Anderson and Sassaman 1996; Jackson 2007). Although technology during the Early Archaic seems to be similar across the Southeast, regional adaptations are seen to begin

during the Middle Archaic such as increased use of heat-treated local materials, rock slabs, and unique clay features (Fedoroff 2008, 2009). These regional adaptations are geographically specific and vary by physiographic region. Adaptations between the Coastal Plain, Piedmont, and Mountainous regions reflect localized strategies of adaptation to the changing environment of the mid-Holocene.

Middle Archaic adaptations specific to the project area include a move toward the exploitation of aquatic resources such as fish and shellfish, waterfowl. Fruits are also evidenced at this time such as hackberry, persimmon, and maypops (Fields 2003; Styles 1994). Nuts persist as a staple, yet not in the same amounts as regional variation is starting to become more pronounced (Brookes and Reams 1996). Use of seeds from wild weedy plants begins to be evidenced such as Knotweed, Marshelder, and Sunflower etc. (Styles 1996). A switch from smaller game to larger mammals such as deer is also seen in both the Southeast and Midwest regions of the United States, and technological improvements such as the spear thrower (atlatl) aided in such a shift (Styles 1994). A heavier reliance on exchange throughout Mississippi and the greater Southeast starts to be evidenced during this period which some attribute as a strategy to mitigate subsistence stress (Johnson and Brookes 1989).

Typical Paleoindian and Archaic Stage artifacts recovered from sites within the Mississippi area are: Adzes, nutting stones, *Clovis* points, *Lanceolate Dalton* points, *San Patrice* var. Leaf River points, unifacial varieties of turtle back and triangular endscrapers, *Palmer* points, *Big Sandy* points, *Bolen* points, Cache River points, Hardin points, Pine Tree points, St. Tammany points, unifacial sidescrapers, denticulates, drills, gravers, and varieties of bipolar tools (Giliberti 1995; McGahey 2000; Reams 2006).

Features of variable sizes and shapes consisting of baked clay and sandstone are also found on sites associated with archaic components (Figures 3.1 and 3.2). Some suggest that these may be cooking facilities (Fields 2003; Fedoroff 2008, 2009).



Figure 3.1. Clay Sandstone features.



Figure 3.2. Clay Sandstone features.

Gulf Formational Stage (2,500 BC – 500BC)

The marker for the next stage of prehistoric occupation in the Southeast is the introduction of ceramic technology (Jenkins and Krause 1986). The Gulf Formational period begins toward the end of the Late Archaic and continues through the Early Woodland. Much headway has been made recently in establishing a regional sequence of ceramic traditions in the Pine Hills for the Gulf Formational time frame (Fields 2005), and this sequence will help refine interpretations throughout Jackson Prairie region of Mississippi.

The beginning of the Gulf Formational Stage is contemporaneous with the appearance of fiber-tempered ceramics. For the most part, fiber tempered pottery is sparsely observed in the Mississippi South, and are usually found in association with Alexander and Tchefuncte series ceramics. Wheeler Plain *var. Noxubee* is the typical type recovered. The significant samples that have been reported have been found along the waterways of the eastern edge of the Central and Pine Hills notably the Leaf and Chickasahay Rivers (Fields 2005). The Tchefuncte series most commonly reported within the surrounding counties of Smith, Jones, Wayne, and Simpson are dominated by plainwares with the existing Smith county assemblages exhibiting a fine to medium clay paste with no evidence of a temper additive. Most of the samples examined by Fedoroff showed poor firing with eroded, crumbling, silty exteriors (Fedoroff 2010). Specific sites spanning four counties to the South of the project area have also recovered these Wheeler and Tchefuncte series ceramics are 22GE603, 22JA615, 22PE1011, 22PE1292, and 22ST646.

Another occurring pottery type associated with this time is the Bayou La Batre series. Characterized by coarse sand and grit tempering and dentate stamping, the principal pottery types are Bayou La Batre Plain, Bayou La Batre Stamped, Bayou La Batre Scallop Impressed, and Bayou La Batre Cord Wrapped Dowel Impressed (Fuller 1998:8). The Bayou La Batre variant is closely related to the Tchefuncte variant of the Lower Mississippi Valley, especially in terms of vessel shapes and stamped decorations. Although Bayou La Batre ceramics are centered to the Mobile Bay area (Table 3.3), they are often found overlapping with Tchefuncte series on the Central Hills, Mississippi Gulf Coast, and Pine Hills region.

Pottery does not hold a monopoly over the Gulf Formational artifacts recovered in the project area. Flint Creek-Pontchartrain, McIntire, Gary, Mud Creek, Duval, Epps, and Motley points are all commonly occurring projectile types associated with the Gulf Formational Stage of Mississippi (Figure 3.3).

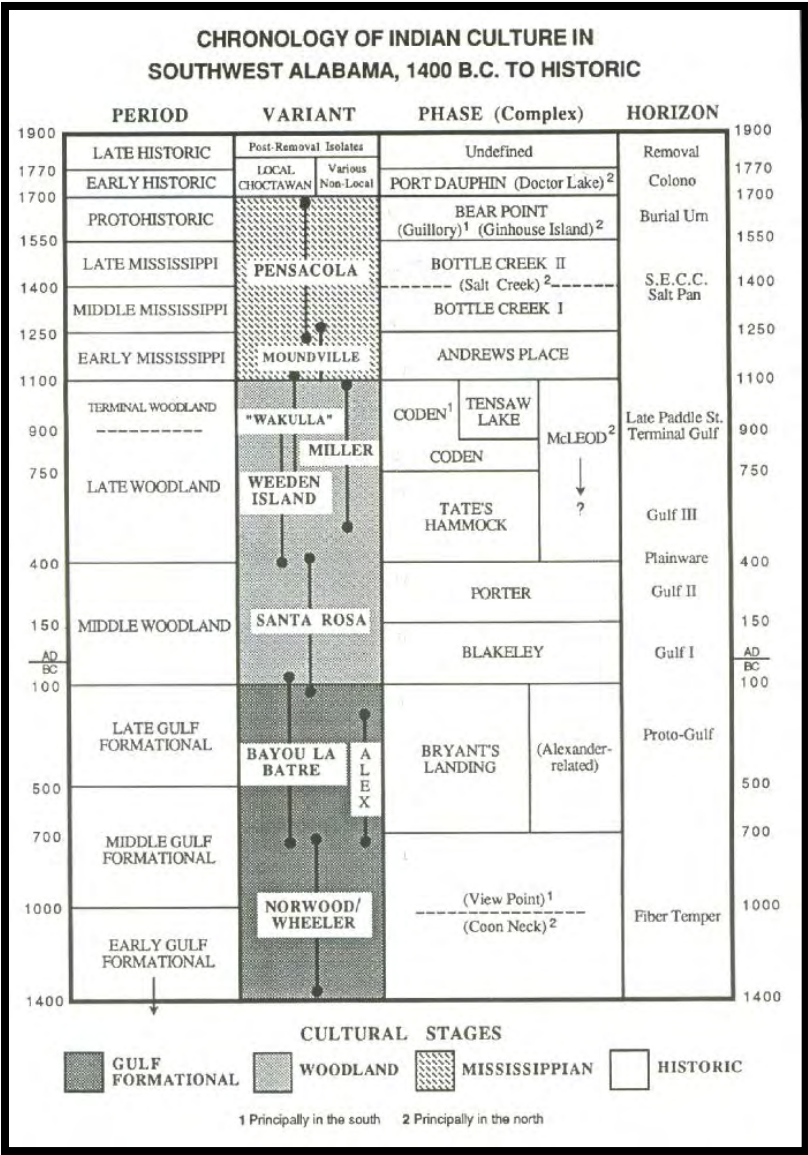


Figure 3.3. A) Mud Creek biface B) Flint Creek-Pontchartrain biface.

