Exhibit HH. West Feliciana Industrial Park Site Phase I Cultural Resources Assessment Report

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West Feliciana Industrial Park Site Phase I Cultural Resources Assessment Report

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- *Phase I Cultural Resources Survey of 410 Acres (165.9 hectares), West Feliciana Industrial Park, West Feliciana Parish, Louisiana* by SURA, INC dated April 12, 2017.
- *Phase I Cultural Resources Survey and Archeological Inventory of the Proposed Thompson Creek Energy Center, West Feliciana Parish, Louisiana* by R. Christopher Goodwin & Associates, Inc. dated July 2001.

PHASE I CULTURAL RESOURCES SURVEY OF 410 ACRES (165.9 HECTARES), WEST FELICIANA INDUSTRIAL PARK, WEST FELICIANA PARISH, LOUISIANA

Draft Report

For

Baton Rouge Area Chamber
564 Laurel St
Baton Rouge, LA 70801

April 12, 2017

SURA, INC.
P.O. Box 14414
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Since 1986

PHASE I CULTURAL RESOURCES SURVEY OF 410 ACRES (165.9 HECTARES), WEST FELICIANA INDUSTRIAL PARK, WEST FELICIANA PARISH, LOUISIANA

Draft Report

By

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For

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ABSTRACT

From February 16 to March 15, 2017, Surveys Unlimited Research Associates, Inc. (SURA, Inc.) conducted a Phase I cultural resources survey of 410 acres (ac) (165.9 hectares [ha]) on the left descending bank of the Mississippi River, south of St. Francisville, La., West Feliciana Parish. The project area is intended for use as an industrial park. A total of 882 shovel tests were excavated.

Seven archaeological sites were defined inside of the APE, three of them being previously unrecorded. The authors suggest that archaeological sites 16WF43, 16WF45, 16WF153, 16WF154, 16WF192, and 16WF193 do not possess the qualities of significance and are not eligible for listing on the National Register of Historic Places under Criterion D. One prehistoric isolated find was also noted and recorded.

16WF191 was recorded as the Salvation Church Cemetery. The nearby church was recorded as a standing structure. There are roughly forty-eight burials inside of the site boundary. To take into account the possibility of unmarked graves outside the existing fence, SURA, Inc. suggests a 100 ft (30.48 m) protective buffer around the site perimeter. The National Register status for this site is undetermined.

ACKNOWLEDGMENTS

The field crew was led by Mr. Matthew Chouest, and consisted of Ms. Brandy Kerr, Ms. Margeaux Murray, Mr. Hamzah Jule, Mr. Will McManus, Ms. Jennie Garcia, and Mr. Karl Shuman. Dr. Malcolm Shuman was the principal investigator.

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CHAPTER ONE:
INTRODUCTION

From February 16 to March 15, 2017, Surveys Unlimited Research Associates, Inc. (SURA, Inc.) conducted a Phase I cultural resources survey of 410 acres (ac) (165.9 hectares [ha]) on the left descending bank of the Mississippi River, south of St. Francisville, La., West Feliciana Parish (Figure 1). This tract is intended for use as an industrial park. The survey was carried out on the request of the Baton Rouge Area Chamber (BRAC) under the Louisiana Department of Economic Development (LED) site certification program. The APE lies within Section 43, T4S, and R2W.

The following chapters in this report describe the environmental setting, prehistory and historical backgrounds, previous archaeological investigations, the methodology employed in the survey, the survey's results, and the study's conclusions and recommendations.

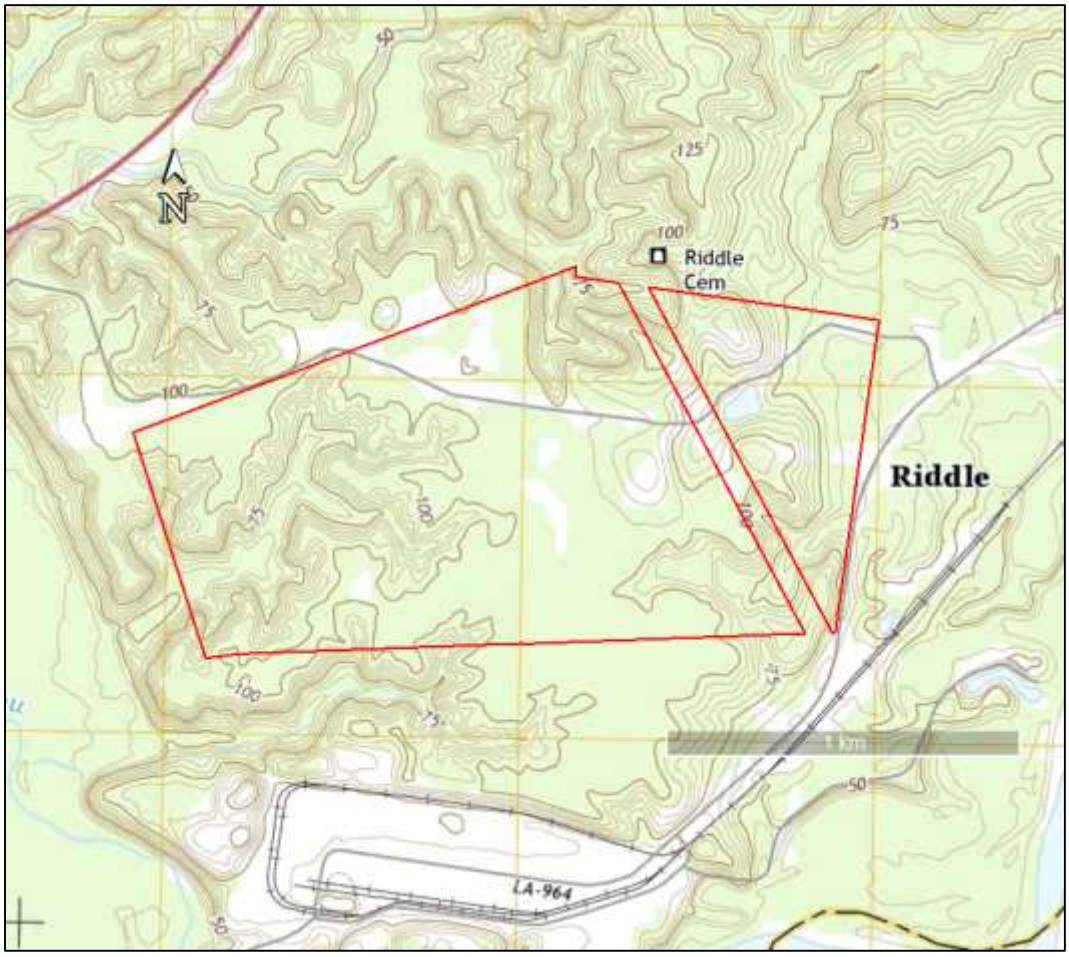

FIGURE 1 – PORTION OF 2015 PORT HUDSON, LA 7.5-MINUTE TOPOGRAPHIC MAP DEPICTING APE IN RED (USGS).

CHAPTER TWO:
ENVIORNMENTAL SETTING

FLORA AND FAUNA

The dissected uplands in the Tunica Hills of West Feliciana Parish contain mixed shortleaf pine/oak-hickory forests. Examples of the common tree types are: the shortleaf pine (*Pinus echinata*), the loblolly pine (*Pinus taeda*), red oak (*Quercus falcata*), black oak (*Quercus velutine*), black hickory (*Carya texana*), sweet gum (*Liquidambar styraciflua*) and red maple (*Acer rubrum*). The understory in this type of forest contains a great many shrubs such as huckleberry (*Vaccinium arboreum*), holly (*Ilex decidua*) and poison ivy (*Rhus toxicodendron*). On the banks of the Mississippi River, willows (*Salix nigra*) and sycamores (*Platanus occidentalis*) dominate the natural vegetation. The modern disturbance of the forests in Louisiana, however, has allowed the short leaf varieties to perpetuate beyond their natural exclusion from the hardwood forest. This description of the natural setting, typical for West Feliciana Parish, is also specifically appropriate for the project area.

The animal life of this region was undoubtedly diverse and abundant before extensive historic settlement. With farming and logging, however, the natural setting of the project area was significantly altered. Nevertheless, Table 1 presents a list of representative fauna that are known to inhabit the region surrounding the project area and which probably inhabited it before the onset of modern development.

TABLE 1 – REPRESENTATIVE ANIMAL SPECIES PRESENT IN PROJECT AREA AND VICINITY (SOURCE: JONES ET AL. 1996).

FISH

Common Name	Scientific Name	Habitat
Spotted gar	*Lepisosteus oculatus*	Clearer waters of lakes, bayous, and oxbows with abundant vegetation
Longnose gar	*Lepisosteus osseus*	Larger rivers
Shortnose gar	*Lepisosteus platostomus*	Larger rivers
Alligator gar	*Lepisosteus spatula*	Large bodies of water, rivers, and lakes
Bowfin	*Amia calva*	Sluggish waters of bayous and borrow pits often choked with vegetation
Gizzard shad	*Dorosoma cepedianum*	Common in all waters of this area
Cypress minnow	*Hybognathus hayi*	Quiet water areas of rivers over soft bottom
Silvery minnow	*Hybognathus nuchalis*	Main stream of major rivers over mud, sand or gravel bottom
Golden shiner	*Notemigonus srysoleucas*	Common in all waters of this area
Emerald shiner	*Notropis artherinoides*	Large rivers
River shiner	*Notropis blennius*	Large rivers
Smallmouth buffalo	*Ictiobus bubalus*	Oxbow lakes and backwaters of large rivers
Bigmouth buffalo	*Ictiobus cyprinellus*	Rivers, lakes, oxbows, and bayous
Black buffalo	*Ictiobus niger*	Larger rivers, oxbows, and bayous
Blue catfish	*Ictalurus furcatu*	Larger rivers
Channel catfish	*Ictalurus punctatus*	Most lakes and rivers
Yellow bass	*Morone mississippiensis*	Moderate to small lakes
Blue gill	*Lepomis macrochirus*	Non-flowing, clear water with scattered weed beds
Largemouth bass	*Micropterus salmoides*	Non-flowing water with aquatic vegetation
Freshwater drum	*Aplodinotus grunniens*	Silty waters of large rivers and lakes

AMPHIBIANS

Common Name	Scientific Name	Habitat
American toad	*Bufo americanus*	Variety of habitats; require water, cover and insects
Green treefrog	*Hyla cinerea*	Swamps, lake borders, anyplace with much water
Gray treefrog	*Hyla versicolor and Hyla chrysoscelis*	Low shrubs in or near standing water
Bullfrog	*Rana catesbiana*	Large bodies of water (lakes,ponds, sluggish streams
Green frog	*Rana clamitans melanota*	Shallow, fresh water

TABLE 1 (CONTINUED) – REPRESENTATIVE ANIMAL SPECIES PRESENT IN PROJECT AREA AND VICINITY.

REPTILES

Common Name	Scientific Name	Habitat
Snapping turtle	*Chelydra serpentina*	Permanent body of fresh water
Alligator snapping turtle	*Macroclemys temmincki*	Rivers and lakes
Three-toed box turtle	*Terrapene carolina triunguis*	Terrestrial, wooded areas or edges
Ground skink	*Leiolopisma laterale*	Forest floor covered with leaves
Five-lines skink	*Eumeces fasciatus*	In or near wooded areas with scattered debris
Diamondback water snake	*Natrix rhombifera rhombifera*	Most aquatic habitats
Yellow-bellied water snake	*Natrix erythrogaster flavigaster*	Large, permanent waterbodies
Eastern garter snake	*Thamnophis sirtalis sirtails*	Virtually all semi-aquatic to terrestrial habitats
Speckled king snake	*Lampropeltis getulus holbrooki*	Variety of habitats including swamps
Southern copperhead	*Agkistrodon contortrix contortrix*	Lowlands near swamps
Cottonmouth	*Agkistrodon piscivorus*	Aquatic habitat-swamps, lakes and rivers

BIRDS

Common Name	Scientific Name	Habitat
Great blue heron	*Ardea herodias*	Shallow swamps and bayous
Marsh hawk	*Circus cyaneus*	Mature bottomland-pine hardwood forest
Black duck	*Anas rubripes*	Aquatic habitats
Pintail	*Anas acuta*	Aquatic habitats
Green-winged teal	*Anas carolinensis*	Aquatic habitats
Blue-winged teal	*Anas discors*	Aquatic habitats
Canvasback	*Anas valisineria*	Aquatic habitats
Gadwall	*Anas strepera*	Aquatic habitats
Great egret	*Casmerodius albus*	Wooded swamps
Snowy egret	*Egretta thula*	Wooded swamps
Mallard	*Anas platyrhynchos*	Shallow wooded swamps or flooded bottomlands
Wood duck	*Aix sponsa*	Wooded swamps and flooded bottomlands
Wild turkey	*Meleagris gallopavo*	Mature bottomlands or pine hardwood forest
Pileated woodpecker	*Dryocopus pileatus*	Conifer, mixed, and hardwood forests
Red-headed woodpecker	*Melanerpes erythrocephalus*	Groves, farm country

TABLE 1 (CONTINUED) – REPRESENTATIVE ANIMAL SPECIES PRESENT IN PROJECT AREA AND VICINITY.

MAMMALS

Common Name	Scientific Name	Habitat
Virginia opossum	*Didelphis virginiana*	Wooded areas
Eastern cottontail	*Sylvilagus floridanus*	Open grassy areas and pastures
Swamp rabbit	*Sylvilagus aquaticus*	Heavily wooded areas
Gray squirrel	*Sciurus carolinensis*	Wooded area
Fox squirrel	*Sciurus niger*	Open, wooded area
American beaver	*Castor canadensis*	Aquatic area with wood vegetation
Coyote	*Canis latrans*	Prairies, open woodlands
Red fox	*Vulpes fulva*	Open or broken mixed forest
Gray fox	*Urocyon cinereoargenteus*	Upland mixed forest-pasture areas
Striped skunk	*Mephitis mephitis*	Mixed open and wooded areas
Neartic river otter	*Lutra canadensis*	Most aquatic habitats
White-tailed deer	*Odocoileus virginianus*	Bottomland hardwood forest with openings

NOTES: References cited are Douglas (1974), Conant (1975), Lowrey (1955 and 1974), St. Amant (1959) and Sealander (1956).

GEOLOGY AND GEOMORPHOLOGY

An understanding of a region's geomorphology, geomorphic changes and geomorphic processes is an important component for assessing the distribution and preservation potential of human settlements, areas of other human activities and associated cultural resources. Geomorphology can be used to determine the ages of fluvial deposits and reconstruct the environments people may have occupied. Knowledge of geomorphic changes may indicate the following: (1) where sites are likely to have been destroyed because of vertical and lateral erosion or recent human activities; (2) where sites may be preserved in the subsurface through burial by sediment deposition; (3) where sites may be more distant from their former position near a water boundary because of lateral accretion; and (4) where sites may be preserved at or near the surface because of minimal geomorphic changes. Geologic-physiographic units in the proposed project area include: (1) High Terraces complex, which is early Pleistocene or Pliocene in age; (2) loesses that cap the High Terraces complex; (3) late Quaternary terraces that flank local streams; and (4) alluvium of local stream valleys.

HIGH TERRACES COMPLEX

The High Terraces complex is a name given by the Louisiana Geological Survey (Snead and McCulloh 1984) for the oldest unit found at the surface in the study area. Commonly called the Tunica Hills, it corresponds closely with the area originally delineated as the Citronelle Formation by Matson (1916), a name used throughout other geological studies of the Gulf Coastal Plain and Lower Mississippi Valley. The

description on the Geologic Map of Louisiana is “a tan to orange clay, silt, and sand with a large amount of basal gravel.” Surfaces are highly dissected and less continuous than the lower terraces, and are composed of terraces formerly designated as Citronelle, Williana, and the Bentley (Snead and McCulloh 1984). Most workers have considered these as one morphostratigraphic unit, although Fisk (1944) believed that portions of two terraces, the Williana and the Bentley, occur across this area. Nomenclature associated with this unit has been varied (Table 2).

At maturity, the High Terraces complex is dissected and its general morphology is that of a cuesta. Surface elevations are generally higher than 170 ft (50 m), but the contact between this terrace and other units cannot be drawn solely on the basis of elevation. Local relief is very pronounced and slopes of this surface are generally appreciably greater than those of the lower terraces. Because of dissection and structural influence, the original geomorphic expression of the surface has been obliterated, and the depositional environment is best determined stratigraphically.

The depositional environments of these sediments have been variously interpreted as glacio-fluvial, marine, meandering or braided stream (see Table 2). The modern consensus is that the Citronelle Formation is an alluvial apron that was deposited by braided, coalescing streams. Heavy mineral analyses by Rosen (1969) indicate that these deposits are also not derived from the Mississippi River as inferred by Fisk (1944). The deposits forming the High Terraces complex consist predominantly of coarse-grained sediments, the source of which has been variously regarded as the continental interior (Fisk 1939; Woodward and Gueno 1941); the eastern Gulf or Appalachian area (Rosen 1969; Cullinan 1969); or, more likely, a combination of these and possibly other sources.