Woodland Stage (500 BC – AD 1000)

The Woodland Stage in Mississippi can in some ways be seen as an extension of the Gulf Formational, yet with the intensification of pottery and new technological developments such as the bow and arrow. Subsistence patterns appear to be similar to those of the prior stage with the exception of a continued intensification of wild plants (Fields 2003).

Table 3.3. Chronology of Indian Culture in Southwest Alabama. (After Gardner 2005).



The majority of sites identified throughout Southeast Mississippi contain Woodland components which could indicate shifting demographics (Jackson et al. 2002; Jackson 2007; Blitz and Mann 2000). Major influences attributed to the ceramic types of the project area during this time fall within the Marksville grog tempered series, yet at least one variation on this type has been identified as Mossy Ridge *var. Mossy Ridge* in the Pine Hills to the south (Fields 2008). This type is classified primarily by its exterior decoration with both zone incised and stamping (Figure 3.4), and at least one coastal county site, 22HR662, has identified this variety. This begs the question of its occurrence in the Jackson Prairie.

Figure 3.4.

Mossy Ridge *var. Mossy Ridge*. (Adapted from Fields et al. 2005)



Several key Woodland ceramic series other than typical Marksville grog tempered ceramics commonly found within the project area as sand-tempered Porter Phase, sand-tempered Santa-Rosa Swift Creek series, and bone-tempered Turkey-Paw Cord Marked and grog tempered Mulberry Creek Cord Marked of the Miller Phase. Various plain grog tempered wares have been classed as Baytown varieties, and these ceramics account for a large portion of identified Late Woodland components. Unfortunately Turkey Paw Cord Marked and Plain are often misidentified as either Baytown Plain or Mulberry Creek Cord Marked *var. Tallahala* (Fields 2005). These types have been recovered throughout the region, and also build upon the uniqueness of Mississippi populations.

Lithic assemblages of this period include Baker's Creek, Gary *var. Maybon*, Edwards Stemmed, and Tombigbee Stemmed projectiles, and the heat treatment of local materials is also a hallmark of local tool manufacture. The projectile points of this period are generally smaller than the Gulf Formational time, and they lack the fine serrated edges often found on previous bifaces (McGahey 2000).

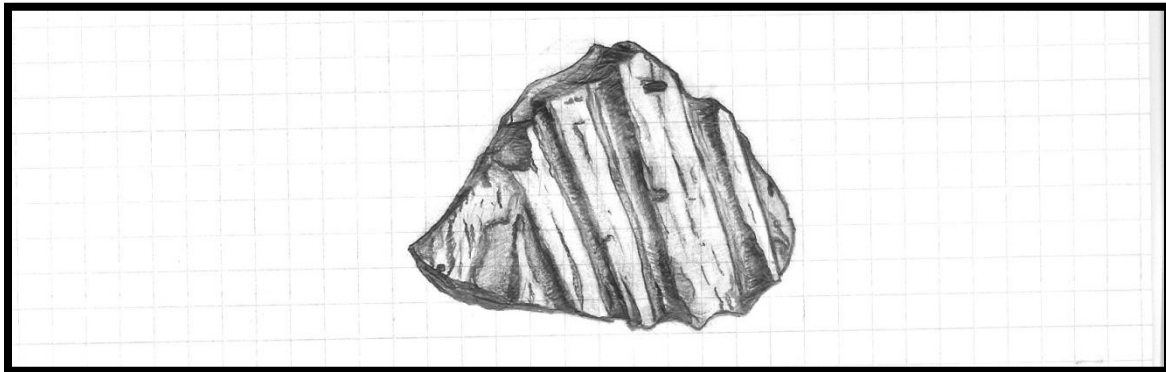


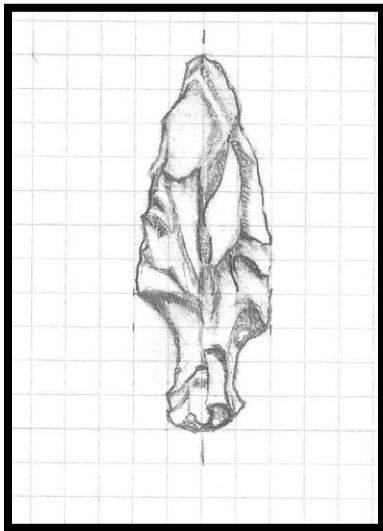
Figure 3.5. Artist sketch of Mulberry Creek Cordmarked.

Mississippi Stage (A.D. 1000 – 1700)

Very few Mississippian sites have been identified within the project area. This is a trend that is ubiquitous throughout Southeastern Mississippi, and much speculation has been offered as to the causality. Population increases, subsistence stress, and lack of suitable land for agriculture are all posited as reasonable causes for such a trend, yet alternative strategies have been offered for South Mississippi economy such as small agricultural plots, trade, marine resources, and a symbiotic relationship between the uplands of the Pine Hills and the lowlands of the Coastal Meadows through a seasonal round of mobility (Blitz and Mann 2000; Jackson et al. 2002; Keith 1998).

Shell tempered pottery is the trademark of Mississippian ceramics found within the project area, and a more complete ceramic model of Mississippian period interaction for the Pine Hills and Coastal Meadows is lacking. It is not uncommon for the Pine Hills and the MS Gulf Coast region to get subsumed with Plaquemine, Summerville, or Pensacola ceramic sequences (Gardner 2005; Jackson et al. 2002).

Lithic assemblages during this period are represented in the project area to include Collins (Figure 3.6), Madison, Scallorn, Nodena, and Bayougoula Fishtailed projectiles, but persistence in “older” types is also seen.



In summary, the current project falls within the Jackson and Black Prairie regions, but the archaeology of the area is a hybrid of material culture from the Lower Mississippi Valley, Mississippi Coast, Louisiana Coast, Alabama Coast, and Florida peninsula. Table 3.1 highlights the variable cultures and phases often associated with this hybridity.

Figure 3.6. Collins point (artist rendition in double scale).

Table 3.4. Summary of cultural traditions found in South Mississippi (After Jackson 1995).

Year	Stage	Period	Culture/Tradition		
1700	Protohistoric		Mississippi Valley/ Mississippi Gulf Coast	N.E. Mississippi/W. Central Alabama	Southwest Alabama
1500		Natchezan	Choctaw	Bear Point Phase	
1200	Mississippi		Mississippi/Paquemine	Moundville Summerville	Panacola Phase
	Woodland	Late	Coles Creek	Miller III	Weeden Island
		Middle	Baytown		
Issaquena			Miller II	Porter/Santa Rosa	
A.D. B.C.	Gulf Formational		Marksville	Miller I	
		Late	Tchefuncte	Alexander	Bayou La Batre
		Middle	Poverty Point	Wheeler	Unnamed Fiber Temper
	800		Early		
1400					
2000	Archaic	Late			
Middle					
Early					
6000					
8000	Paleoindian	Late			
11,500		Middle			
		Early			

Brief Historical Overview

The current study encompasses Madison and Rankin County, Mississippi which are known for their rich historical landscapes. Although a complete county history is not presented here, particular attention is given to local communities and events within or near the project area boundaries.