TABLE 2 – STRATIGRAPHIC NOMENCLATURE, INTERPRETATION, AND APPROXIMATE STRATIGRAPHIC CORRELATION OF THE COAST-TRENDING PLEISTOCENE TO LATE TERTIARY DEPOSITS OF THE CENTRAL GULF COASTAL PLAIN.

Source & Locality	Nomenclature for Prairie Terraces	Nomenclature for Intermediate Terraces	Nomenclature for High Terraces	Nomenclature for Late Tertiary Deposits
Hilgard (1866,1869) Mississippi western Florida parishes Louisiana	Port Hudson Formation fluvial, brackish, marine (Qpl)		Orange Sand Formation glaciofluvial (Qepl)	Grand Gulf Group (T)
McGee (1891) Atlantic & Gulf coastal plains	Columbia Formation marine, continental (Q)		Lafayette Formation marine (T)	
Clenderin (1896) Florida Parishes	Columbia Formation basal portion - continental (Q) upper portion - deltaic, submarine		Lafayette Formation continental (LT Q)	
Harris & Veatch (1899) Louisiana, Mississippi	Port Hudson Formation		Lafayette Formation littoral or coastal (Tpl)	
Matson (1916) Louisiana, Mississippi Alabama, Florida	Pensacola, Hammond, & Port Hickey Ter. coastal & fluviatile (Qpl)	St. Elmo Ter. coastal & fluviatile (Qpl)	Citronelle Formation largely nonmarine (Tpl)	
Doering (1935) southern Texas & southern Louisiana	Beaumont Formation deltaic, meandering streams (Qpl)	Lissie Formation coalescing river-built fans possible braided (Qpl)	Willis Formation coalescing river-built fans possibly braided (Qpl)	Fleming Formation (T)
Fisk (1938a) western Florida Parishes Louisiana & southern Mississippi	Port Hickey Terrace deltaic, fluvial equivalents (Qlpl)	Second Terrace deltaic, fluvial equivalents (Qpl)	Higher Terraces deltaic, fluvial equivalents (Qepl)	
Fisk (1938b) Red River region, western Louisiana	Prairie Terrace deltaic, fluviatile (Qpl)	Montgomery Terrace deltaic, fluvial (Qpl)	Bentley Ter. & Williana Ter. deltaic, fluviatile (Qpl)	
Doering (1956) Gulf Coast overview	Eunice Oberlin (Qpl) (Qpl)	Lissie (Qpl)	Citronelle Formation (Qepl)	
Parsons (1967) western Florida Parishes Louisiana & southwestern Mississippi	Beaumont Terrace deltaic plain (Qlpl)	Intermediate Terrace deltaic plain (Qpl)	Citronelle Formation braided streams-alluvial plain, marine in subsurface (Qepl Tpl)	Pascagoula Formation (Tm-pl)
Durham,Moore & Parsons (1967) western Florida Parishes	Prairie Terrace	Irene Terrace	Citronelle Formation	Pascagoula Formation (Tm-pl)
Cullinan (1969) Washington & St. Tammany parishes, Louisiana	Prairie Formation (Qpl)		Citronelle Formation	
Campbell (1971) St.Helena & Tangipahoa parishes, Louisiana	Prairie Formation (Qpl)		Citronelle Formation	
Otvos (1982) Florida parishes, south mississippi & south Louisiana	Prairie, Gulfport, & Biloxi Formation (Qlpl)	Unnamed pre-Sangamon unit (Qpl)	Citronelle Formation (Tpl)	Pascagoula Formation (Tm)
Snead & McCulloh, comps (1984) Louisiana	Prairie Terraces (Qpl)	Intermediate Terraces (Qpl)	High Terraces (Qpl)	

Ter. - Terrace(s) Q - Quaternary T - Tertiary LT - Late Tertiary Qlpl - Late Pleistocene Qpl - Pleistocene Qepl - Early Pliocene Tpl - Pliocene Tm - Miocene

In the vicinity of the project area, the origin of these deposits is best attributed to an eastern Gulf or Appalachian provenance (Rosen 1969; Cullinan 1969).

The stratigraphic sequences and patterns observed in exposures in the general region reflect a high-energy fluvial setting with multiple channels, several of which appear to have had an appreciably greater competence than modern streams. The sand and gravel deposits commonly display medium- to

large-scale planar foreset and trough cross beds, some over 2 inches (in) (6 feet [ft]) thick. Graveliferous deposits occur in thick sequences where gravel may comprise over 50 percent by weight of individual beds. Rip-up clasts of finely-laminated purplish-red and whitish silt and clay are present in some exposures. Individual rip-up clasts may exceed 125 centimeters (cm) (50 in) in diameter (Smith and Meylan 1983) and clast zones as thick as 3 meters (m) (10 ft) have been measured (Mossa and Self 1986). Channeling and cut-and-fill features are common in many exposures. Multi-colored clayey sequences, possibly marginal flood basin or channel fill deposits, 7 m (25 ft) in thickness are exposed in deposits of the High Terraces complex. The sediments in these exposures consist of a highly variable bimodal to trimodal mixture of sand, gravel, and clay, with sand being the dominant particle and clay the least common (Self 1983). In the sand-size fraction, quartz is dominant and chert is common. Locally in southeastern Louisiana, the gravel traction is composed primarily of subrounded, rounded, and subangular chert, with quartz being the next most prevalent component. The clay fraction of some rip-up clasts was determined as primarily kaolinite and illite with small percentages of quartz (Smith and Meylan 1983). Sediments are brightly colored and reflect staining by iron oxide minerals such as hematite and limonite, and possibly oxides of titanium and manganese.

In recent years, at least three major hypotheses have been advanced to explain the occurrence, thickness and coarseness of these high-level gravel deposits. Clendenin (1896) and Doering (1958) speculated that increased erosion and deposition were related to stream rejuvenation caused by epiorogenic uplift of the continental interior. Brown (1967), in contrast, proposed that a major river, such as an ancestral Tennessee River, flowed southwestward across Mississippi and through the northwest corner of the Florida parishes. Alt (1974) inferred the Citronelle gravels were deposited by large coalescing alluvial fans that he believed were related to an arid climate. Because none of these ideas has been fully substantiated, there is no consensus as to original deposition. However, it is likely that the coarse-grained deposits of basin divides and modern hillcrests are now gravel-defended ridges that are preserved from erosional processes (Brown 1967).

Soils developed on stable landscapes of the High Terraces complex often exhibit very thick sola and a well-developed soil structure. They are further characterized by multiple clay skins, red hues, high percentages of nodules of plinthite or ironstone, and a vermicular fabric of contrasting highly oxidized reduced sediments. The more reduced zones in the vermicular fabric are generally light gray to yellow in color and appear to follow root traces and perhaps burrows. Soils of reworked sediments on less stable landscapes of the High Terraces complex rarely exhibit the contrasting vermicular fabric and generally have less well-developed soil structure. The nature of the soils developed on the High Terraces complex is strongly controlled by the texture of the parent material and relief. The geosol developed on sediments of the High Terraces complex is readily traceable beneath the loess mantles at stable landscape positions.

The age of these deposits has been a subject of contention due to a scarcity of paleontological data and the occurrence of these gravels overlying Tertiary deposits of varying age. Pleistocene, Pliocene and Miocene ages have been cited as times of deposition. Many workers accept a Pliocene to Pleistocene deposition for these surficial sediments in Louisiana; however, other investigations suggest that the high-level gravels of the coastal plain may be as old as the Miocene (Alt 1974; May 1981).

LOESS

Loess, or wind-blown silt, borders both sides of the Mississippi Valley and rests on the High Terraces complex and even some younger Quaternary terraces. The source of the loess, as shown by mineralogical

and spatial evidence, was the Mississippi River and major tributaries that possibly had a braided pattern and largely unvegetated floodplain during Pleistocene glaciations.

Loess stratigraphy has recently been used to assign minimum and relative ages to different surfaces and stratigraphic sequences. The most detailed and extensive work on loesses in the lower Mississippi alluvial valley was conducted by Miller and colleagues (Miller et al. 1985; 1986). Peoria Loess and an older Sicily bland Loess typically blankets the High and Intermediate terrace complexes near the Mississippi Valley of south Louisiana (Miller et al. 1985; 1986). In some parts of the Tunica Hills, Pre-Peoria loess appears to be missing on the High Terraces complex, but no definitive explanation has been proposed. The Prairie and Deweyville terrace complexes are veneered only by Peoria Loess. The older loess has been dated in Mississippi by thermoluminescence at 95,000 to 75,000 years B.P. (before present) (Johnson et al. 1984) and 85,000 to 76,000 B.P. (Pye 1985). Radiocarbon dates of the Peoria Loess are late Wisconsinan, between 22,000 and 20,000 B.P. in Louisiana (Otvos 1975), and thermoluminescence dates in Mississippi range between 22,000 and 9,000 B.P. (Johnson et al. 1984; Pye 1985). Loess thickness is generally a function of distance from the ancestral Mississippi River, with thicker deposits being the closest (Spicer 1969; Miller et al. 1985). The Sicily Island Loess extends east at least to the Pearl River, which forms part of the Louisiana-Mississippi boundary, and is generally more extensive than the Peoria Loess in southeastern Louisiana. Eastward about 20 to 40 miles (mi) (32.25 to 64.5 kilometers [km]) to the Amite River, Sicily Island Loess is greater than 1 m thick. Further eastward, loess is discontinuous, generally less than 1 m thick and mixed with underlying material. A number of field and laboratory criteria have been established to distinguish the loesses (Table 3) (Miller et al. 1985). The Sicily Island loess is more highly weathered and commonly has hues of 7.5YR in contrast to the predominant 10YR hues of the Peoria Loess. The presence of *in situ* loess mantles, which can be assessed by geomorphic, sedimentologic, and pedologic criteria, indicates landscape stability.

LOCAL LATE QUATERNARY TERRACES

At least two distinct alluvial terraces flank the modern streams of the Tunica Hills (Delcourt 1974; Delcourt and Delcourt 1977; Kress 1979; Alford et al. 1983). Of these, the higher surface was designated as part of the Prairie Terraces complex and the lower surface was incorporated with Alluvium on the Geologic Map of Louisiana (Snead and McCulloh 1984).

TABLE 3 – COMPARATIVE DIFFERENCES BETWEEN MODERN SOILS, HAVING SIMILAR LANDSCAPE AND INTERNAL SOIL DRAINAGE CHARACTERISTICS, DEVELOPED IN PEORIA AND PRE-PEORIA LOESSES IN LOUISIANA (FROM MILLER ET AL. 1985).

SOIL CHARACTERISTIC	SOIL PARENT MATERIAL	
	PEORIA LOESS	PRE-PEORIA LOESS
Solum thickness	least	greatest
Thickness of A + E horizons	least	greatest
Color (Hue)	least red	reddest
Maximum clay content in argillic	least	greatest
Total clay content in solum	least	greatest
Weatherable minerals in nonclay fraction	greatest	least
Amount of smectite clay	greatest	least
Amount of micaceous clay	greatest	least
Amount of kaolinite clay	least	greatest
Interlayering / interstratification of clay	least	greatest
Fe-oxide content	least	greatest
CEC per unit of clay	greatest	least
Soil pH	highest	lowest
pH-dependent CEC and acidity	least	greatest
Extractable acidity ($BaCl_2$ TEA	least	greatest
% Al saturation (effective CEC basis)	least	greatest
% base saturation (effective, NH_4OAc at pH 7.0, summation of cations)	greatest	least
Exchangeable Ca/Mg ratio	greatest	least
Total and extractable P	greatest	least

Entrenchment has been a significant geomorphic process along the downstream portions of the streams in the Florida parishes that drain into the Mississippi River. Bluffs are commonplace along the Tunica Hills streams and generally expose bank sections of greater height and relief than along other southward-flowing streams in the Florida parishes. Downcutting into the Late Tertiary (Miocene) sediments of the Pascagoula Formation is evident from the bluff exposures and the resistant ledges visible in stream bottoms at low flow. Several possible factors have caused terrace development and entrenchment in the Tunica Hills. Fisk (1938) hypothesized that entrenchment and bluff-cutting took place along Bayou Sara as the Mississippi River migrated eastward and caused the streams to increase their gradients and cut through the terrace deposits. This possibility was considered plausible by Delcourt and Delcourt (1977), Alford et al. (1983), and Mossa and Autin (1989). Others believe that local uplift may also be accentuating the steep gradients of these streams (i.e., Fisk 1938). Furthermore, others believe that incision was caused by eustatic or regional factors spanning a long period (Otvos 1980). The sediments within the terrace sequences are believed to be associated with aggradation during marine transgressions (Fisk 1938; Delcourt and Delcourt

1977; Otvos 1980). Otvos interpreted the younger terrace as cut in response to the Woodfordian marine regression.

There has been much interest and some disagreement on the number, nature, and age of the terraces and stratigraphic units in the Tunica Hills. Fisk (1938) was the first to describe the morphostratigraphy of the terraces in the Tunica Hills. He believed that at least three terrace deposits were unconformably overlying the Miocene clayey siltstones and sands. The name Port Hickey was assigned to the lowest surface and was correlated with the fluvial-trending Prairie Terrace of central Louisiana. Wilcox Bluff was considered part of the Port Hickey sequence and was thought to be mid-Wisconsinan in age. Lower terraces were recognized but considered as merely benches notched into the Port Hickey alluvium. Across the Lower Mississippi Valley, Fisk recognized at least two older surfaces. The Second Terrace was considered to be equivalent to the Montgomery Terrace and was thought to date to the Sangamon glaciation. The Higher Terraces complex was undifferentiated but was considered equivalent to the Bentley and Williana. Fisk (1938) described the sequence at Wilcox Bluff as capped by loess or loess-like material.

Delcourt and Delcourt (1977) presented a different interpretation. They recognized two alluvial fills. The lowest terrace (Terrace 1) was considered to be Woodfordian to Holocene in age based on a scattering of radiocarbon dates ranging between 12,740 and 3,457 B.P. The silty sediments overlying Terrace 1 were interpreted as reworked rather than *in situ* loess. The surface associated with Wilcox Bluff was designated Terrace 2 and interpreted as being Sangamonian because the underlying sediments contain a distinctly warm-temperate plant assemblage.

Otvos (1978, 1980, 1981) expressed yet another viewpoint. Considering the silt on the low terrace (T1) to be *in situ* rather than reworked loess, he interpreted the fill as older and probably deposited during a Farmdalian high sea level stand. He obtained dates between 33,720 and 3,250 B.P. but rejected the younger dates as contaminated. Wilcox Bluff was considered equivalent to the low terraces and was assigned a Farmdalian age.

Alford et al. (1983) reassessed the terrace stratigraphy of the Tunica Hills by resampling and additional radiocarbon dating. They inferred that Delcourt and Delcourt (1977) were correct about the reworked condition of the loess because the silts lacked primary carbonates and contained sand stringers and occasional pebbles, indicating that the sediments were colluvial. Four organic samples collected from the low terrace (T1) yielded dates from near the base of the fill of greater than 38,000 B.P. They also believed that the samples collected by Otvos (1980, 1981) at other probable T2 sites that dated Farmdalian (30,775 to 25,965 B.P.) might be correlative and valid, and that the terrace was mid-Wisconsinan. Only Peoria Loess was interpreted as present on T2 and the loess buried a weakly developed paleosol. For these reasons, Alford et al. (1983) were reluctant to consider Wilcox Bluff Sangamonian.

LATE QUATERNARY FLUVIAL TERRACES

The late Quaternary fluvial terrace deposits in the Tunica Hills are noted for their copious fossil remains, including diverse and well-preserved plant assemblages, freshwater mollusks, and a variety of Pleistocene mammals. Of note among the plant fossils is the reported occurrence of typically boreal species, including white spruce (*Picea glauca*) and tamarack (*Larix laricina*). These are indicative of a cooler and possibly drier Pleistocene climate comparable to the modern Great Lakes region. Boreal and cool-

temperate mammals, including bog lemming (*Synaptomys* sp.), meadow vole (*Microtus pennsylvanicus*) and extinct woodland musk ox (*Symbos cavifrons*), have also been reported in West Feliciana Parish, just south of the study area. Other extinct species include sloths and armadillos such as extinct giant armadillo (*Chlamyterium septentrionale*), extinct Pleistocene armadillo (*Dasypus bellus*), extinct ground sloth (*Megalonyx jeffersoni* and *Mylodon harlani*); rodents such as extinct giant beaver (*Castoroides ohioenis*); flesh-eating mammals such as extinct saber-tooth tiger (*Smilodon floridanus*); and other large mammals such as extinct mammoth (*Elephas* sp.), American mastodon (*Mammut americanum*), extinct eastern horse (*Equus complicatus*) and extinct tapir (*Tapirus veroensis*) (Brown 1938; Steere 1938; Richards 1938; Domning 1969; Lowery 1974; Delcourt and Delcourt 1977; Givens and Givens 1987).

LOCAL STREAM ALLUVIUM

Alluvium was frequently mapped across the width of most valleys, including terrace deposits older than Holocene. Topographic evidence and pedologic data indicate that several terrace surfaces, which are classified by the Louisiana Geological Survey as Deweyville, Prairie, or perhaps Intermediate Terraces complex, were included in this delineation. Subdivision of the units in the smaller alluvial valleys was not feasible because of map scale.

Local streams in the project area have incised into Pleistocene deposits. The landforms deposited by such streams are proportionately smaller than the Mississippi. Since the local gradients are steep, the currents are generally swift through the headwaters and upper portion of the basin. As the creeks approach the Mississippi River, or its floodplain, velocity generally decreases. Also, flow can be bidirectional in portions of the streams, depending upon the stage of the Mississippi. The mouths of local streams generally experience backwater when stages in the Mississippi River are high, and flow toward the Mississippi when stages in the river are low. Local stream alluvium is dominated by the mineralogical suites of the area drained. In the proposed project area, geologic units principally include the High Terraces complex, which is dominated by kaolinite and has an eastern Gulf or Appalachian heavy mineral suite, and loess, which has the mineral suite of its source, the Mississippi River.

Part of the lower section exposed in the local stream bottoms is considered to be equivalent to the Miocene Pascagoula Formation in Mississippi. These sediments may have been deposited in a brackish-water deltaic (Brown et al. 1944) or a shallow marine (Cullinan 1969) setting. Other investigations suggest there are both fluvial and brackish components (Fisk 1944; Parsons 1967; Otvos 1982). Lithologies of the lower section include greenish clays, silts and sands that have muddy pebble-sized rip-up clasts. The greenish clays and silts are typically indurated.

CHAPTER THREE:
PREHISTORY OF THE PROJECT AREA

PALEOINDIAN PERIOD (?–6000 B.C.)

It is unknown when humans first entered the New World. Some researchers would date this event as early as 40,000 years ago, but more conservative investigators would place the first Americans at no earlier than 23,000 B.P. A reasonable range is that provided by Anderson et al. (1996), which posits a 15,000 to 11,000 B.P. window. Whatever the case, by 10,000 years ago Paleoindians were living in caves at the Straits of Magellan, so that their entry into the New World must have occurred several thousand years prior to that (Neuman 1984:58). Figure 3 presents a prehistoric culture history chronology for the general Lower Mississippi Valley and southern Louisiana. The eastern area noted on the chart is most applicable for the current project.

In Louisiana, there is evidence of Paleoindians, both from a series of surface finds of fluted points and from excavations (Webb et al. 1971). Most of these data derive from the northern half of the state, while evidence from the Coastal Zone is somewhat more ambiguous. During the 1960s, Sherwood Gagliano carried out a series of investigations at Avery Island, a salt dome island in Iberia Parish that led him to conclude that Avery Island had been inhabited by a "pre-Clovis" culture associated with a bipolar tool industry (Gagliano 1964; 1967; 1970). As Neuman has written, however, Gagliano has been unable to point to a single Paleoindian artifact *in situ* and his bipolar industry could just as easily be Archaic in date, judging from similar assemblages found elsewhere in Archaic contexts. In fact, a radiocarbon date for split cane matting found *beneath* extinct animal bones is Archaic (2310 +/-590 B.C.), a fact that suggests that some of the important material found by Gagliano had been contextually disturbed (Neuman 1984:63–65). Finds of Dalton, Plainview and San Patrice points at the Blackwater Bayou (16EBR33) and Palmer (16EBR26) sites indicate that Paleoindian occupations were present in the general area of the Florida Parishes (Weinstein et al. 1977).

ARCHAIC PERIOD (6000 B.C.–1500 B.C.)

This period was a time of exploitation of wild plant foods and small game, representing adaptation to an expanding boreal environment (Weinstein and Kelley 1992:32–34). The initial part of this period, the Early Archaic (6000–5000 B.C.), is defined by a series of distinctive projectile points. It has been suggested that society was organized at the band level and focused on a seasonal round of hunting and gathering. The succeeding Middle Archaic period (5000–3000 B.C.) was marked by more widespread regional differentiation of cultures and the development of ground stone technology (Weinstein and Kelley 1992:30). This subperiod corresponds to the Hypsithermal Interval, a time of increased warmth and aridity in areas around the Great Plains. It is presently unclear what effect this may have had on the Southeast.

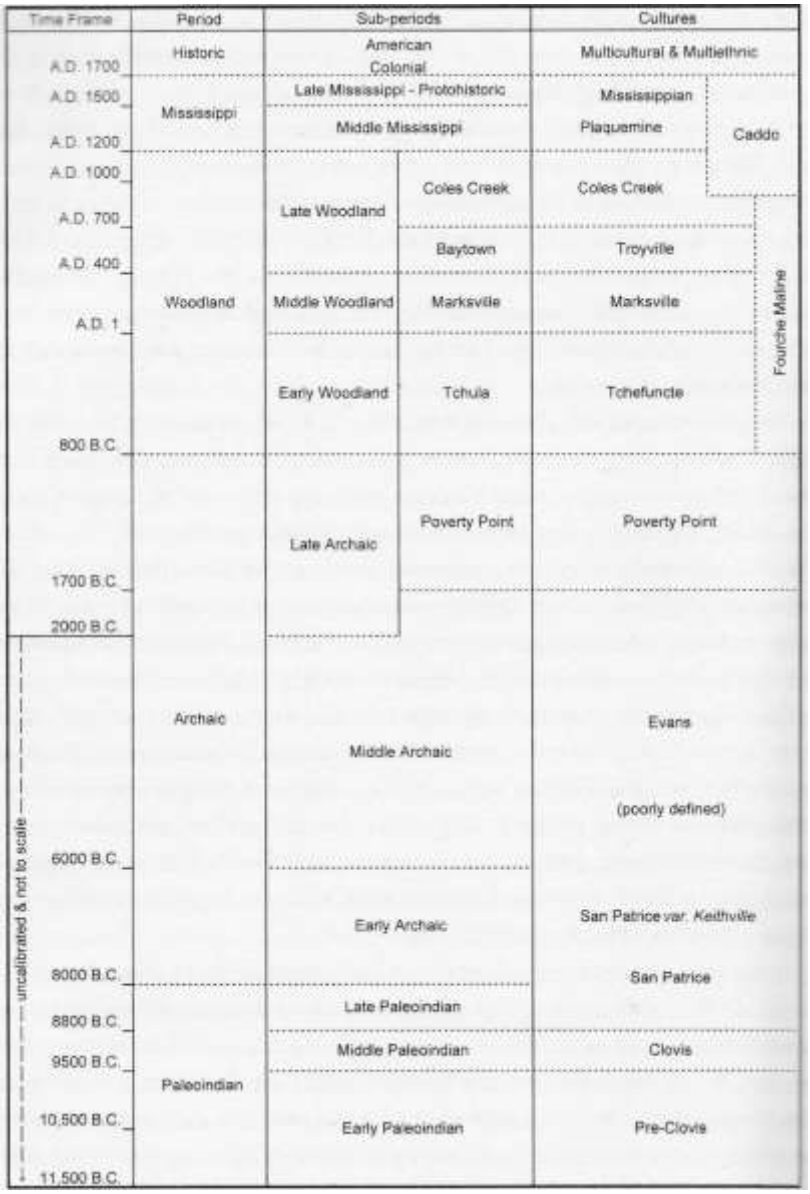

FIGURE 2 – CULTURAL CHRONOLOGY FOR COASTAL LOUISIANA (FROM REES 2010).

The Middle Archaic is poorly represented in south Louisiana. Weinstein and Kelley (1992:30–31) suggest that components of the Banana Bayou phase, derived from the Banana Bayou site (16IB24) on Avery Island, will be identified in this area in the future. The mound at this site yielded Williams and Pontchartrain points, crude bifaces, lithic debitage and a fairly large number of baked clay objects (Brown and Lambert-Brown 1978). Another site of some importance is 16IB101, which is located on the edge of the Prairie Terrace, overlooking the Teche channel, just south of New Iberia. This site contains a Middle Archaic component and may represent an elevated habitation locale associated with the active Teche-Mississippi (Weinstein and Kelley 1992:33).

The Late Archaic subperiod (3000–1500 B.C.) was a time of pronounced population increase and the development of extensive trade networks. Increasing evidence shows that this was also a time of mound building throughout Louisiana and probably the Southeast as a whole (Russo 1994a, b; Piatek 1994; Saunders et al. 1994). Three geographically distinct phases have been identified for Coastal Louisiana, but only one of these, the Pearl River Phase, is well known (Gagliano and Webb 1970; Weinstein and Kelley 1992:33). The remaining two phases are the Copell phase, derived from a preceramic cemetery on Pecan Island (16VM102) (Collins 1941), while the Bayou Blue Phase comes from a site (16AL1) in Allen Parish (CEI 1977; Gagliano et al. 1982; Weinstein et al. 1977). Typical diagnostic artifacts include Evans, Palmillas, Ensor, Macon, Gary and Pontchartrain points, as well as such ground stone implements as winged atlatl weights and tubular pipes (Weinstein and Kelley 1992:33).

As noted, the only Late Archaic phase so far identified for Southeast Louisiana is the Pearl River phase, suggested by Gagliano on the basis of oyster shell middens associated with early coastal features. Artifacts associated with this phase are Kent, Macon, Hale and Palmillas projectile points, along with certain types of atlatl weights (Gagliano 1963). The Mizell mound Site (16ST126), just west of the West Pearl River, has been identified by Jones and Shuman (1988:136–137) as a possible Archaic location. Other mound sites with better claims are the Hornsby Mound Site (16SH21) in St. Helena Parish (Gibson and Shenkel 1989:10; Manuel 1979, 1987; Saunders 1994a:127); the now destroyed Monte Sano Bayou mounds (16EBR17) (Gibson and Shenkel 1989:8; Saunders 1994a:120); and the LSU Campus Mounds (16EBR6) (Neuman 1992:24), though see Jones (1993) for a criticism of the dates and Homberg (1993) for a rejoinder.

NEOINDIAN PERIOD (1500 B.C.-A.D. 1500)

The Neoindian period saw the introduction of ceramics, the widespread use of cultigens and the importation of the bow-and-arrow. The construction of earthen mounds, while apparently practiced to some extent during the Late Archaic (Gibson 1994; Russo 1994a, b; J. Saunders et al. 1994; R. Saunders 1994a), became more widespread during the Neoindian period and the focus of ceremonial, mortuary and political activity (Neuman 1984). A number of cultures flourished during this time span, as detailed below.

POVERTY POINT CULTURE (1500 B.C.–500 B.C.)

This culture, named for the gigantic semi-circular earthworks in West Carroll Parish (16WC5), was widespread throughout Louisiana, Arkansas and Mississippi. Various investigations have shown it was closely related to similar cultures in Missouri, Tennessee, Alabama and Florida (Neuman 1984:90). The origins of Poverty Point remain obscure, although Neuman suggests that both local adaptation and influences from Mesoamerica were involved (Neuman 1984:91). The material culture of Poverty Point featured baked clay balls (Poverty Point Objects), microlithic and lapidary industries and the construction of earthworks. The presence of pottery is debatable, although Clarence Webb (1982:40–42) discusses a number of cases in which ceramics have been found at Poverty Point sites. Hunting and gathering seem to have been important in Poverty Point times, but whether agriculture was a vital subsistence activity is debated (see Neuman 1984:110–111). Certainly, Webb (1968) sees agriculture as having had an important function at Poverty Point.

Other important Poverty Point sites are Jaketown and Teoc Creek, in Mississippi; the Terral Lewis (16MA16) and the J. W. Copes (16MA36) sites in Madison Parish, Louisiana; the Aaron site (16EC39) in East Carroll Parish; and the Cowpen Slough (16CT147) and Dragline (16CT36) sites in the Tensas Basin. Nearer the project area, a number of small shell middens on the shores of Lake Pontchartrain have shown evidence of Poverty Point traits and suggest seasonal adaptations to marsh environments (Goodwin et al. 1991:9). Writing about these locations, Goodwin et al. (1991:9) cite Gagliano and Saucier (1963) to the effect that:

> Sites located along the western shore exhibit Poverty Point traits exclusively; those along the eastern shore contain both bone tool and microlithic industries... These sites represent two phases of Poverty Point culture: the Bayou Jasmine phase and the Garcia phase. Bayou Jasmine Phase sites are located on the western shore of the lake as well as along natural levee ridges of the Mississjppi River distributaries. Garcia phase sites are located along the eastern shore of Lake Pontchartrain (Goodwin et al. 1991: 9)

The type location for the Garcia Phase is site 160R34. It contained a beach deposit of *Rangia* shells along with midden material. Radiocarbon dates from Bayou Jasmine components cluster in the vicinity of 1470 B.C., while Garcia phase components are about 1,000 years later (Gagliano 1963; Gagliano and Saucier 1963; Goodwin et al. 1991:9).

Another Poverty Point site in the vicinity of the project area is the Claiborne site (22HA501) near the mouth of the Pearl River in Mississippi. This location is only 164 ft (50 m) away from the Cedarland site (22HA506), which thus far has yielded only artifacts dating to a Late Archaic occupation and which has been destroyed (Shuman 2002). Radiocarbon dates and artifacts from Claiborne point to a single component occupation dating from the Poverty Point culture. Other intriguing features of the site were the elevated semicircular midden at the site and a small conical mound that has been leveled during modern times. The artifacts recovered from the site also reflect an extensive trade network that showed connections with the Poverty Point site itself (Bruseth 1991).

TCHEFUNCTE CULTURE (500 B.C.–A.D. 1)

By 500 B.C., Poverty Point culture had begun to decline and the extensive trade network that formed a pivotal part of the culture had withered. For several centuries thereafter, prehistoric society in Louisiana centered on small bands of hunters and gatherers. Kidder has suggested that a period of climatic change resulted in heavy flooding in the lower Mississippi Valley between 1000 B.C. and 500 B.C., rendering much of the area uninhabitable (Kidder 2006; Kidder et al. 2010:141). For Kidder, this flooding helped bring an end to Poverty Point culture, and the Tchufuncte/Tchula people re-inhabited the area after the flooding ended (Kidder 2006).

The successors of Poverty Point culture were the Tchefuncte people, whose name was derived from the site of that name in St. Tammany Parish (16ST1) (Ford and Quimby 1945). This site is in Fontainbleau State Park. Smith et al. (1983:163) have defined this period as being characterized by a simpler way of life, similar to the Late Archaic, but with the introduction of ceramic vessels. The Tchefuncte people, though primarily hunter-gatherers, also apparently possessed horticulture to some degree. There is evidence that they cultivated squash and bottle gourds (Byrd 1974). Also, a wide variety of animals were hunted, including deer, raccoon, ducks, muskrat, otter, bear, gray fox, ocelot and alligator. It seems that crustaceans were not eaten.

The Tchefuncte culture is especially known to archaeologists for its shell middens, heaps of shells from the brackish water clam, *Rangia cuneata.* These clams were evidently eaten, although Byrd has shown that their nutritive value is minimal (Byrd 1977; Neuman 1984:118). The lithic artifact inventory of Tchefuncte people included adzes, drills, hammerstones, knives, scrapers and projectile points. Ground stone artifacts include abraders, atlatl weights, beads, cobble hammerstones, grooved plummets, mortars, and pitted stones. Baked clay objects continued to be made, but in less variety and in fewer numbers than at Poverty Point (Smith et al. 1983:163). Weinstein and Kelley (1992:34–35) suggest that the Tchefuncte people were mound builders, and Kidder et al. (2010) have shown this to be the case. Tchefuncte culture is especially evident in coastal areas, but it is widespread throughout the rest of the state (Kidder et al. 2010). It should be noted that while, for purposes of conciseness, the terminal date for Tchefuncte is presented here as the beginning of the Common Era, there was overlap with the ensuing Marksville period. Neuman (1984:135) writes that some Tchefuncte sites are as late as A.D. 300. There is a suggestion from Site 16ST48 in Mandeville (St. Tammany Parish) that a short-grass intrusion, indicative of a dry period, may have occurred during the waning days of Tchefuncte and the beginning of Marksville times (Brignac et al. 2010).

MARKSVILLE CULTURE (A.D. 1–400)

This culture, named for the type-site in Avoyelles Parish (16AV1), was closely allied to the Hopewell culture of the Ohio and Illinois River valleys. The Marksville people constructed domed earthen mounds in which they buried their dead leaders, usually with funerary offerings (Neuman 1984). Marksville ceramics are finely made, characteristically with broad incised lines and rocker stamping. The raptorial bird design is

a frequent motif. Marksville ceramics are, in fact, often hard to distinguish from those made by Hopewellian peoples, leading to much speculation about the nature of the Marksville-Hopewell interaction. Toth (1988) felt that the main evidence for such an interaction derives from Marksville mortuary practices and the similarity of ceramic types. Other cultural practices, such as subsistence and settlement pattern, may not have been shared by the two groups. It has been speculated that Marksville subsistence was based on hunting and the intensive gathering of wild foods. The evidence for maize agriculture is still weak (Weinstein and Kelley 1992:35).