This Chapter is organized by county, and a good faith effort was made to identify people, places, and things salient to the current study. These historical aspects are briefly addressed in order to provide context for the cultural resources identified as part of the project.

Rankin County

Rankin County was established in 1828 from land originally in Hinds County east of the Pearl River and comprises 795 square miles. The land was originally a portion of the Choctaw Territory, which was ceded to the United States in 1820 (Goodspeed, 1891; Figure 3.7). Most of the early settlers in the area were English and German; this heritage can be seen in such local names as Wirtz and Cooper. Flowood is the nearest incorporated community in relation to the project area and can best be characterized as a suburban community with a strong corporate presence. The town of Flowood was incorporated in 1953, and despite years of flooding has become prosperous. Today, the town of Flowood is a vital commercial center in the state.

In respect to the project area, mention should be made of the close proximity of the Pearl River and the 33,000 acre Barnett Reservoir. The Reservoir was constructed between 1963- 1965 as a permanent water supply for the city of Jackson, MS. Although the Reservoir falls outside the project boundaries, it should be noted for its impact on the archaeology of the area as the natural topography of this floodplain has been altered due to its creation.

Madison County

Madison County was established in 1834 from land originally in Hinds and Yazoo counties. The original county seat was Beattie's Bluff, on the banks of the Big Black River. However, in 1836, plans were made to relocate the county seat to an area that was both safer and closer to the center of the county. The town of Canton was built on approximately 100 acres of land bought from Killis Walton for that purpose (McCool 1934). The town of Canton is most famous for its Greek Revival courthouse, begun in 1855. The brick used was that from the original courthouse built in 1840, which had begun to deteriorate. Today, the town of Canton is a vital commercial center in the state.

An important cultural resource near the current ROW is the Natchez Trace Parkway (Figure 3.8). The Parkway was designed to commemorate the original roadway that ran from Natchez,

Mississippi, to Nashville, Tennessee during the early 1800's (Davis 1995). Began in 1806, the trail was integral in the trade developments between the interior and the coastal port of New Orleans. Farmers would float livestock down the river to be sold in New Orleans and Natchez, and would often take the Natchez Trace back to Tennessee and Kentucky, where they originated. In the 1930's the Natchez Trace Parkway was constructed and became fully operational in 1938 (Davis 1995). Several historic landmarks and archaeological sites are located on this parkway, which are administered by the National Park Service.

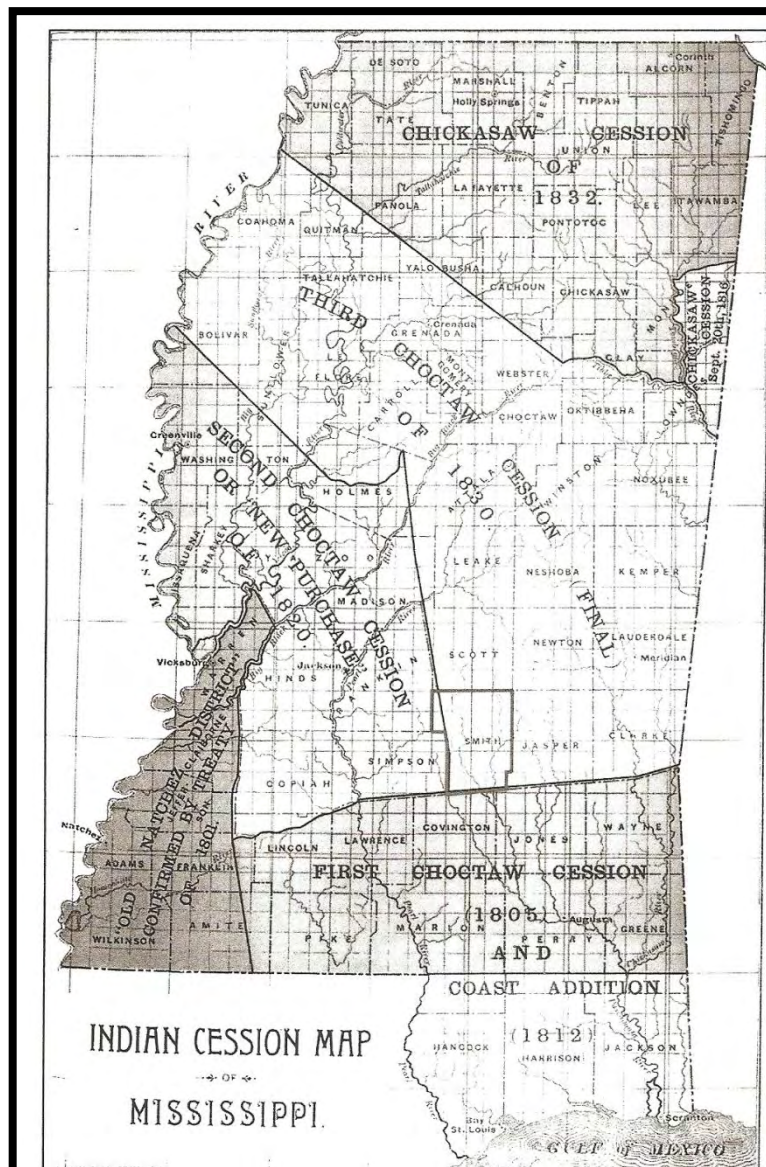


Figure 3.7. Map Indian Cessions of Mississippi During 1800s.

(Adapted from Goodspeed 1891)

CHAPTER IV

Previous Investigations of the Survey Area

To streamline the research design and ascertain potential archaeological resources, Pritchett Engineering and Planning archaeologists conducted a search of the Archaeological site files at the Mississippi Department of Archives and History (MDAH) in September 2011. A one- mile (1.6 km) buffer zone was investigated for previous cultural resource surveys and previously recorded archaeological sites. Additionally, the buffer zone was examined for the presence of historic resources recorded by the Historic Resource Inventory and the National Register of Historic Places. No historic resources were located within this buffer.

Previous Archaeological Investigations

Six cultural resource surveys have been conducted within a one-mile buffer of the current APE (Figure 4.1, Table 4.1). All of the surveys investigated either cell towers (Ryba 2006) or well pads and CO2 lines associated with existing pipelines. None of the surveys recorded any sites within the one mile buffer of the project area.

Table 4.1. Previous Surveys within 1 mile (1.6 km) buffer.

Author/ Year	Report Number	Sites Recorded	Eligibility
Fedoroff 2011	MDAH Report 11-0129	None	None with in APE
Ryba 2006	MDAH Report 06-211	None	None
Lauro 2004	MDAH Report 04-353	None	NA
Lauro 2006	MDAH Report 06-103	NA	NA
Watkins 2006	MDAH Report 06-081	None	None
Watkins 2005	MDAH Report 05-370	None	None

Previously Recorded Archaeological Sites

A total of three archaeological sites have been recorded within a one mile buffer of the current APE (Table 4.2). One of these resources 22RA559 is currently submerged under the Ross Barnett Reservoir. The other two are on the west side of the reservoir to the north east of the project area. 22MD508 (Rock Mound) is a potentially eligible mound site just west of the Natchez Trace (Figure 4.1, 4.2). No information was recorded on the materials recovered, or who recorded the site, in the MDAH site files.