On the basis of his survey of sites along the Amite River, east of Baton Rouge, two phases of the Marksville culture have been identified for the eastern part of Louisiana: Smithfield and Gunboat Landing (Toth 1988; Weinstein 1974). The Kleinpeter site (16EBR5) in East Baton Rouge Parish, located on a terrace overlooking Bayou Fountain, also contains a significant late Marksville component (Jones et al. 1994). Other significant sites in South Louisiana appear to be the Gibson mounds (16TR5) and Mandalay Plantation (16TR1), both in Terrebonne Parish. Nearer to the current project area, Malcolm Webb (1982) reported a late Marksville component at the Indian Village site (16ST6). Also, recent excavations into a midden near one of the three mounds at the Broussard site (16AN1) in northern Ascension Parish revealed a distinctive Marksville component. Ceramic types such as Marksville Incised, *var. Yokena,* Marksville Incised, *var. Spanish Fort,* and Marksville Stamped, *var. Mabin* showed a distinctive Gunboat Landing phase occupation that probably took place between A.D. 200 and A.D. 400 (Shuman et al. 1995). In 2002, a Louisiana State University graduate student, Benjamin Goodwin, conducted remote sensing at the site as part of his thesis research, but his results were ambiguous (Goodwin 2003).

While the Marksville culture and its Southeastern contemporaries have been associated with the Mississippi alluvial valley, there are also indications that it spread along the Gulf Coast. The Coral Snake Mound site (16SA48) in Sabine Parish was excavated in the early 1960s and presented definite artifactual evidence of some sort of cultural and material contact with the Marksville culture area proper (Woodall 1969). As for the eastern Florida parishes in the immediate vicinity of the project area, there is currently little evidence of a Marksville culture presence.

BAYTOWN PERIOD (A.D. 400-700)

Baytown is perhaps the most problematic period in Louisiana prehistoric culture history. Partly this owes to the manner of its original definition (Gibson 1982; Belmont 1982). But it is also true that the period has been dealt with differently by different authors. Neuman, for instance, places it with Coles Creek, calling the two "Troyville-Coles Creek." Many authors, on the other hand, separate it as a distinct period between Tchefuncte and Coles Creek (Weinstein and Kelley 1992:36–37). Weinstein and Kelley suggest that the development of Baytown in the Lower Mississippi Valley is associated with the appearance of Quafalorma and Woodville painted pottery, along with Mulberry Creek Cordmarked, Salomon Brushed and Alligator Incised ceramics. The attempt to devise phases for South Louisiana has been difficult; for example, the Whitehall Phase, named for a site on the Amite River (16LV19), is the only representative site of this phase (Weinstein and Kelley 1992:36).

Baytown components have been found at several locations in South Louisiana, however. These include 16EBR5, 16EBR51, 16EBR67, as well as the Gibson Mounds (16TR5), investigated by Weinstein et al. (1978). There is also Richeau Field (16TR82), a low mound on the Teche-Mississippi natural levee just southwest of Gibson (Weinstein et al. 1978). A Baytown (Troyville) component has been reported by Malcolm Webb (1982) from the Indian Village site (16ST6), which was corroborated by Jones and Shuman (1988:144–150). Excavations at the Shadows Mound (16ST125) by members of the Louisiana Archaeological Society suggested that the mound was Coles Creek in date and had been built in a single construction episode (Jones and Shuman 1988). R. Saunders (1994b) suggests that at least one of the mounds at the Hoover site (16TA5) may date from this time.

COLES CREEK CULTURE (A.D. 700–1200)

The Coles Creek culture represents a cultural florescence in the Lower Mississippi Valley. The settlement pattern involved hamlets and small villages, many centered around one or more pyramidal earthen mounds. These mounds served as platforms for temples and the houses of leaders, although some also contained burials (Ford 1951). Coles Creek culture was widespread in Louisiana and Mississippi and appears to have been related to the very similar Weeden Island culture of northwest Florida (Weinstein and Kelley 1992:37).

The economic basis of Coles Creek society is not clear. It has been widely assumed that maize was important to these people (e.g., Smith et al. 1983:182), but it has been impossible to demonstrate this due to a lack of *Zea mays* in securely dated Coles Creek contexts (Weinstein and Kelley 1992:37). Ceramic decoration in Coles Creek time centered around incised, stamped and punctated designs that usually were restricted to a band around the rim of the vessel (Neuman 1984:186). The frequency and amount of Coles Creek pottery types in the Lower Mississippi Valley suggest that this time was a period of cultural florescence and population growth.

South Louisiana contains an abundance of Coles Creek sites, several of which have been at least partially excavated: 16IV6, 16VM9, 16AS35, 16SMY1 and 16EBR5. From this, several temporally distinct phases have been developed for eastern Louisiana. These are the Bayou Cutler (ca. A.D. 700–900), Bayou Ramos (ca. A.D. 900–1000) and St. Gabriel (ca. A.D. 1000–1200) phases (Jones et al. 1994). Bayou Cutler derives from the work of Kniffen (1938) and was refined by Phillips (1970), who utilized data on 74 sites in the lower reaches of the Lower Mississippi Valley. The Bayou Ramos phase was developed by Weinstein in St. Mary Parish at Bayou Ramos I (16SMY133) (Weinstein and Kelley 1992). And the St. Gabriel Phase was defined at a site in Iberville Parish (16IV128) excavated by Woodiel (1993). A major site with a St. Gabriel component is the Kleinpeter site (16EBR5) in East Baton Rouge Parish (Jones et al. 1994).

Nearer the current project area, a significant Coles Creek component is present at the Hoover site (16TA5) in Tangipahoa Parish (Saunders 1994b). Also, near the north shore of Lake Pontchartrain, excavations at the Shadows Mound (16ST125) by members of the Louisiana Archaeological Society suggested that the mound was Coles Creek in date and had been built in a single construction episode (Jones and Shuman 1988).

MISSISSIPPI PERIOD (A.D. 1200–1700)

The Mississippi period in the Southeastern United States was a time when cultural influences from the Central Mississippi Valley increasingly influenced the indigenous cultures of the region. This is reflected in Louisiana by the Plaquemine culture, an outgrowth of the preceding Coles Creek, and the Mississippian culture proper. The latter is represented by large complexes of truncated earthen pyramids and the use of shell temper in ceramics, as well as distinctive ceramic forms such as effigy vessels. Mississippian culture sites were often fortified (Stoltman 1978:725). During this period, social and political organization appears to have centered on a chiefdom and subsistence was based on the cultigen triad of maize, beans and squash. Mississippian influence seems to have radiated from the Cahokia mounds group in Illinois, with its influence eventually extending both down the Mississippi River and along the Gulf Coast. In Louisiana, Plaquemine culture is represented at such sites as the Medora site (16WBR1), the Kleinpeter site (16EBR5), the Bayou Goula site (16IV11), Pritchards Landing (16CT14), the Fitzhugh site (16MA1) and many others (Smith et al. 1983:197; Jones et al. 1994). It is worth noting that the concept of Plaquemine has been unclear at times and has been frequently redefined (Rees and Livingood 2007:2-3).

The nature of the relationship between Plaquemine and Mississippian culture is as yet unclear. For example, Phillips (1970) considered Plaquemine culture to have been evolved by about A.D. 1000 and thereafter steadily influenced by the Mississippians until about A.D. 1400, when Mississippian groups actually displaced the indigenous Plaquemine peoples. Brain (1978), however, would place Coles Creek as lasting until approximately A.D. 1200, when it was influenced so heavily by Mississippian culture that it evolved into Plaquemine, which in his view is a hybrid.

On the basis of information developed largely from ceramic analyses, three regional phases have been suggested for early Plaquemine culture in southern Louisiana. The first was the Medora Phase (A.D. 1200 to A.D. 1500), based on the work of Quimby (1951) at the Medora site (16WBR1) in West Baton Rouge Parish. The second was the Barataria Phase, based largely on work at the Fleming site (16JE36) (Holley and DeMarcay 1977), and the third was Burk Hill, which derives from the work of Brown (1982) at the Burk Hill site (16IB100) on Cote Blanche Island. The Medora phase applies to the region of the current project. It was also during early Plaquemine times that material relating to the "Southern Cult" appeared. This term is used to denote a complex of traits that first appears around A. D. 1000 and reaches its zenith about A.D. 1500. This complex is associated especially with Mississippian culture proper, but it crossed cultural boundaries in the eastern United States (Neuman 1984:276). The complex focuses on an art style involving certain specific motifs, such as the cross, the sun, a bilobed arrow, the circle, the forked eye, the open eye, the barred oval, the hand and eye, and death motifs (Neuman 1984:277).

The extent of Plaquemine culture and the nature of the Mississippi period in the Florida Parishes are currently poorly understood, although there are several sites that show the definite presence of Plaquemine and Mississippian culture traits. Perhaps the closest major Plaquemine site to the study area is the Hoover site (16TA5) in Tangipahoa Parish. This location originally consisted of five mounds and probably reached its peak in Plaquemine times, although there may be a Marksville component as well (Jones and Shuman 1988).

CHAPTER FOUR:
HISTORY OF THE PROJECT AREA

EARLY EUROPEAN EXPLORATION OF LOUISIANA

European explorers, lured by prospects of gold, began venturing into the southeastern United States within decades of Columbus' arrival in the New World. The first to actually touch what is now Louisiana were most likely members of a mapping party under contract to Spain. In 1519, Alonso Alvarez Pineda arranged to map the entire coast of the Gulf of Mexico. His expedition sailed past the Louisiana shores and at one point camped at the mouth of a massive river, a waterway Pineda named The River of Palms. Today, some dispute exists as to whether this was the Mobile River, the Rio Grande, or the Mississippi. Another Spaniard, Alvar Nunez Cabeza de Vaca, a member of the ill-fated Panfilo de Narvaez expedition, sailed along the coast of Louisiana in 1527 on his way to Texas but did not travel into the interior (Louisiana Works Progress Administration 1941:37–43; Wall 1990:11).

Initial exploration of the interior was conducted about 15 years later. In 1541, a party under Hernando de Soto began an ambitious effort to explore North America. Landing at Florida, De Soto and his men explored the modern southeastern United States, and eventually penetrated as far inland as Arkansas. After De Soto's death, his men eventually traveled down the Mississippi River to the Gulf of Mexico, claiming the passing land, including West Feliciana, for Spain. However, as no Spanish settlers moved to occupy Louisiana, this early claim was tenuous at best (Louisiana Works Progress Administration 1941:37–43).

During the seventeenth century, the French, having heard of a large river lying west of the Great Lakes, began scouting major waterways in North America for a passage to the Pacific Ocean. Robert Cavelier, Sieur de La Salle, traveled down the Mississippi River from the Great Lakes region in 1682, a voyage of approximately two months. Landing south of modern New Orleans in April, he held a formal ceremony in which he claimed all lands drained by the river for France, and named Louisiana in honor of French King Louis XLV (Wall 1990:15–17).

The French proved more successful in maintaining their claim to Louisiana than the Spanish, for they began serious efforts to explore Louisiana's lands and rivers within a few decades of La Salle's voyage. As early as 1699, Pierre Le Moyne, Sieur d'Iberville, led an expedition up the Mississippi River, going as far as Pointe Coupee. Iberville encountered a number of Indian tribes and learned of another access to the Mississippi River from the Bayogoulas. This passage bypassed the long and winding course to the Gulf by following Bayou Manchac, a Mississippi River distributary, eastward to Lake Maurepas and then through Pass Manchac to Lake Pontchartrain. Iberville took this new route when he returned to the Gulf. Reporting back to his camp at Biloxi, he noted that the new route had saved him several days but still required many portages (Wall 1990:15–17; McWilliams 1981:25, 64–81).

Iberville had grand plans for the colonization of Louisiana. He hoped that one day its settlements would link up with those in Canada, thus giving the French control over the central part of North America and its network of rivers. Initial attempts to colonize, however, were slow and sporadic. Because of problems in farming and the difficulties of recruiting people to settle across the Atlantic, Louisiana's population at first grew slowly. Prior to 1710, there were only a few hundred European inhabitants. In the

region of West Feliciana, a small group of Frenchmen described as “stragglers” camped among the natives in 1712, but serious colonization attempts were stalled until a decade later (Wall 1990:2223; Butler 1924:93).

EUROPEAN EXPLORATION AND SETTLEMENT OF WEST FELICIANA

Eventually, settlement was accomplished as part of a larger effort by the French. France recognized the potential of Louisiana and established settlements along the Mississippi, Red, and Ouachita rivers during the early fifteenth century in order to maintain their claim to the territory and to keep the British out. In 1712, in order to populate and protect their claim, the French government contracted with Antoine Crozat to establish trade and colonize Louisiana. A similar agreement was drawn up with John Law in 1717, under which his Company of the West was able to offer land grants to willing settlers. Under these auspices, New Orleans was founded in 1718, a fort at Baton Rouge was established in 1722, and the Felicianas were included in a large land grant. In 1729, settlement began near a small fort, “St. Reyne aux Tonicas” (Fort St. Reine), which was probably near the modern site of St. Francisville. This settlement was short-lived and has not been relocated precisely. However, it was described as being between Natchez and New Orleans, in the vicinity of the Tunica. The Tunica, at the time, were living at the bluffs near present-day Angola Penitentiary (Wall 1990:36–38; Butler 1924:93).

Still, West Feliciana settlement continued to languish for several decades. Prior to the l770s, the only other European activity in the area came from French Capuchin friars who established a chapel across the Mississippi River in what is now Pointe Coupee Parish. By 1738, regular flooding forced them to place their cemetery across the river near the site of Fort St. Reine. In the 1770s, under the jurisdiction of the Bishop of Santiago de Cuba, Spanish Capuchin friars moved to the area that is now St. Francisville in West Feliciana Parish and built a monastery and a cemetery. The name St. Francisville derives from their occupation (Butler 1924:92–93).

By 1740, the French presence extended along most of the navigable waterways in Louisiana, but political events in Europe changed the course of settlement. In 1762, France, on the verge of defeat in its war with Great Britain, ceded all of Louisiana to Spain under the Treaty of Fountainebleau. But in 1763, through the Treaty of Paris, Spain relinquished to Great Britain the territory of West Florida in exchange for Havana. West Florida included the land east of the Mississippi River and west of the Apalachicola River, but north of Bayou Manchac and Lakes Maurepas and Pontchartrain. The British immediately began their own colonization efforts by conferring land grants to British officers and soldiers. The amounts of land varied according to military rank. Captains, for example, received 3,000 acres (ac), privates as little as 50 ac. West Feliciana began to take on a new character as it drew increasing numbers of Spanish and English landowners (Williamson and Goodman 1939:9–28; Louisiana Works Progress Administration 1941:3143; Arthur 1935:12–15; Johnson 1933:548).

During this period, relations with the Indians were problematical. The French established trade relations with both the Tunica and Natchez, but with the increase in numbers of white settlers, friction between the whites and Indians grew. In 1729, this led to an uprising by the Natchez, which caused the destruction of the French post at Fort Rosalie (Natchez). The French governor, Perrier, responded in force, pursuing the Natchez across the Mississippi River and defeating them in the vicinity of Sicily Island, in

January 1731. Remnants of this disaster were further beaten at St. Denis, near Natchitoches (Swanton 1979:159–60). In April 1731, the Natchez, perceiving that the Tunicas had sided with the French, attacked and dispersed the latter. Thereafter, the Indian influence in West Feliciana diminished to where it was virtually nonexistent by the end of the century.

In 1779, Spain declared war against Great Britain, effectively entering the American Revolution on the side of the colonists. Spain continued to control both the mouth of the Mississippi River and New Orleans, which were of great strategic importance. Spain also recaptured West Florida, prized for its strategic location between Natchez and New Orleans, and Governor Bernardo de Galvez promptly began offering land to those loyal to the Spanish crown. The Spanish were to have a lasting effect on the area. Galvez named the area Feliciana for his Creole wife, and under Spanish stewardship, settlers laid the groundwork for future plantation development. Recognizing the agricultural value of Louisiana, Spanish law mandated that landowners clear areas for farming and build and maintain levees. Today, U.S. Highway 61 north of St. Francisville runs directly through areas originally distributed by the Spanish, including the lands currently occupied by the Cottage Plantation, Laurel Hill, and Greenwood (Arthur 1935:12-15).

THE WEST FLORIDA REBELLION

The Spanish reign over West Florida proved to be short-lived. In 1800, the Treaty of San Ildefonso returned most of Louisiana to France, and, in 1803, France sold Louisiana to the United States. Although Spain retained control over West Florida, the United States and Great Britain disputed that claim to ownership (Butler 1924:94–99; Padgett 1938:1–3).

After several years of disagreement, West Florida's residents took matters into their own hands. In 1810, led by John Rhea, John H. Johnson, and William Barrow, they engineered a rebellion, cast off Spanish rule, and established the Free and Independent Republic of West Florida. For 14 days, the modern Florida parishes existed as a tiny nation, complete with a constitution and a national flag (blue, with a single white star). Fulwar Skipwith was elected governor and St. Francisville was named the capital, although the capital was later moved to Baton Rouge (Reeves 1967:ix; Butler 1924:94–99; Padgett 1938:1–3). Later that same year, the United States claimed and took possession of West Florida, which it held illegally until the Adams-Onis Treaty in 1819 awarded all of Florida to the United States.

LOUISIANA UNDER AMERICAN CONTROL

Having purchased Louisiana in 1803, American President Thomas Jefferson recognized the need to scientifically explore the lands west of the Mississippi River. In the interest of exploration, settlement and natural science, Jefferson sent two expeditions into Louisiana to report on the natural flora, fauna and physical geography of the Red and Ouachita rivers. Having sent his best naturalist-explorers on the Lewis and Clark expedition, Jefferson initially relied on his West Florida friend William Dunbar to lead a short expedition in Louisiana; Dunbar was familiar with the Mississippi River area, having established plantations near Natchez and Baton Rouge in the late eighteenth century. In the fall and winter of 1804–1805, Dunbar

and Dr. George Hunter went up the Red and Ouachita rivers, but the following year a larger expedition took up the project (Flores 1984:3–45, 99).

Louisiana's capital was originally New Orleans, but voters preferred a different location. In 1825, Donaldsonville, the seat of Ascension Parish was made the capital, although it was not until 1830 that the legislature actually transferred to Donaldsonville, and they quickly moved back to the more exciting New Orleans. Baton Rouge became the state capital in 1846. The seat of state government moved around during the Civil War but was returned to Baton Rouge in 1879 (Wall 1990:125–126).

WEST FELICIANA PARISH

Louisiana was admitted to the Union in 1812, although the Florida Parishes (those that were the part of West Florida west of the Pearl River) were not added to the state for several months and remained in dispute until 1819 (Wall 1990:102–108). In 1824, after annexation, West Florida was carved into several parishes, including East and West Feliciana (Reeves 1967:ix; Butler 1924:94-99; Padgett 1938:1-3).

The seat of Feliciana Parish was originally St. Francisville but was later moved to Jackson. In 1824, the parish was split into two parishes: East Feliciana and West Feliciana, and St. Francisville became the governmental seat for West Feliciana (Hamilton 1983:9, 13; Bersuder 1952:3–4; Miller 1987:2). The town of Bayou Sara developed adjacent to the Mississippi River along the bayou of the same name, just below the bluffs where the Capuchin friars had established a monastery and where a British surveyor had marked the long-abandoned Fort St. Reine in 1765. Originally founded as a trading post by John H. Mills and Christopher Strong Stewart in 1790, Bayou Sara flourished as a port town. The town once served as the largest river port between Memphis and New Orleans. Several fires during the first half of the nineteenth century only temporarily set back growth and trade in Bayou Sara, but frequent flooding also plagued the town. Eventually, St. Francisville eclipsed Bayou Sara as the center of commerce and trade, and the town of Bayou Sara was unincorporated in 1926 (Hamilton 1983:1–8; Louisiana Works Progress Administration 1941:464).

St. Francisville was established along a bluff above Bayou Sara and the Mississippi River. John H. Johnson laid out the town in the early 1800s on John Mills' 1787 Spanish land grant, and lots were first sold in 1801. The community erected a hotel, which also served as a legislative chamber for the Republic of West Florida. By 1811, the town boasted its own newspaper and even sent a war correspondent to cover the War of 1812.

As part of the United States, West Feliciana Parish emerged as a productive agricultural region. At first, considerable confusion over the status of land claims had to be resolved. Land claims based on British, French, or Spanish grants caused problems. In 1819, Louisiana landowners placed over 10,000 claims with the United States government, forcing Congress to spend a substantial amount of time enacting laws and procedures to deal with the changeover. Sorting through Spanish, British, and French land grants, through unofficial claims, and through frauds perpetrated by speculators, United States officials decided to nullify all West Florida grants made before 1804. As a result, in state land records a number of parish titles date only to 1819. Louisiana would struggle with the issue of Colonial era land grants until 1879 (Coles 1955:1–19).

West Feliciana developed into one of the wealthiest areas of the Antebellum South, becoming a region complete with large plantations, an educated aristocracy, gracious homes, high levels of production and commerce, and, of course, slave labor. Much of the plantation development took place in the central part of the parish, north of modern St. Francisville. Land along the Mississippi River, though fertile, was judged less desirable for habitation, with only three large plantations, Greenwood, Como and Angola, located on the Mississippi River (Frazier 1969:xii).

The initial cash crop was cotton, introduced in the 1700s, although after 1840, sugar production increased and cotton declined. After 1840, planters also grew a variety of crops for local consumption. In 1850, over 360,000 bushels of corn were produced by parish plantations, 8,000 pounds of rice, and 400,000 gallons of molasses. Lands not being farmed were home to about $400,000 worth of cattle, horses, hogs, work oxen, sheep, and mules (Davis 1943:7). In addition, some plantations featured groves of fruit trees and greenhouses for the production of tropical vegetation.

With high levels of cultivation, large plantations, and the Mississippi River in close proximity, the parish was as commercial as it was agricultural. Indeed, many of its plantations resembled self-contained businesses, complete with their own production and transportation systems, labor force, business hierarchy, and diversification of production. Lewis Stirling's "Wakefield," for example, produced both sugar and cotton, and also maintained a sugar house, a carriage house, 70 horses and mules, and its own fleet of seven wagons (Stirling Family Papers n.d.). Similarly, at nearby Highland Plantation, there were steam-driven cotton gins and sawmills and mechanical thrashers designed to separate foreign matter from cotton. Highland owner Bennett Barrow was an adroit business manager, securing loans to keep his operation running, buying and selling land, keeping track of the latest price trends, and upgrading his production mechanisms as necessary (Davis 1943:34–35).

An integral aspect of the antebellum plantation economy was the institution of slavery. The first slaves in West Feliciana were apparently imported from North Carolina in 1800, and by 1820 slaves comprised about 56 percent of the total population. In the 1850s, there were four times as many slaves as whites in West Feliciana Parish, and, according to one historian, two slaveholders "owned more than 500 slaves; five owned between 200 and 500; and thirty-one owned over 100" (Frazier l969:7–9).

The West Feliciana slave regime was in many ways similar to others around the South. Planters used white overseers and black drivers to control the population. Lewis Stirling paid his overseer about $750 a year (Stirling Family Papers n.d.). Slaves were housed on the plantation, given medical treatment as needed and assigned a variety of tasks, such as chopping cotton, timbering and draining fields. They were generally provided time off on Sundays and at Christmas and given a nutritious, if redundant, diet. As private property, however, they were bought, sold, clothed, fed and named according to the whim of the master, and could be beaten and even killed without recourse. Bennett Barrow, master of Highland, mentioned purchasing Virginia slaves, an activity that no doubt took some African-Americans from their homes and families, and then wrote that "small boys and girls [from Virginia] may do, but grown ones are not worth as much…one creole will pick as much as two of them" (Davis 1943:39). Barrow also committed acts of brutality. He particularly disliked having his slaves run away, and on one occasion wrote that he gave "Boy Lewis…the worst Whipping I ever gave a young negro. I predict he will not runaway soon." (Davis 1943:165).

PARISH TRANSPORTATION AND THE WEST FELICIANA RAILROAD

Bayou Sara and St. Francisville were linked to the parish through an extensive network of roads, some of which served to determine property lines in antebellum land transactions. After 1829, the parish government provided for extensive improvements, including the creation of ferry lines, bridges and road systems (Davis 1943:8). Stage lines ran across the parish to Woodville and Natchez, in Mississippi, to Jackson and Clinton, in East Feliciana Parish, and south to Baton Rouge.

Because West Feliciana roads were often muddy and slow, parish residents began to talk seriously of a rail line in 1830. On March 25, 1831, they obtained a state charter for the West Feliciana Railroad, intended to run from the Mississippi River, along the "most practicable route" to Woodville, Mississippi (Dart 1984:35). Such a line would also provide Woodville planters with the advantage of a fast overland route to the Mississippi River, for the shipping of their cotton (Reeves 1967:vii; Bersuder 1952:7–8).

Construction began in 1831 but soon encountered a variety of difficulties. Crews had difficulty digging through the West Feliciana soil. In 1836, the steamboat *Choctaw,* carrying 3,100 bars of English iron imported specifically for the line, sank to the bottom of the Mississippi River. Planters, though generally agreeable to the project, nonetheless made a number of demands on the contractor. Ruffin Stirling, for example, insisted that the railroad make and maintain two wagon crossings as it passed through his plantation, the Myrtles (Dart 1984:48). Others worried about the interaction of railroad and livestock, forcing the railroad to design a new form of track protector—the pit cattle guard—to allay their concerns (Dart 1984:48). Once in operation, the railroad was expensive, slow, and ran on an unpredictable schedule. A number of area planters, including Bennett Barrow, seemed to have ignored it completely. Still, it has some historic significance. According to Elizabeth Kilbourne Dart, it remained the "oldest standard-gauge line in the nation until it was abandoned in 1978" (Dart 1984:29). Much of it roughly paralleled the modern course of U.S. Highway 61.

THE CIVIL WAR

The Civil War brought an end to the plantation culture of the antebellum era. In West Feliciana, the conflict curtailed shipping, reduced manpower, and brought a major battle to within close proximity of the region. The town of Port Hudson, a site targeted by both Union and Confederate forces due to its tremendous strategic value, lay just across the southern boundary of West Feliciana Parish. The terminus of a railroad that linked the Mississippi River with Clinton, Louisiana, it provided access to the Louisiana interior. Port Hudson also lay on the Mississippi, south of the mouth of the Red River, and thus could exert some control over travel on several waterways.

Recognizing Port Hudson's importance, the Union sent Admiral David G. Farragut and General Nathaniel P. Banks to blockade Port Hudson and starve out its garrison. Banks and the Union army assaulted Port Hudson from May to July of 1863. The vastly outnumbered Confederate soldiers, under the command of General Franklin Gardner, held back Union soldiers for almost two months and surrendered only after the fall of Vicksburg. According to historian Lawrence Hewitt, one of the most significant features of the

battle was the first use of black soldiers in combat for the Union cause, which led to the eventual enlistment of nearly 180,000 black soldiers into the Union Army (Hewitt l987:x–xiv; Spedale 1986:xv)

During the war, Union troops also marched through West Feliciana, stealing, burning, and confiscating plantation homes for their officers. Some of the destruction was carried out in proximity to areas within the proposed project. For example, troops marched past Afton Villa plantation but spared it from destruction after they mistook its ornate gates for those of a cemetery (Seebold 1971:269). Nearby Catalpa Plantation was not so fortunate. Catalpa was renowned for its gardens, with pink conch shells lining its walks and glass greenhouses that sheltered a variety of tropical plants. Passing soldiers smashed the shells, destroyed the greenhouses and tore down fences, allowing livestock to roam freely (Seebold 1971:287; Hamilton 1983:23).

POSTBELLUM AND MODERN WEST FELICIANA

By war's end, much of the wealth and productivity of West Feliciana had melted away. Planters, accustomed to carrying a certain amount of debt before the war, found themselves in extreme economic hardship as the Confederate economy collapsed and defeat rendered its money worthless. Land values plummeted, undermined by wartime damage to fields, crops, and levees. Some Louisiana plantations were sold for less than a third of their value. Historian Roger Shugg paints a dreary picture of postwar Louisiana, a picture that might easily describe areas of West Feliciana. "Almost everywhere," he said, "the countryside was a scene of desolation. Many plantation houses had been burned, and all were shabby and in disrepair…the fences had tumbled down; wagons and plows stood rusting in the rain" (Shugg 1939:193). Keeping with patterns historians commonly associate with the New South, planters and their descendants divided their plantations into lots, sold them off piecemeal to both black and white purchasers, and found new vocations for themselves as farmers or as storekeepers, merchants or entrepreneurs.

By the end of the nineteenth century, the West Feliciana economy had further declined due, in the words of one author, to "the boll weevil, lack of cheap labor and soil depletion from too many years of one-crop agriculture" (Hamilton 1983:3). Bayou Sara, though still busy after the war, declined along with the production of cotton. In the early l900s, after repeated floods and fires, its residents relocated to St. Francisville, in some cases dragging their houses and stores up to the bluffs. Today, all that remains of this port is the landing (Hamilton 1983:8).

West Feliciana Parish today thrives on a mixed economy. Many of the lands once involved in cotton production now produce a variety of crops or are home to large herds of livestock. Many surviving plantation homes draw a large number of tourists yearly, while residents have also benefited from occasional gas and oil explorations, from the expansion of Angola prison, and from the construction of the Riverbend nuclear power plant (Miller 1987:2). West Feliciana also increasingly draws residents from other parishes as citizens seek to escape the noise and bustle of urban life (Hamilton 1983:5). When the twentieth century ended, the parish boasted 15,111 inhabitants, up 17 percent from the 12,915 recorded in 1990 (Calhoun 2008:199). By 2006, the A.D. 2000 number was estimated to have increased by 424 persons (Calhoun 2008:199).

CHAPTER FIVE:
PREVIOUS INVESTIGATIONS

EARLY INVESTIGATIONS

The first known archaeological work in West Feliciana Parish was an 1896 investigation of the Riddle Mounds (16WF4) by George Beyer. Beyer, a Tulane zoologist, made an idealized site map and conducted an excavation into the largest of the five mounds. He found a human burial and an Indian pipe. Because the individual Beyer exhumed had two bullet wounds in the head, it was clear that this burial was intrusive. Beyer also excavated a second mound at the Riddle site but recovered no bones or artifacts (Beyer 1896).

Following Beyer, C. B. Moore made a reconnaissance down the Mississippi River in his steamboat, the *Gopher* (Moore 1911). In the course of his trip, he stopped at Trudeau Landing (16WF25), on the east bank of the river, just below the town of Tunica. There he found midden debris but no burials. He dismissed this site, causing him to bypass a portion of what would become one of the most famous archaeological sites in the state (Neuman 1984:287, and below).

ACADEMIC AND GRANT FUNDED INVESTIGATIONS

While Beyer was the first University-based investigator to conduct an archaeological study in West Feliciana Parish, such investigations did not become common until well into the present century. In 1936, James A. Ford visited the area near Louisiana State Penitentiary at Angola after the construction of Highway 66 and reported two mounds (16WF1) less than a mile south of the prison gates. He made a small collection from the site, consisting of prehistoric potsherds and historic materials (Jones and Shuman 1986:106–107). In the same year, Ford was called to the Angola Farm Site (16WF2) by prison authorities. There, he excavated 10 human burials, four of which were associated with flintlock muskets, lead powder, black powder and gunflints. In addition, the burials contained European trade beads, copper kettles and three aboriginal vessels. Ford concluded that these were burials of historic Tunica Indians (Ford 1936; Neuman 1984:284–285).

Four decades later, additional burials were found at Bloodhound Hill (16WF21), also within the prison. Robert W. Neuman and William G. Haag, of Louisiana State University, were called to the site and ascertained that a more detailed investigation was in order. Accordingly, Jeffrey P. Brain of Harvard University was invited to carry out excavations, which began in the spring of 1977. His work confirmed that the burials were, once more, early historic Tunica. Near the burial sites was a midden of more than 200 m^2 (656.16 ft^2) in surface area (Brain 1979a; Neuman 1984:285–287).

The most spectacular discovery associated with the Tunica, however, was the finding of the so-called Tunica Treasure. The name derives from a number of early-historic Tunica burials that were unearthed at the Trudeau Landing site (16WF25) over a period of years in the 1960s by Leonard Charrier. These burials were accompanied by European trade goods, including kettles, weapons, beads, gunflints and ceramics. Most of the items dated to between 1720 and 1740 (Neuman 1984:288). Unfortunately, the burials were excavated in a nonscientific manner and much information was lost. Nevertheless, the artifacts themselves were of considerable scientific and aesthetic value and academic archaeologists who were consulted by the original discoverer soon became convinced that the collection deserved analysis and protection. The Tunica-Biloxi tribe also became interested in the materials and years of litigation for ownership ensued. The result was that the treasure finally came to rest in the Tunica-Biloxi museum at Marksville, Louisiana.

In 1972, Jeffrey P. Brain carried out additional excavations at Trudeau. While much of the area had been looted, he was able to excavate three refuse pits and a midden with European and native materials. He also located and excavated an adult Tunica burial (Brain 1973). A full account of the Tunica Treasure saga appeared in Brain's 1979 work, *Tunica Treasure* (Brain 1979b). In 1981, Brain returned to Trudeau to investigate anomalies that had been detected by a subsurface radar survey of the area. While the radar did not turn out to be as useful as had been hoped, new data about the culture history and physical structure of Trudeau were obtained (Brain 1982).

In other academic-based work, in 1986, Jones and Shuman began a multi-year project to record Indian mounds in the state of Louisiana. They began with a study of the mounds in East Baton Rouge and East and West Feliciana parishes. In the latter parish, they visited and mapped sites 16WF1, 16WF4, 16WF7 and 16WF27. They found 16WF1 (Angola Mounds) to have been severely damaged by railroad and highway construction. At the Riddle Mound site (16WF4), only one of the five mounds originally reported by Beyer remained, but its morphology closely matched the drawing that Beyer made in 1896. The Noland Mound (16WF7) was found to be in excellent condition. While conical in morphology and therefore possibly related to the Marksville culture, there was a nearby Troyville-Coles Creek-era midden. The Solitude Mound (I6WF27), which had been tested by Toth in 1978 (Jones and Shuman 1986:28), was found to still be intact, and material was collected from the midden just to the north. This material dated to the Troyville-Coles Creek and Plaquemine periods. At the Bayou Sara Mound site (16WF15), Jones and Shuman were denied access by the landowner (Jones and Shuman 1986). In the same year, finally, Shuman and Jones carried out a survey of property south of St. Francisville for the land owner, on what had been Forest Plantation, and located a slave and/or tenant cemetery (Shuman and Jones 1986).