Table 4.2. Previous Recorded Sites within 1 mile (1.6 km) buffer.

Site Number	Survey	Components	Eligibility
22RA559	NA	Early Archaic	Unknown
22MD508	Natchez Trace Survey	Mound	Potentially Eligible
22MD640	NA	Historic Indian	Ineligible

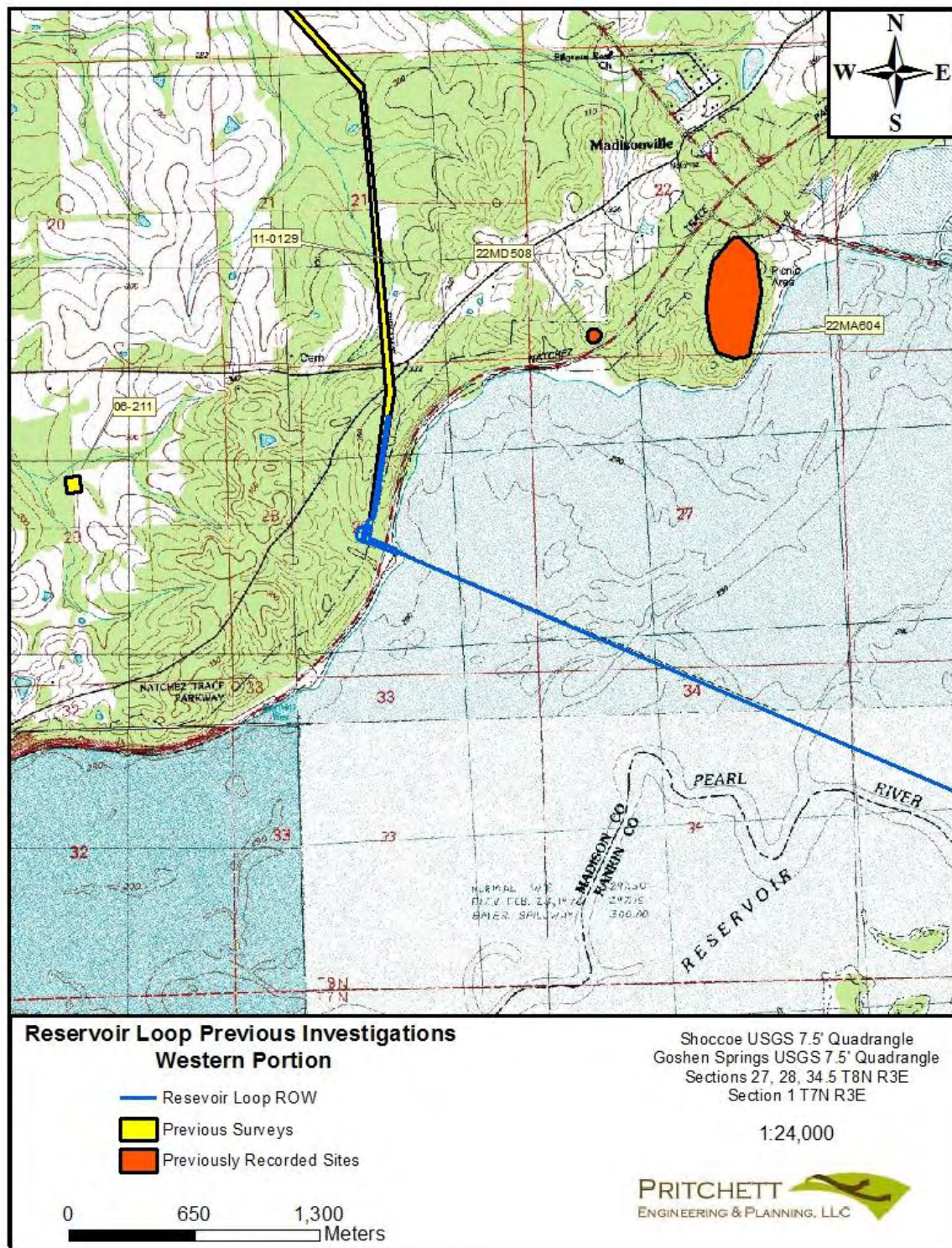


Figure 4.1. Previous Cultural Resource Sites and Surveys within one mile of Project APE on the West side of Reservoir

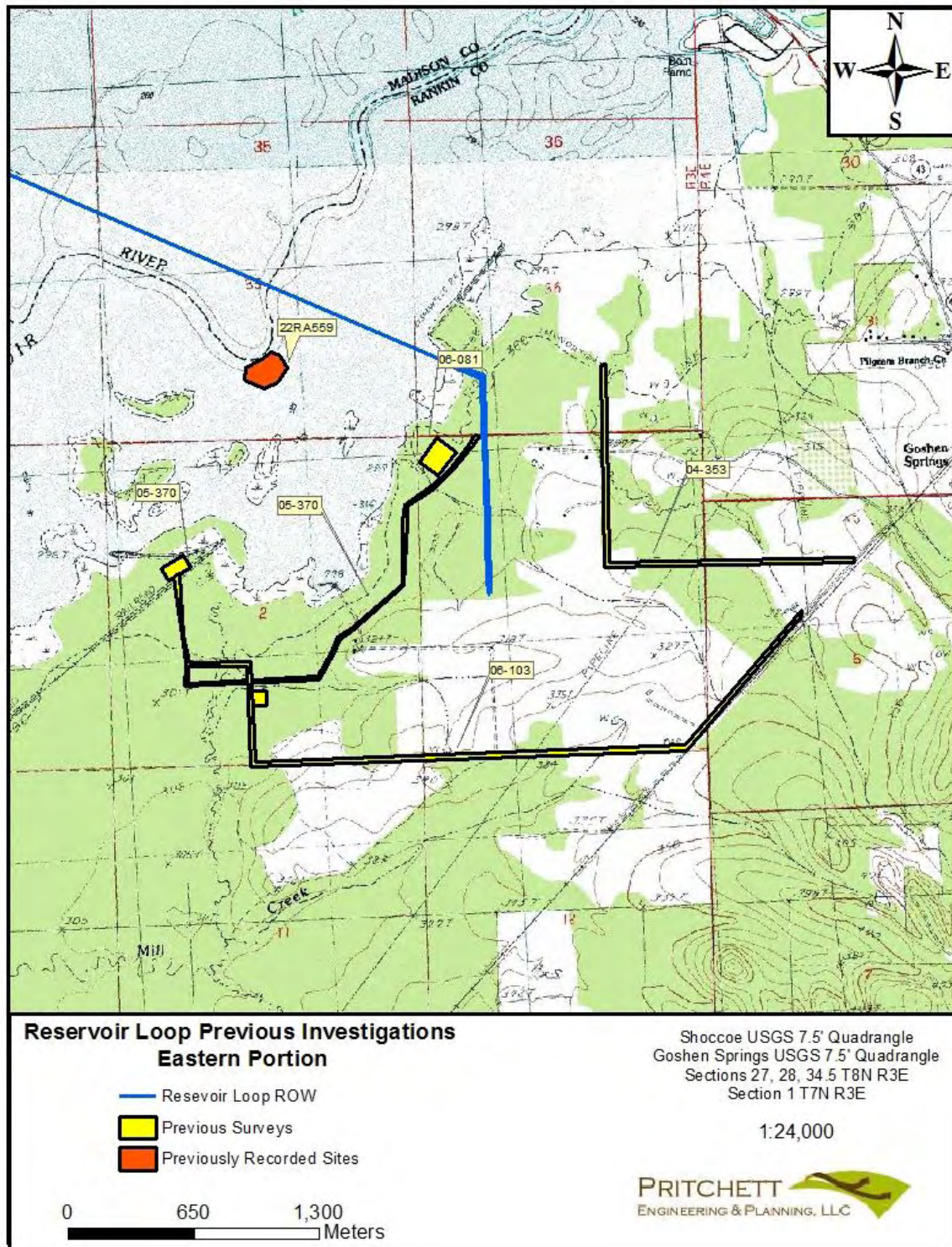


Figure 4.2. Previous Cultural Resource Sites and Surveys within one mile of Project APE on the East side of Reservoir