CONTRACT ARCHAEOLOGY

Archaeological investigations have become frequent in West Feliciana Parish as the result of the passage of the National Historic Preservation Act of 1966. The first contract investigation recorded for West Feliciana was in 1972. Robert W. Neuman conducted a cultural resources survey for Gulf States Utilities Company in connection with their planned nuclear power plant just south of St. Francisville. His investigation included the coring of a promontory that he thought might have been an Indian mound. The coring operation, however, indicated the structure to be natural (Neuman 1972). Six years later, Neuman performed a survey for a transmission line leading from the nuclear plant. In the course of this work, he

recorded five Civil War earthworks associated with the Port Hudson battlefield, one historic cemetery and two prehistoric sites. The two prehistoric sites were recommended for testing and the earthworks were recommended for monitoring (Neuman 1978a). A similar survey in the portion of West Feliciana Parish on the west side of the Mississippi River found no sites (Neuman 1978b). Another study associated with the nuclear facility was conducted in 1984 by Shuman and Orser, who examined the remains of a nineteenth-century sugar mill on plant property and concluded that the site was too damaged to be eligible for the National Register (Shuman and Orser 1984).

A 1985 survey by Coastal Environments, Inc. was conducted of a subdivision to be built just north of St. Francisville. Their work revealed the presence of an extensive prehistoric midden (16WF48) as well as an area of nineteenth-century historic occupation (16WF49) (deFrance and Castille 1985). A subsequent testing project by Shuman and Jones (1985) showed that the prehistoric site (16WF48) had been badly disturbed by previous development. There were no intact features associated with the historic site (16WF49). Consequently, these two properties were considered to be ineligible for the National Register of Historic Places (Shuman and Jones 1985).

Other contract investigations involved an overview of cultural resources along the Mississippi River by the National Park Service (Greene et at. 1983), pipeline surveys (Gagliano et al. 1976; Heartfield, Price and Greene 1981; New World Research, Inc. 1984; Phillips et al. 1984); surveys for energy developments (VandenBosch et al. 2001); and levee surveys for the Corps of Engineers (Shenkel 1977; Stuart and Greene 1983; Shafer et al. 1984; Kelley 1989; Jones et al. 1993). The Louisiana Department of Transportation and Development has been especially active in this area, initially dealing with bridge replacements (Rivet 1977), but also encompassing such projects as the construction of a visitors center a mile south of the state line, on Highway 61. In connection with the latter project, Rivet (n.d.) reported a small archaeological site (16WF40) that consisted of prehistoric ceramics, lithics, and historic glass. The site is on the west side of Highway 61, behind the Visitors Center. In 1994, Coastal Environments, Inc. (CEI) carried out a survey of the expansion corridor of Highway 61, from Thompson's Creek to Bains for the Department of Transportation and Development (DOTD) (Hahn et al. 1996b). A total of 20 archaeological sites and 41 standing structures were recorded, and archaeological testing was conducted at one archaeological site, 16WF89. This site was determined to be eligible for the National Register of Historic Places. In the same year, CEI surveyed an additional 17.33 acres in connection with this project. Four archaeological sites, six standing structures and two historic roads were examined (Hahn 1996). Only one of these, the Bayou Sara-Baton Rouge Road at Star Hill, is eligible for the National Register of Historic Places. A continuation of this highway survey was conducted by GEC, Inc., which studied the proposed corridor from Bains to the state line. This investigation recorded four archaeological sites and seven standing structures, none of which were considered eligible for the NRHP (Jones et al. 1996). Six years later, CEI conducted testing and data recovery along their earlier US Highway 61 route from Thompson Creek to Bains (Ryan et al. 2002). Finally, CEI conducted a survey for the proposed new St. Francisville Bridge, recording 29 previously unknown archaeological sites and 34 standing structures. Ten sites were judged potentially eligible for the NRHP and 18 standing structures were considered eligible (Hahn et al. 1996a).

A notable recent project, conducted for LaDOTD, was R. Christopher Goodwin and Associates' investigation of the Star Hill sugar refinery (16WF39). This work, which also included monitoring debris removal at 16WF101 (Star Hill Plantation), yielded important information on the industrial aspect of Star Hill Plantation's sugar enterprise (Sanders et al. 2007).

Nor has the northwestern part of the parish been ignored: CEI surveyed 734.5 ha (1,499 ac) at Louisiana State Penitentiary at Angola and reported two sites (16WF121 and 16WF122) as being eligible

for the NRHP (Perrault et al. 1999). Just downriver from the penitentiary, at the Tunica Hills State Preservation Area, SURA, Inc. carried out a survey for Holden and Associates/SJB Group, who were under contract to the Louisiana Office of State Parks. In the 260.1 ha (530.75 ac) surveyed, the archaeologists discovered two sites, 16WF176 and 16WF177. The latter, named the Tunica Bayou site, was considered potentially eligible for the NRHP (Jones and Shuman 2004).

REGIONAL AND STATION ARCHAEOLOGY

Since the establishment of the regional archaeology program by the Louisiana Division of Archaeology, a considerable number of surveys have been conducted in West Feliciana Parish by the regional archaeologist and by a team from the Los Adaes Station Archaeologist in Natchitoches. Their work at Oakley (16WF34) is mentioned below. The regional archaeologist investigated sites 16WF12 and 16WF145 in 1999 and judged that they needed testing (Hays 1999). Other surveys were done in 1995, 1996, 1997 and 1998 (Hays 1995, 1996, 1997, 1998).

OAKLEY PLANTATION (16WF34)

A considerable amount of archaeological research has focused on Oakley Plantation (16WF34), a state property containing Oakley (16WF34), the antebellum home site associated with the naturalist John J. Audubon. Initial work focused on the area of the proposed sign shop (Woodiel 1980) and the area to be occupied by a climate control system (Woodiel 1985). In a systematic survey of the entire Oakley holding, Holland and Orser (1984), during a project funded by a grant from the Division of Archaeology, mapped 28 features and collected 1900 artifacts. The features consisted of brick foundations, brick and nail concentrations, the grave of an unknown person, a septic tank, and concentrations of historic ceramics and other artifacts. Of the artifacts collected, 34 percent were historic ceramics, 49.4 percent were glass, and nails made up eight percent. The ceramics were typical of a nineteenth-century plantation, consisting of pearlware, whiteware, porcelain, yellow ware, and ironstone. Despite the extent of the collection, Holland and Orser pointed to the difficulty of assigning meaningful dates to this collection for two reasons. First, as a living plantation, Oakley utilized many of the historic artifacts in connection with its interpretive program. It was impossible to dismiss the possibility of uncontrolled discards of artifacts in the 1950s and 1960s. Second, the artifacts were recovered from surface proveniences. These authors recommended the preservation of seven features, which were subject to severe erosion, and suggested that surface artifacts be collected whenever possible.

Following the Holland and Orser study, a magnetometer survey of 1.62 ha (4 ac) at Oakley was carried out by Coastal Environments, Inc. Two large anomalies were interpreted as modern water pipes, but two smaller anomalies were seen as possibly related to the nineteenth-century occupation of the site (Castille 1989). A second magnetometer survey was conducted the next year in an effort to determine the location of a cemetery, but no cemetery was located (Castille 1990). In 1992 and 1993, formal National Register testing projects were conducted by Louisiana State University. In the first investigation, 31 features and two areas within 4.05 ha (10 ac) around the main house were examined by Wilkie, Farnsworth and their associates. The features date from the late l800s to the 1940s. Examination of surface remains, magnetometer maps and postholes tests led to the conclusion that 21 features were ineligible for the

National Register. Further testing was suggested in seven areas (Wilkie and Farnsworth 1992). In the next year, Wilkie and Farnsworth excavated test units in several areas. Three test units revealed intact archaeological deposits considered eligible for the National Register of Historic Places. The deposits appeared to be part of a nineteenth- to twentieth-century house and a nineteenth-century dump associated with it, as well as with an early nineteenth-century dump (Wilkie and Farnsworth 1993). Employees of the Louisiana Division of Archaeology have also worked at Oakley. This includes utility trench excavations (Dawdy and Matthews 1998) and site visits and testing (Avery and Lott 2000; Avery 2001). In 2001, SURA, Inc. carried out a survey of a small part of this property, in connection with plans to create a trail, but only a few isolated historic and prehistoric artifacts were recovered (Shuman and Jones 2001).

PROJECTS WITHIN 1 MI (1.62 KM) OF APE

The following projects have happened within 1 mi (1.62 km) of the center of the current APE (Table 1).

TABLE 4 – PROJECTS WITHIN 1 MI (1.62 KM) OF APE (SOURCE: LDOA).

Project No.	Type	Date	Author(s)
22-1403	Port Hudson summary	1974	Stephens
22-0935	Gas pipeline	1984	New World Research, Inc.
22-0988	Gas pipeline	1984	Phillips et al.
22-2061	Property assessment	1986	Shuman and Jones
22-1171	Mounds analysis	1986	Jones and Shuman
22-1549	River crossing project	1991	Kelly and Hopkins
22-1876	Annual report	1994	Saunders
22-2127	Annual report	1997	Hays
22-2399	Energy center	2001	Vandenbosch et al.
22-2018	Right-of-way bridge	2003	Hahn et al.
22-2913	Outreach program	2005	McGimsey and Jackson
22-3330	Annual report	2009	Mann
22-3902	Annual report	2010	Mann

The earliest report (#22-1403) was a synthesis of previously existing information about the Port Hudson area by Gene A. Stephens with a general plan for development (Stephens 1974). The following report (#22-0935) was a 1984 Level II survey done by New World Research, Inc. for a gas pipeline (NWR, Inc. 1984). Similarly, New World Research, Inc. did another pipeline survey (#22-0988) that year (Phillips et al. 1984). Shuman and Jones carried out an assessment (#22-2061) of cultural resources on the Danos property in 1986 (Shuman and Jones 1986). That same year, Jones and Shuman also did an analysis (#22-1171) of twenty-nine mounds in Baton Rouge, West Feliciana, and East Feliciana (Jones and Shuman 1986). Kelly and Hopkins performed a 1991 survey (#22-1549) for a Mississippi River crossing project. Rebecca Saunders composed the 1994 annual report (#22-1876) that year in which thirty-five sites were surveyed (Saunders 1994). Later was the 1997 report (#22-2127) by the southeastern Louisiana Regional Archaeology Program, Museum of Natural Science in which twenty-six sites were surveyed (Hays 1997).

In 2001, R. Christopher Goodwin & Associates, Inc. carried out a Phase I survey (#22-2399) of the proposed Thompson Creek Energy Center where ten isolated finds were recorded (Vandenbosch et al. 2001). The following survey was a 2003 survey (#22-2018) of the proposed right-of-way (ROW) for the Mississippi River Bridge between New Roads and St. Francisville (Hahn et al. 2003). McGimsey and Jackson of the Southwest Regional Archaeology Program at the University of Louisiana at Lafayette undertook programs (#22-2913) in public outreach, consultation and planning during the 2004/2005 grant year where five sites were recorded and eighteen sites updated (McGimsey and Jackson 2005). Most recent are the 2009 and 2010 annual reports (#22-3330, #22-3902) by Rob Mann (Mann 2009, 2010).

CHAPTER SIX:
METHODOLOGY

PROCEDURES

Methodology for the survey included archival research and fieldwork. Initially, historic maps and aerial photographs at the United States Geological Survey (USGS) were consulted in order to determine any structures or roads that might have existed on the property in the early and mid-twentieth century. In addition, the site files and report library of the Louisiana Division of Archaeology were examined to determine archaeological sites reported for this area by previous investigators.

The survey methodology consisted of systematic shovel testing. Due to the similarity between the dissected terrain of the project area and Fort Polk, in western Louisiana, the project followed the protocols below, as informed by the 1995 Fort Polk predictive model (Anderson and Smith 2003).

High Probability (HP), meaning transects and shovel testing at 30 m intervals, were utilized for all areas within 200 m of a mapped water source. All other areas were considered low probability, with shovel tests and transects spaced 50 m apart. As per LDOA guidelines, areas of excessive slope (i.e., greater than 30 degrees) will not be subjected to shovel testing (LDOA n.d.)

Material excavated was screened using ¼ in" hardware cloth, except in cases where the soil is too wet or contains too much clay content to permit screening. In those cases, the excavated material was broken up by hand or trowel and visually examined. No shovel tests were excavated in areas of excessive slope or standing water or where there is obvious surface disturbance (i.e., areas where the topsoil has been removed). All archaeological sites were defined using standard site definition methodology; that is, shovel tests will be excavated along a grid oriented to the cardinal directions (or, in cases where the topography renders this not feasible, oriented to grid north) and excavation of shovel tests will continue until two successive shovel tests or a natural barrier (e.g., a water course of a steep hillside or an area of disturbance) are negative. Shovel tests intervals were 10 m, except that in the case of sites 50 m or more in lateral extent, shovel tests were excavated at 20 m intervals. Sites were mapped using tape and compass and photographed. Material recovered was taken to the SURA offices for cleaning and analysis. At the end of the project it will be turned over to such facility as the LDOA designates for curation.

When archaeological sites are discovered, they are defined using the protocol described in the Louisiana Division of Archaeology Guidelines. Each cultural resource site found is assessed according to current National Register of Historic Places (NRHP) criteria, as given below.

ELIGIBILITY FOR THE NATIONAL REGISTER OF HISTORIC PLACES

According to the *National Register of Historic Places Bulletin* 15 (1995:2), "The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association are potentially eligible for the *National Register of Historic Places.*" In order to evaluate this significance, four criteria have been developed. Eligible properties…

> "A. …are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> B. … are associated with the lives of persons significant in our past; or
>
> C. … embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or…
>
> D. … have yielded, or may be likely to yield, information important in history or prehistory" (NRHP 1995:2).

CURATION STATEMENT

Artifacts are returned to the SURA laboratory, washed, analyzed and catalogued and will be deposited with the Louisiana Division of Archaeology, along with associated documents, at:

LDOA Curation/CRT
Central Plant North Building, 2nd Floor
1835 N. Third Street
Baton Rouge, Louisiana 70802

CHAPTER SEVEN:
RESULTS OF THE SURVEY

BACKGROUND AND ARCHIVAL RESEARCH

Maps from the original Louisiana Public Survey System were first consulted (Figure 3).

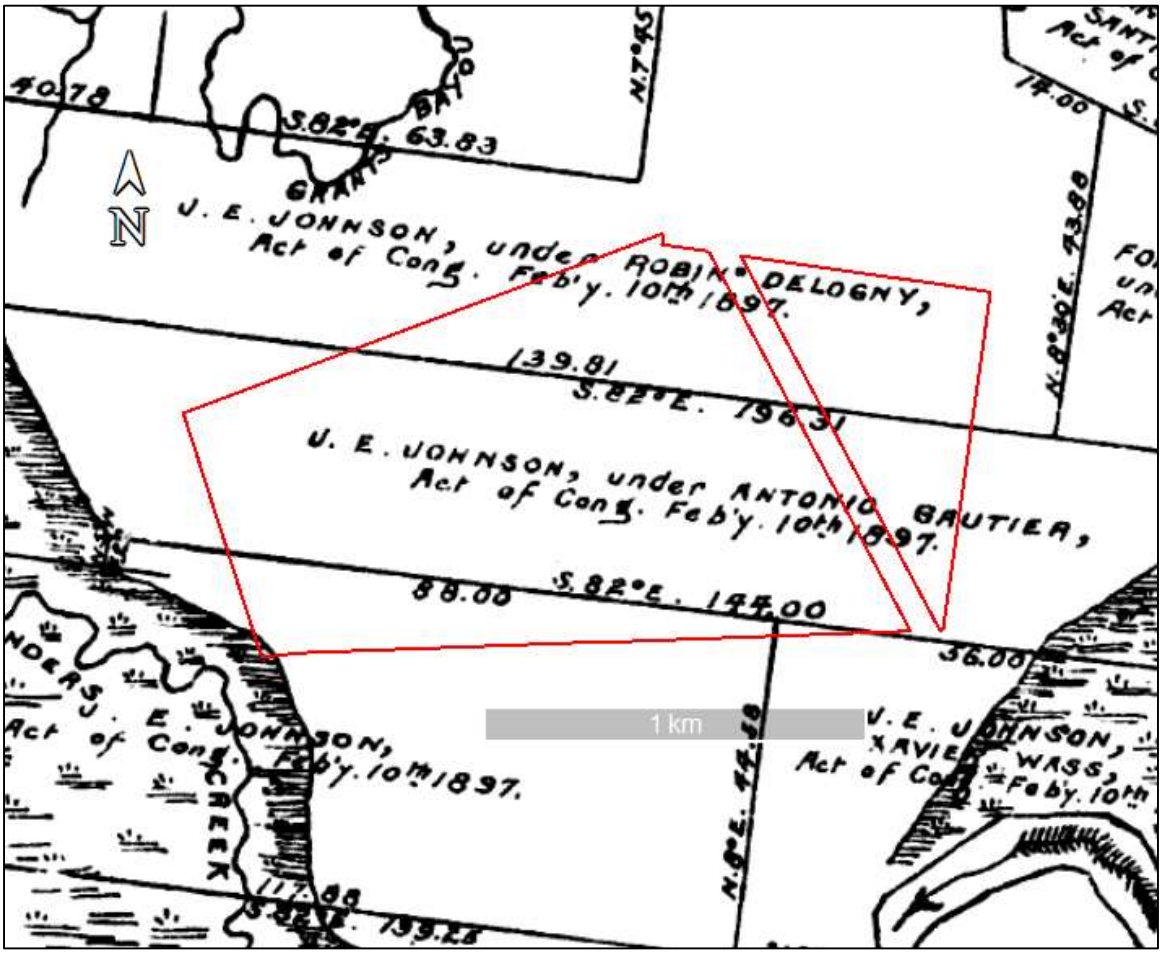

FIGURE 3 – LOUISIANA ORIGINAL PUBLIC LAND SURVEY SYSTEM PLAT MAPS (LOUISIANA DEPARTMENT OF NATURAL RESOURCES/ EARTH POINT)

A review of historic topographic maps from USGS were then consulted. The first map chronologically was the 1906 Bayou Sara map (Figure 4). A railway is on the far west of the APE. The steep ridges on the western section of the APE are first visible. A road goes through the north and eastern sections. Structures are mostly depicted on the eastern side of the APE, with the majority of structures on the far east. In total, there are sixteen structures shown.