CHAPTER V

Field Investigations

Conduct of the Survey

A Phase I cultural resource survey on the terrestrial 1.4 miles 2244 meters (670 feet) of proposed right of way (ROW) for a CO₂ gas pipeline in Madison and Rankin County, Mississippi (Figure 5.1, 5.2). A single transect line was shot down the centerline of the proposed 50ft right of way for the pipeline construction. Shovel tests were placed along this transect line at 30 meter increments and dug to at least 30 cm below ground surface or sterile subsoil. Shovel tests were excavated in 30cm X 30cm test pits and screened through ¼ inch hardware mesh. In the event that artifacts were identified, they were to be bagged and tagged according to provenience and recorded in the project field catalogue.

A total of 92 shovel test locations were investigated, 91 of which were subjected to shovel testing (Table 5.1). The remaining locations were either probed with a soil tube sampler or not dug, depending on the severity of water coverage, degree of soil saturation, or disturbance.

Results

Fieldwork was conducted by author and four PEP archaeologists. No sites were identified as a result of this study. Shovel tests were excavated to subsoil (Figure 5.3, 5.4); all excavated shovel tests terminated at 30cmbs. All excavated soils were screened through 6.4mm (.25 in) hardware cloth. Soils were a 10YR 8/1 sandy clay with some iron inclusions, indicating poorly drained soils. Several locations exhibited indications of periodic inundation (Figure 5.5). Two shovel tests contained isolated flake debitage that were delineated in 10 meter intervals in the cardinal directions. No other cultural material was located in the shovel tests, and the flakes were determined to be isolated finds.

Name: IF001

Site Description: Isolated Prehistoric (STP Find)

Component: Unknown Aboriginal

UTM: 16S 0228663/ 3601272

NRHP Recommendations: no site located

IF001 was located in judgmental shovel test JT-01, which was excavated to investigate a small finger ridge at the edge of the project ROW. A single flake was located approximately 15 cm (5.9 in) below surface. A total of eight delineation shovel tests were excavated in an attempt to ascertain site boundaries, but all shovel tests were negative for cultural materials.

Name: IF002

Site Description: Isolated Prehistoric (STP Find)

Component: Unknown1086 Aboriginal

UTM: 16S 0218620 / 3602

NRHP Recommendations: no site located

IF002 was located in STP R-14 approximately 18 cm (7.08 in) below surface, and consisted of a small gravel chert flake. Eight delineation shovel tests were excavated to ascertain site boundaries, but no other cultural materials were recovered.

Table 5.1. Actions at each Shovel Test.

IDENT	LAT	LONG	Dug Y/N	COMMENT
R-1	32.51515	-89.99453	Y	
R-2	32.51476	-89.99463	Y	Disturbed/ Push Off Area
R-3	32.51448	-89.99463	Y	
R-4	32.51415	-89.99473	Y	Clay at Surface
R-5	32.51393	-89.99472	Y	
R-6	32.51364	-89.99479	Y	
R-7	32.51331	-89.99484	Y	Pine Plantation
R-8	32.51307	-89.99490	Y	
R-9	32.51282	-89.99495	Y	On Slope
R-10	32.51252	-89.99501	Y	
R-11	32.51228	-89.99503	Y	
R-12	32.51199	-89.99513	Y	Beside Push pile
R-13	32.51173	-89.99513	Y	10m West of Berm
R-14	32.51146	-89.99518	Y	Positive/ Flake
R-14+10E	32.51145	-89.99506	Y	Negative
R-14+10N	32.51154	-89.99517	Y	Negative
R-14+10S	32.51138	-89.99518	Y	Negative
R-14+10W	32.51146	-89.99527	Y	Negative
R-14+20E	32.51145	-89.99496	Y	Negative
R-14+20N	32.51164	-89.99517	Y	Negative
R-14+20S	32.51128	-89.99518	Y	Negative
R-14+20W	32.51146	-89.99538	Y	Negative
R-15	32.51113	-89.99529	Y	
R-16	32.51083	-89.99535	Y	
R-17	32.51049	-89.99543	Y	
R-18	32.51011	-89.99552	Y	
R-19	32.50983	-89.99564	Y	
R-20	32.50953	-89.99578	Y	

IDENT	LAT	LONG	Dug Y/N	COMMENT
R-21	32.50928	-89.99587	Y	Modeled Clay 0-50cm
R-22	32.50897	-89.99597	Y	Disturbed
R-23	32.50870	-89.99602	Y	
R-24	32.50905	-89.99630	Y	
R-25	32.50870	-89.99642	Y	
R-26	32.50854	-89.99576	Y	
R-27	32.50842	-89.99545	Y	Disturbed
R-28	32.50832	-89.99518	Y	
R-29	32.50823	-89.99489	N	No Dig- Paved Road
R-30	32.50811	-89.99458	Y	Edge of Reservoir
R-31	32.49088	-89.95055	Y	
R-32	32.49077	-89.95024	Y	Hydric Clay
R-33	32.49065	-89.94996	Y	Cypress Knees to South
R-34	32.49052	-89.94970	Y	Hydric Clay
R-35	32.49041	-89.94939	Y	Hydric Clay
R-36	32.49028	-89.94911	Y	
R-37	32.49018	-89.94883	Y	
R-38	32.49006	-89.94858	Y	
R-39	32.48978	-89.94857	Y	
R-40	32.48951	-89.94855	Y	
R-41	32.48927	-89.94857	Y	
R-42	32.48902	-89.94857	Y	
R-43	32.48878	-89.94857	Y	
R-44	32.48820	-89.94857	Y	
R-45	32.48849	-89.94857	Y	Wetland Flags to West of STP
R-46	32.48792	-89.94855	Y	
R-47	32.48758	-89.94856	Y	Wetland Flags to West of STP
R-48	32.48716	-89.94852	Y	No Dig- Gravel Road
R-49	32.48679	-89.94852	Y	
R-50	32.48652	-89.94851	Y	Clay Wet at 5cm
R-51	32.48622	-89.94852	Y	
R-52	32.48592	-89.94852	Y	Hydric Clay
R-53	32.48563	-89.94850	Y	Large Drainage Area to West of STP
R-54	32.48533	-89.94852	Y	
R-55	32.48504	-89.94852	Y	
R-56	32.48468	-89.94851	Y	Hydric Clay / Clay is Wet / Wetland Grass
R-57	32.48440	-89.94852	Y	
R-59	32.48413	-89.94852	Y	Clay is Wet

IDENT	LAT	LONG	Dug Y/N	COMMENT
R-60	32.48381	-89.94851	Y	
R-61	32.48354	-89.94854	Y	Hydric Clay
R-62	32.48320	-89.94851	Y	
R-63	32.48288	-89.94853	Y	Older Planted Pine Area
R-64	32.48259	-89.94853	Y	
R-65	32.48229	-89.94853	Y	Hydric Clay
R-66	32.48194	-89.94853	Y	
R-67	32.48159	-89.94852	Y	Hydric Clay
R-68	32.48123	-89.94848	Y	Hydric Clay
R-69	32.48081	-89.94849	Y	
R-70	32.48051	-89.94849	Y	
R-71	32.48012	-89.94857	Y	
JT-1	32.51316	-89.99480	Y	1 Flake at 15cmbs
JT01+10E	32.51316	-89.99470	Y	Negative
JT-1+20E	32.51316	-89.99459	Y	Negative
JT01+10S	32.51307	-89.99480	Y	Negative
JT-01+20S	32.51298	-89.99480	Y	Negative
JT-1+10W	32.51316	-89.99490	Y	Negative
JT-01+20W	32.51317	-89.99501	Y	Negative
JT01+10N	32.51325	-89.99480	Y	Negative
JT-01+20N	32.51334	-89.99479	Y	Negative
JT-02	32.50845	-89.99564	Y	Clay Mottled and Thick

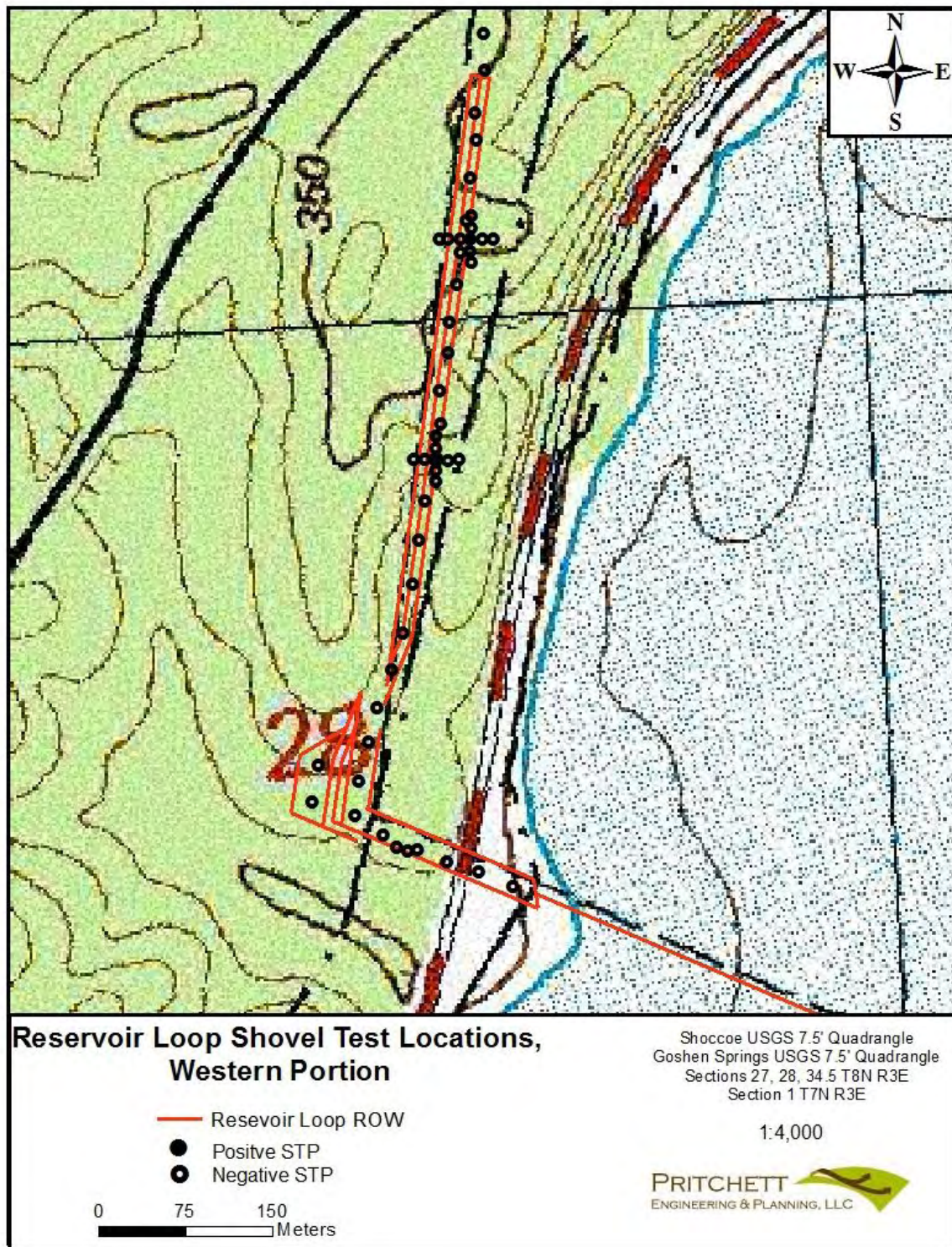


Figure 5.1. Topographic map of STP location on West side of Project Area.