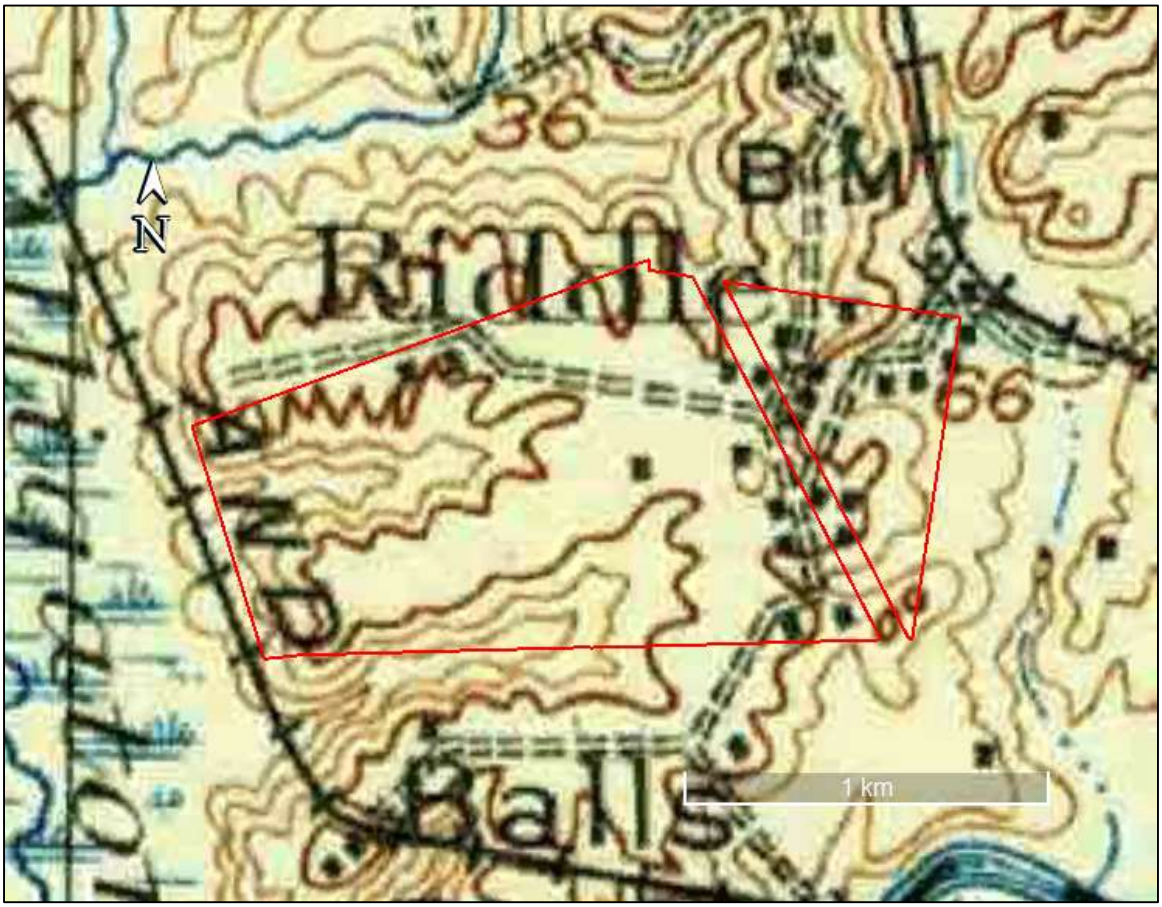

FIGURE 4 – PORTION OF 1906 BAYOU SARA, LA. 15-MINUTE MAP DEPICTING APE IN RED (USGS)

The 1954 Port Hudson map (Figure 5) is significantly more detailed. There is little difference between the two save for the addition of the pipe line.

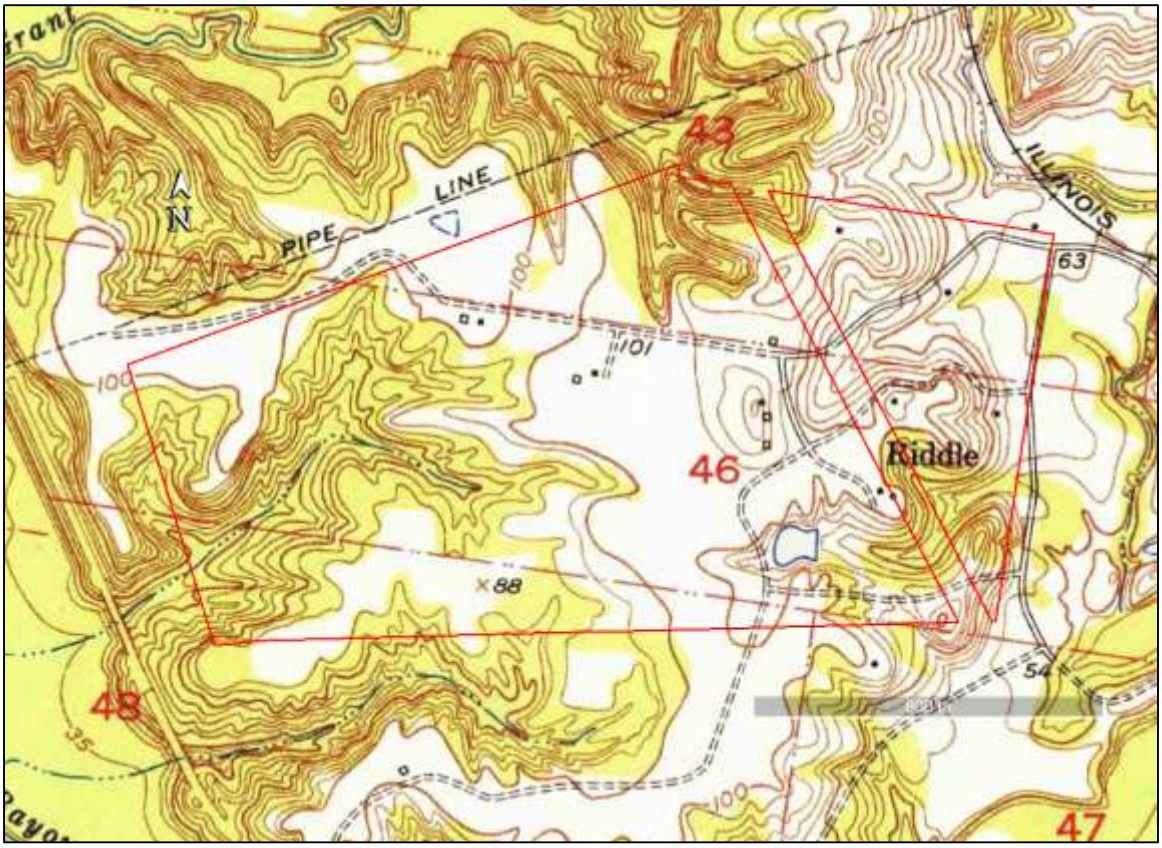

FIGURE 5 – PORTION OF 1954 PORT HUDSON, LA. 7.5-MINUTE MAP DEPICTING APE IN RED (USGS)

Little has changed between the previous map and the 1963 version (Figure 6). The most significant change is the addition of the Salvation Church and its cemetery. A few structures have disappeared on the north-center section of the APE. Sections of the road have also been removed from the southern boundary. Finally, the power lines that split the two quadrants and make up most of the northern boundary have been added.

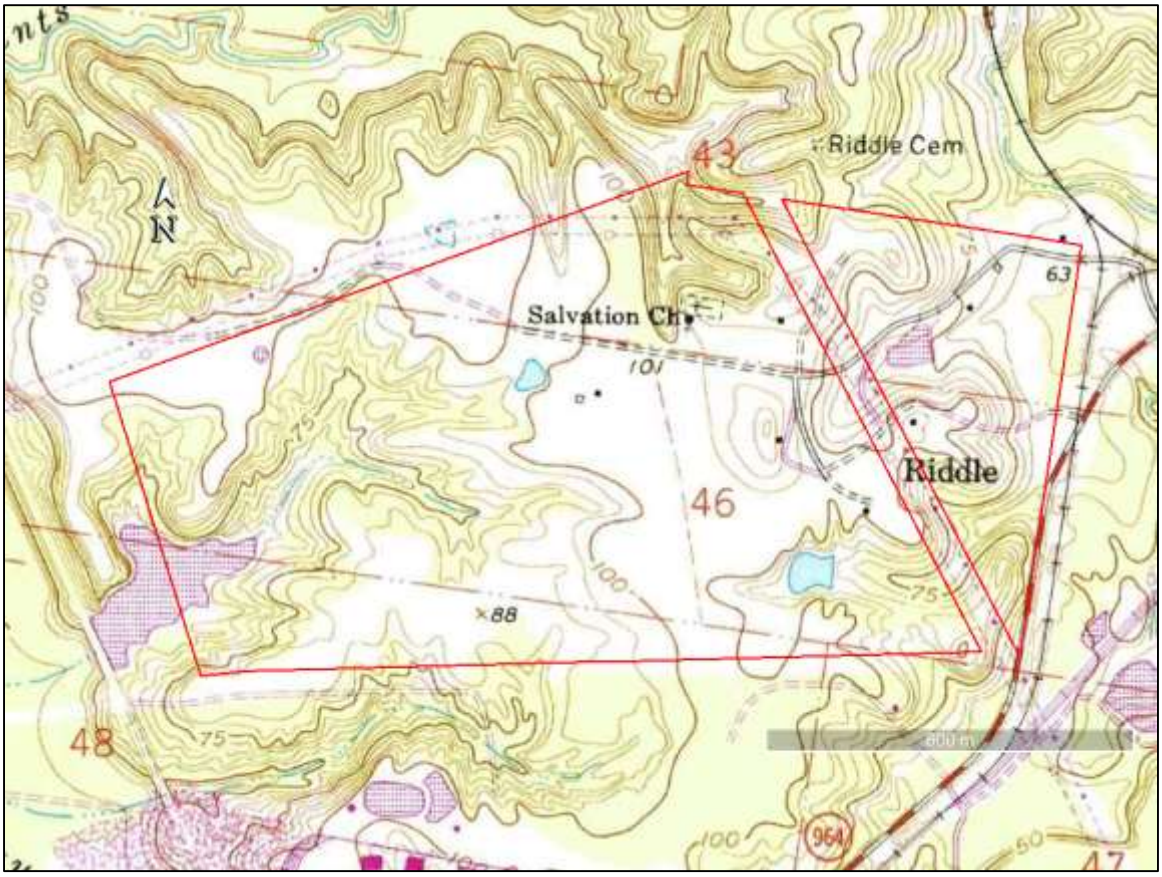

FIGURE 6 – PORTION OF 1963 PORT HUDSON, LA. 7.5-MINUTE MAP DEPICTING APE IN RED (USGS).

Structures are not depicted on the 1983 New Roads 15-minute map (Figure 7).

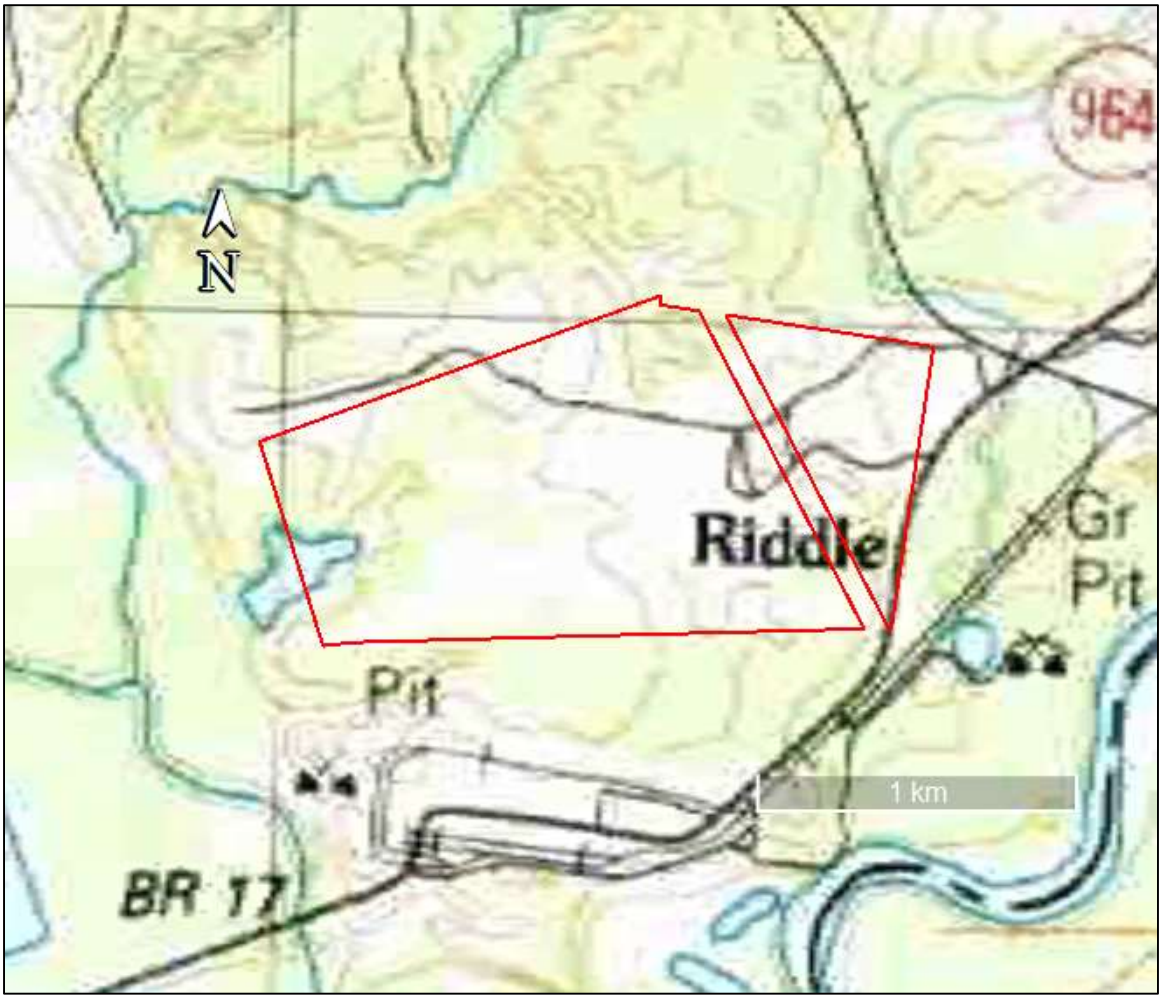

FIGURE 7 – PORTION OF 1983 NEW ROADS, LA. 15-MINUTE MAP DEPICTING APE IN RED (USGS).

ARCHAEOLOGICAL SITES WITHIN 1 MI (1.62 KM) OF APE

There are twenty-eight archaeological sites within 1 mi (1.62 km) of the APE (Table 5), with seven being inside of the APE (those in italics, see next section for interpretation on those sites).

TABLE 5 – ARCHAEOLOGICAL SITES WITHIN 1 MI (1.62 KM) OF APE (SOURCE: LDOA).