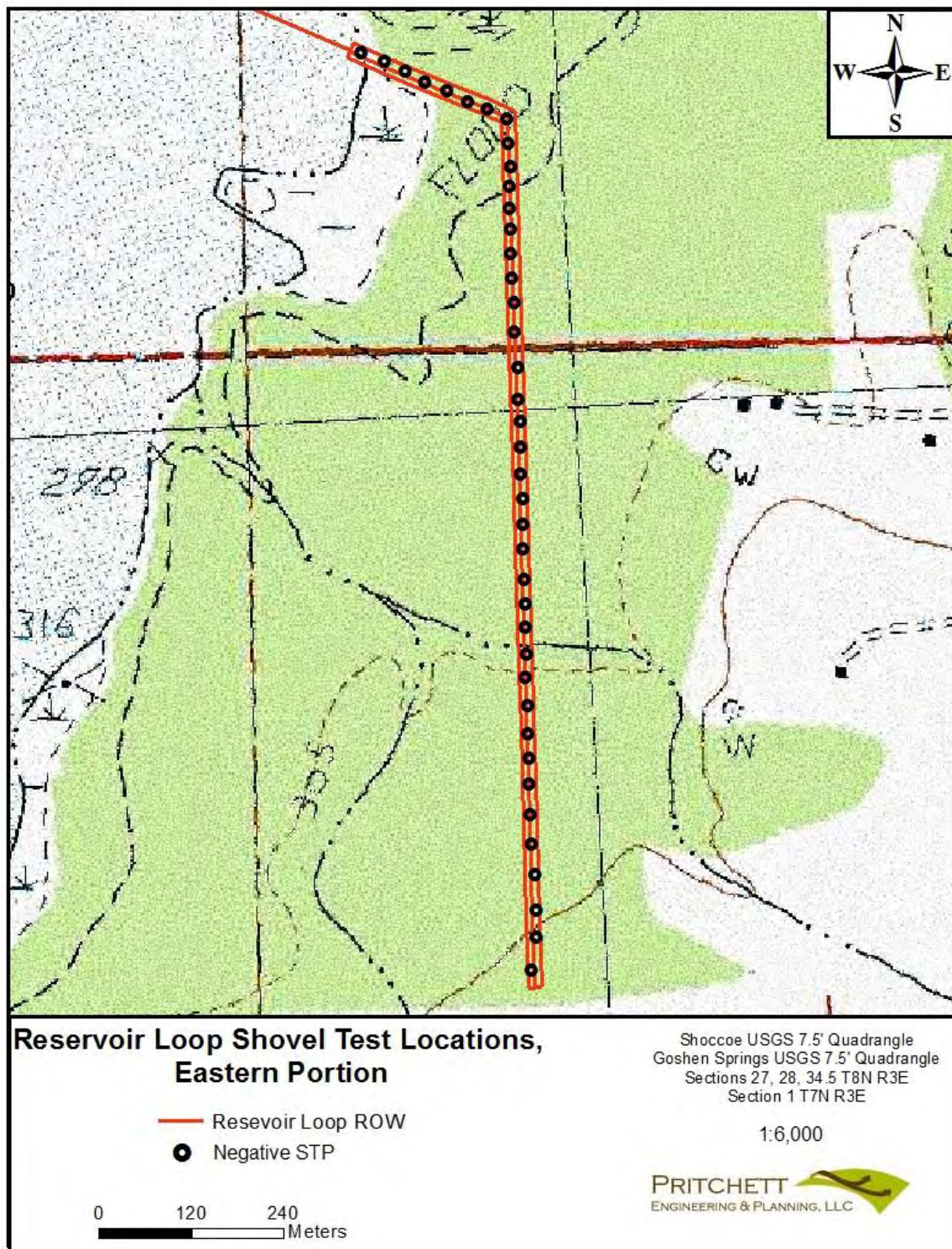


Figure 5.2. Topographic map of STP location on Eastern side of Project Area



Figure 5.3. Plan view of shovel test R-24.



Figure 5.4. Plan view of ground at shovel test R-38.



Figure 5.5. Plan view of shovel test R-55.

CHAPTER VI

Summary and Recommendations

In September 2011, Messinger & Associates, Inc contracted with Pritchett Engineering and Planning, LLC (PEP) to conduct a Phase I cultural resource survey on 4.2 miles 6776 meters (22231 feet) of proposed right of way (ROW) for a CO2 pipeline in Madison and Rankin Counties, Mississippi. The Project area is located off Natchez Trace Parkway in Section 27, 28, 34.5, Township 8 North, Range 3 East, Section 1 Township 7 North Range 3 East of the Shoccoe and Goshen Springs USGS Topographic Quadrangles (Figure 1.2). This report of investigations covers the terrestrial portion of the project ROW; a separate investigation and report will address the portions of this ROW that cross the Ross Barnett Reservoir.

Background research on the project area conducted on September 20, 2011 revealed that three sites were within a one- mile buffer zone, 22RA559 is under water due to the Ross Barnett Reservoir. 22Md508, 22MD640 are on the west side of the Reservoir to the north east of the project western end. Fieldwork was conducted on the terrestrial portion of the project by the Author and a team of four PEP archaeologists on September 22, 23, and 26 of 2011. A total of 92 shovel test locations were investigated along the project ROW. Shovel testing produced two isolated finds, each containing 1 flake, with further delineation of the two positive shovel tests unable to locate a site. No other cultural resources were uncovered during this survey. Additionally, a visual inspection of a 300 meter (984 feet) buffer zone revealed no standing structures that would be deemed eligible for listing on the National Register of Historic Places.

Two Isolated find flakes were the only cultural resources found during the shovel testing, no other cultural resources or sites were identified during this survey, and as long as construction follows the presently delimited APE, I recommend the project should be cleared to begin ground-disturbing activities with one exception. In the remote possibility that archaeological features or human remains are found during ground-disturbing activities on the property, work should be delayed and the survey archaeologist and the Mississippi Department of Archives and History, Historic Preservation Division, should be notified. The field notes and computer files associated with this CRS will be stored with the Principal Investigator, Michael P. Fedoroff at Pritchett Engineering and Planning, LLC, and a full version of this report will be on file at Mississippi Division of Archaeology.

Michael P. Fedoroff MA, RPA
Principal Investigator
November 15, 2011



Appendix A

Field Photos



Figure A.1. Garrett Rouse digging shovel test.



Figure A.2. Rosie Mayfield entering point in GPS.



Figure A.3. North overview of pumping station.



Figure A.4. Plan view of shovel test R-13.

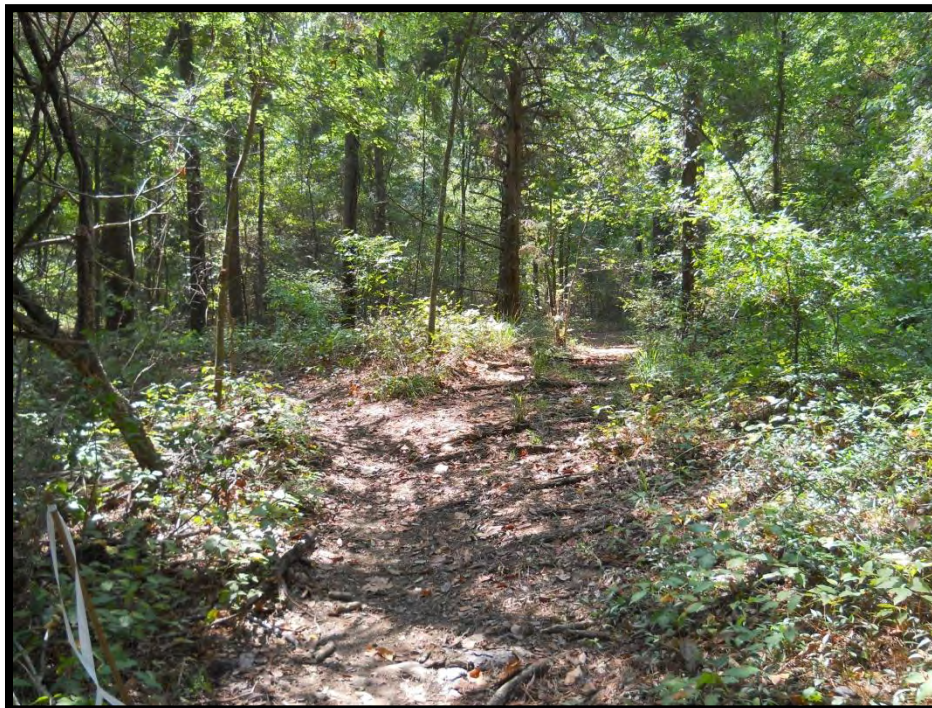


Figure A.5. South overview of Old Trace.



Figure A.6. Plan view of shovel test R-56.

REFERENCES CITED

Andrefsky, William.

- 1998 *Lithics: Macroscopic Approaches to Analysis*. Cambridge Manuals in Archaeology, Cambridge University Press.

Atkinson, James R.

- 1986 Historic Chickasaw Cultural Material: A More Comprehensive Identification. *Mississippi Archaeology* 22(2): 33- 58.

Berry, John W.

- 1919 *Upper Cretaceous Floras of the Eastern Gulf Region in Tennessee, Mississippi, Alabama, and Georgia*. United States Geological Survey Professional Paper No. 112, Washington D.C.

Brookes, Samuel O.

- 1979 *The Hester Site: an Early Archaic Occupation in Monroe County, Mississippi*. Mississippi Department of Archives and History Archaeological Report No. 5, Jackson.

- 1982 Everyman's Guide to Projectile Points, Part III. *Mississippi archaeology*, 17(2): 6-12.

- 1985 The Kirk Point that Ate the Eastern United States. *Mississippi Archaeology* 20(2): 24-31.

Brookes, Samuel O. and Melissa H. Reams

- 1996 *Early Holocene Climate in the Eastern U.S.: A View from Mississippi*. Paper presented at the Annual Meeting of the Southeastern Archaeological Conference, Pensacola, Florida.

Caplenor, C. D; Bell, R. E.; Brook, Judith; Caldwell, Dale; Hughes, Charles; Regan, Anne; Scott, Alice; Ware, Stewart; and Wells, Melanie

- 1968 Forests of West Central Mississippi as Affected by Loess. In *Loess Investigations in Mississippi*. Mississippi Geological, Economic And Topographical Survey, Bulletin 111. Mississippi, Jackson.

Connaway, John.

- 1980 The Baldwin- O'Neal Dilemma. *Mississippi Archaeology* 15(1): 22- 29.

Cross, Ralph D. and Robert Wales

1974 *Atlas of Mississippi*. University Press of Mississippi, Jackson.

Davis, William C.

1995 *A Way through the Wilderness: The Natchez Trace and the Civilization of the Southern Frontier*. New York: Harper Collins, 1995.

Delcourt, Paul and Hazel Delcourt

1991 *Quaternary Ecology: A Paleoecological Perspective*. Chapman and Hall, London.

Delcourt, P. A., and Hazel Delcourt

1979 Late Pleistocene and Holocene Distributional History of the Deciduous Forest in the Southeastern United States. In *Verhff. Geobot. Inst. Eidg. Tech. Hochsch. Stift.* 68: 79-107. Riibel, Ziurich.

DeJarnette, David, Edward Kurjack, and James W. Cambron.

1968 Stanfield- Worley Bluff Shelter Excavations. *Journal of Alabama Archaeology* 8 (1-2) 1-124.

Fedoroff, Michael P.

2009 *Earth-oven Technology in the Mississippi Pine Hills: An Experimental Approach to Archaeological Investigations and Method Development*. Unpublished Master's thesis, University of Southern Mississippi, Hattiesburg.

2008 Cooking Technology in the Pine Hills. In *An Evaluation of Remote Sensing Effectiveness in the Pine Hills of Southeast Mississippi: Ground Truthing at 22F01294 and 22F01301*. Edited by Ed Jackson, pp 110-135. Report submitted to Mississippi Army National Guard, Camp Shelby, Mississippi.

2011 *Report of Findings for a Phase I Cultural Resource Survey for Proposed Right-of-Way Connector 8-3 Valve to Tinsley, MDAH Project Log #10-198-10, Madison County, Mississippi*. Report submitted to Mississippi Department of Archives and History, Jackson.

Fields, Rita D. and Stephen B. Rochester

2003 *Phase II Archaeological Testing of 22GN680 (Webb Site), 2GN687 (Mossy Ridge), and 22GN685 (Evil Limb) Greene County, Mississippi*. Report submitted Mississippi Department of Transportation, Jackson, Mississippi. MDOT Project No. 98-0002-01-013-10/101150. PBS&J, Jackson.

Giliberti, Joseph A.

- 1995 *San Patrice and Related Early Tool Assemblage from the Beaumont Gravel Pit site (22Pe504): A Late PaleoIndian Site in South Mississippi*. Master's thesis, University of Southern Mississippi, Hattiesburg.

Jenkins, Ned J. and Richard A. Krause

- 1986 *The Tombigbee Watershed in Southeastern Prehistory*. University of Alabama Press, Tuscaloosa.

Johnson, Jay K. and Samuel O. Brookes

- 1989 Benton Points, Turkey Tails and Cache Blades: Middle Archaic Exchange in the Midsouth. In *Southeastern Archaeology* 8(2) pp. 134-145.

Laporte, Leo F.

- 1979 *Ancient Environments*. Prentice-Hall, New Jersey.

Lauro, James

- 2004 *Cultural Resource Survey of Proposed 8,000' Pipeline Rankin & Madison Counties, Mississippi*. Report submitted to Mississippi Department of Archives and History, Jackson.

- 2006 *Cultural Resource Survey of Proposed 11 Mile Pipeline Rankin County, Mississippi*. Report submitted to Mississippi Department of Archives and History, Jackson.

McGahey, Samuel O.

- 2000 *Mississippi Projectile Point Guide*. Archaeological Report No. 31. Mississippi Department of Archives and History, Jackson.

Mellen, Frederic Francis.

- 1940 Yazoo County Mineral Resources. Mississippi State Geological Survey, Bulletin 39. Mississippi, University.

O'Hear, John W.

- 2010 *Cultural Resources Survey of the Proposed J.S. LLC Mine #3, Lee County, MS*. Report submitted to the Mississippi Department of Archives and History.

Picklesimer, John W.

- 2002 *Phase I Cultural Resources Survey of Proposed Replacement Locations Along Gulf South's Existing Kosciusko Pipeline, Rankin County, MS*. Report submitted to the Mississippi Department of Archives and History.

Ryba, Beth A.

2006 *A Phase I Cultural Resources Assessment of the Proposed East Yandell Road Cellular Tower near Madisonville, Madison County, Mississippi*. Report submitted to Mississippi Department of Archives and History, Jackson.

Sassaman, Kenneth and David Anderson eds.

1996 *Archaeology of the Mid-Holocene Southeast*. University Press of Florida, Gainesville.

Schuldenrein, Joseph

1996 Geoarchaeology and the Mid-Holocene Landscape History of the Greater Southeast. In *Archaeology of the Mid-Holocene Southeast*. David Anderson and Kenneth Sassaman eds. University Press of Florida, Gainesville.

Snowden, J. O. and Priddy, Richard R.

1968 Geology of Mississippi Loess. In *Loess Investigations in Mississippi*. Mississippi Geological, Economic and Topographical Survey, Bulletin 111. Mississippi, Jackson.

Stubbs, John D.

1982 A Preliminary Classification for Chickasaw Pottery. *Mississippi Archaeology* 18(2): 50- 57.

Stubbs, John D.

1983 *A Report Presenting the Results of Archaeological Survey in Lee County, Mississippi: June, 1981 to June, 1983*. Three Volumes. Un- published manuscript on file, Mississippi Department of Archives and History, Jackson.

NCRS

2011 Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Soil Survey Geographic (SSURGO) Database for *Lee County, Mississippi*, available online at URL: <http://soildatamart.nrcs.usda.gov> [accessed 03/21/2011].

Walthall, John.

1980 *Prehistoric Indians of the Southeast: Archaeology of Alabama and the Middle South*. University of Alabama Press, Tuscaloosa.

Walthall, John A. and Ned Jenkins

1976 The Gulf Formational Stage in Southeastern Prehistory, *Southeastern Archaeological Conference Bulletin* 19.

Watkins, Joel H.

2005 *A Phase I Cultural Resources Reconnaissance of a Proposed Well Pad and Associated Pipeline Located near Goshen Springs, Rankin County, Mississippi.*

2006 *A Phase I Cultural Resources Reconnaissance of a Proposed Well Pad Located Near Goshen Springs, Rankin County, Mississippi.* Report submitted to Mississippi Department of Archives and History, Jackson.