Site No.	Name	Type	Culture(s)	NR Status	Last Visited
16WF31	Riddle Family Cemetery	Historic	Industrial and Modern	Undetermined	1978
16WF149	(Site #1)	Historic	Civil War and Aftermath, Industrial and Modern	Not eligible	2001
16WF150	(Site #2)	Historic	Civil War and Aftermath, Industrial and Modern	Not eligible	2001
16WF151	(Site #3)	Historic	Civil War and Aftermath, Industrial and Modern	Not eligible	2001
16WF152	(Site #4)	Prehistoric	Prehistoric Unknown	Not eligible	2001
16WF4	Riddle Mounds	Prehistoric	Archaic Unknown, Middle Archaic, Coles Creek, Plaquemine	Undetermined/ Potential	2005
16WF154	*(Site #7)*	*Both*	*Prehistoric Unknown, Civil War and Aftermath, Industrial and Modern*	*Not eligible*	*2001*
16WF41	(Temporary #5)	Prehistoric	Middle Archaic, Baytown, Coles Creek	Not eligible	1984
16WF42	(Temporary #2)	Prehistoric	Woodland Unknown	Not eligible	1984
16WF43	*(Temporary #6)*	*Prehistoric*	*Prehistoric Unknown, Woodland Unknown*	*Not eligible*	*2010*
16WF44		Prehistoric	Archaic Unknown, Middle Archaic, Baytown, Troyville, Coles Creek	Not eligible	2010
16WF45	*(Temporary #4)*	*Prehistoric*	*Woodland Unknown*	*Not eligible*	*1984*
16WF46	(Temporary #3)	Prehistoric	Woodland Unknown	Not eligible	1984
16WF153	*(Site #6)*	*Both*	*Prehistoric Unknown, Historic Unknown, Civil War and Aftermath, Industrial and Modern*	*Not eligible*	*2001*
16WF155	2002-B	Prehistoric	Prehistoric Unknown	Not eligible	2002
16WF5	Thompson Creek Mounds	Prehistoric	Prehistoric Unknown	Not eligible	1989
16WF52		Historic	Civil War and Aftermath, Industrial and Modern	Undetermined	1994
16WF53		Prehistoric	Troyville, Coles Creek	Not eligible	1986
16WF54	(Locality 2)	Prehistoric	Middle Archaic, Troyville, Coles Creek	Not eligible	1972
16WF55	(Locality 3)	Prehistoric	Prehistoric Unknown	Not eligible	1972
16WF61	Cottonmouth Mound	Prehistoric	Baytown	Undetermined/ Potential	1994
16WF47	(Temporary #7)	Historic	Industrial and Modern	Not eligible	1984
16EF7	Port Hudson Battlefield	Historic	Civil War and Aftermath	Recorded	2015
16WF84	The Causeway Site	Prehistoric	Baytown, Mississippian	Undetermined	1994
16WF85	The Cistern Pit Site	Historic	Antebellum, Civil War and Aftermath, Industrial and Modern	Not eligible	1994
16WF191	*Salvation Church Cemetery*	*Historic*	*Civil War and Aftermath, Industrial and Modern*	*Undetermined*	*2017*
16WF192	*WFIP-1*	*Historic*	*Civil War and Aftermath, Industrial and Modern*	*Not eligible*	*2017*
16WF193	*WFIP-2*	*Prehistoric*	*Prehistoric Unknown*	*Not eligible*	*2017*

Field survey was conducted from February 16 to March 15, 2017. The majority of the APE consisted of low lying woods with instances of new pine growth in some areas. Power lines divided the APE into two sections. Figure 8 depicts transects throughout the APE, while Figures 9-14 show a representation of the topography encountered during the survey.

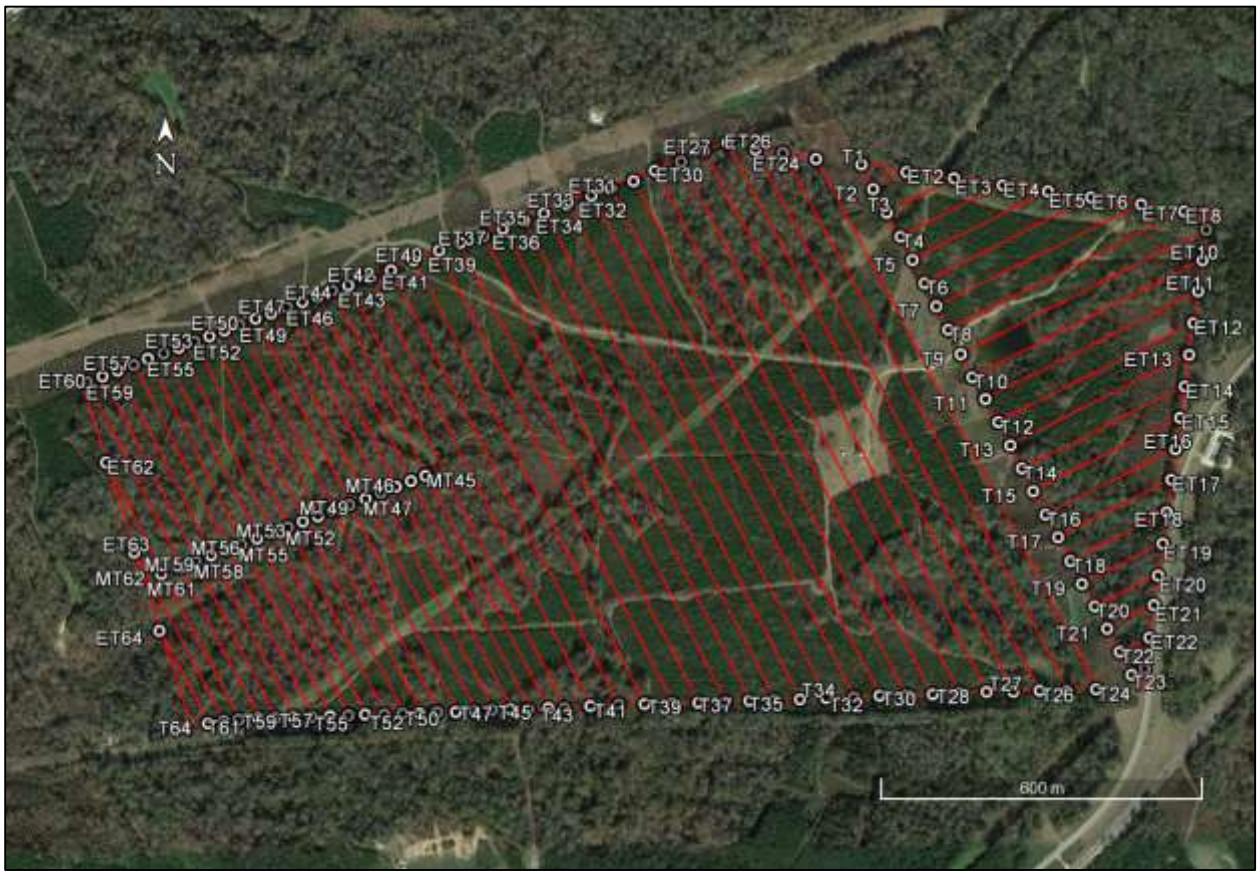

FIGURE 8 - AERIAL PHOTOGRAPH DEPICTING SHOVEL TESTING TRANSECTS OF THE APE (GOOGLE EARTH).

FIGURE 9 – BEGINNING OF TRANSECT 1, FACING SOUTH.

FIGURE 10 - BEGINNING OF TRANSECT 13, FACING EAST.

FIGURE 11 – DATUM OF 16WF192, FACING NORTHEAST.

FIGURE 12 – END OF TRANSECT 42, FACING EAST.

FIGURE 13 – DATUM OF 16WF43, FACING NORTH.

FIGURE 14 – MIDDLE OF TRANSECT 51, FACING NORTH.

ARCHAEOLOGICAL SITES

Seven archaeological sites are defined in the APE (Figure 15), with four being previously recorded (16WF43, 16WF45, 16WF153, and 16WF154). Three sites were recorded during the course of this survey—16WF191, 16WF192, and 16WF193.

FIGURE 15 – AERIAL PHOTOGRAPH DEPICTING THE APE IN RED AND THE SEVEN SITES ENCOUNTERED DURING FIELDWORK IN BLUE (GOOGLE EARTH).

This site, covering 1.22 acres (ac) (0.49 hectares [ha]), was also classified as *Temporary No. 6, W.F. Parish* and was a prehistoric artifact scatter. The datum of the site is located at 660760.92 m E, 3400099.73 m N. Figure 16 depicts the location of the site. Figure 17 presents a map, and Figure 18 shows a view from datum. Table 6 describes the soil profile, and Table 7 is a list of the recovered artifacts preceding a brief explanation.

FIGURE 16 – DETAIL OF AERIAL PHOTOGRAPH SHOWING 16WF43 ORIGINAL SITE BOUNDARIES IN BLUE AND APE IN RED (GOOGLE EARTH).

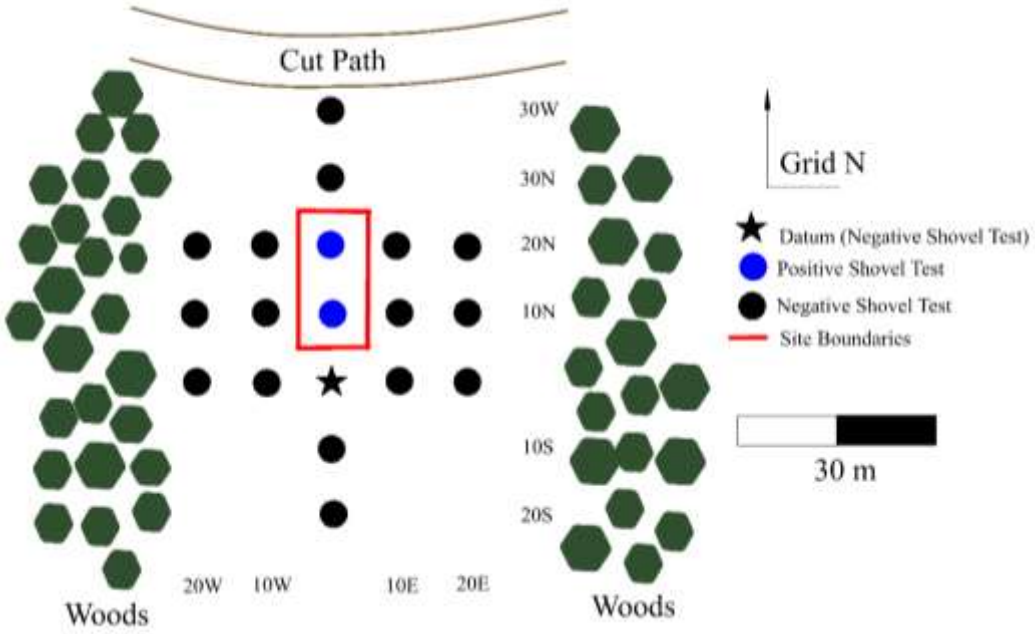

FIGURE 17 – SITE MAP OF 16WF43.

FIGURE 18 – FACING NORTH FROM DATUM.

TABLE 6 – REPRESENTATIVE SOIL PROFILE FROM 16WF43.

Location	Depth	Munsell	Description
Datum	0-10 cmbs	10YR 3/2	Silty loam
	11-35 cmbs	10 YR 4/4	Silty sand
	36-50 cmbs	7.5 YR 5/8	Sandy clay

TABLE 7 – ARTIFACTS FROM 16WF43.

	LOCATION		
	10 N	20 N	TOTAL
Lithics			
Debitage			
Flakes			
Secondary	1	2	3
Tertiary		1	1
Pottery			
Baytown Plain	1		1
TOTAL	2	3	5

This site was initially recorded in 1984 by Wade Carr. It was since revisited in 2010 by Kat Fogg and Kat Guyon. A small number of lithic flakes and pottery sherds were excavated. During this survey, one Baytown Plain, *var. Unspecified* pottery sherd was recently excavated along with four lithic flakes.

Baytown Plain pottery sherds are described as a "supertype" covering all non-shell tempered, post-Tchula plain pottery of the Lower Mississippi Valley (Phillips 1970:48).

In both previous instances, no further work was recommended for the site and that the site was ineligible for the *National Register of Historic Places* due to the paucity of artifacts. The authors of this paper agree with the previous recommendations.

16WF45

This site, covering 0.1 acres (ac) (0.04 hectares [ha]), was also classified as *Temporary No. 4, W.F. Parish* and was a prehistoric artifact scatter. The datum of the site is located at 660490 m E, 3399940 m N. Figure 19 depicts the location of the site. Figure 20 presents a map, and Figure 21 shows a view from datum. Table 8 describes the soil profile.

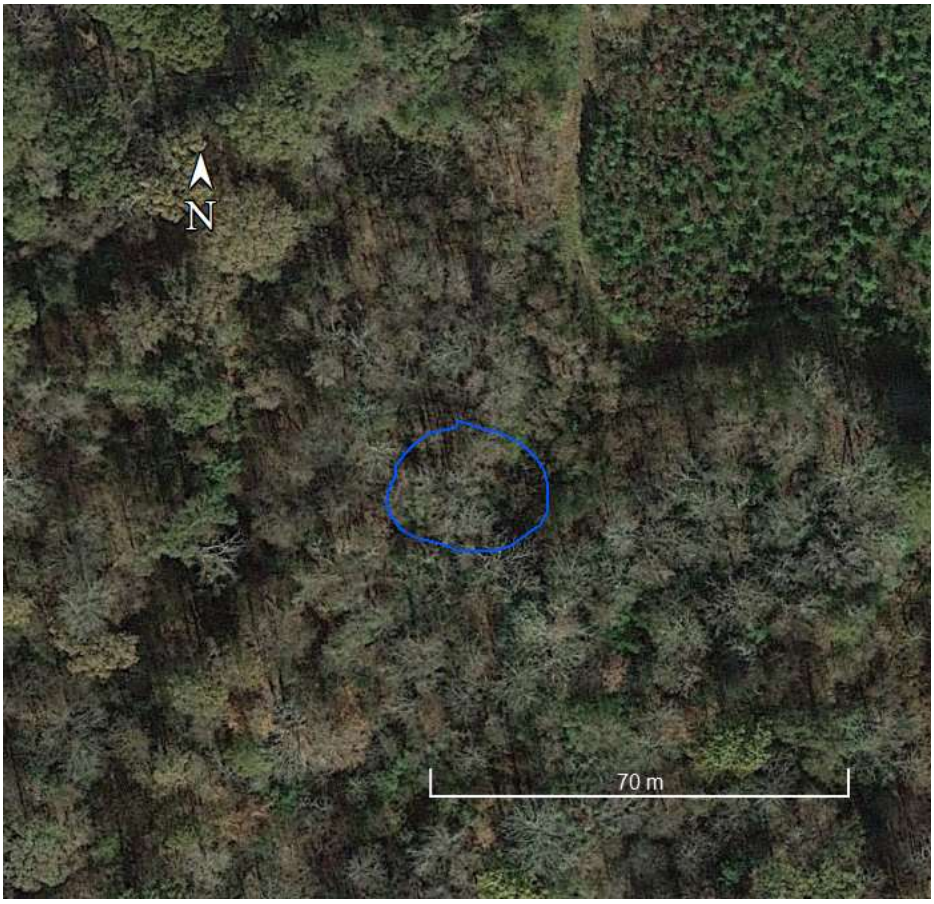

FIGURE 19 – DETAIL OF AERIAL PHOTOGRAPH SHOWING 16WF45 ORIGINAL SITE BOUNDARIES IN BLUE (GOOGLE EARTH).

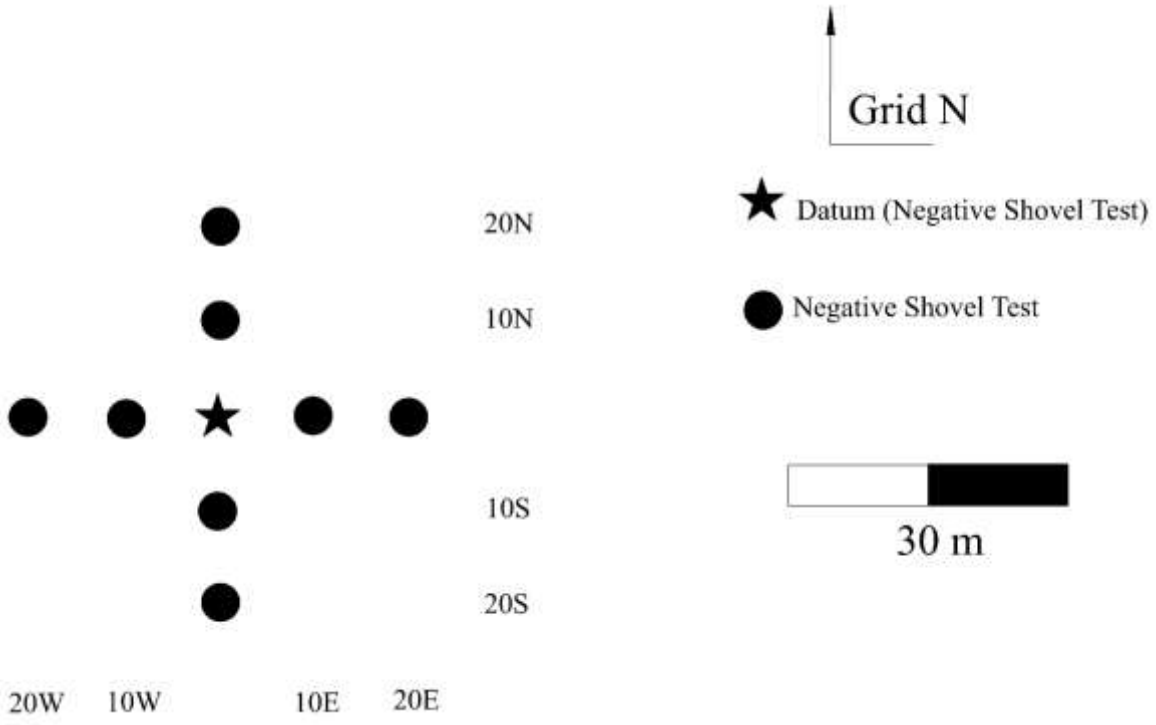

FIGURE 20 - SITE MAP OF 16WF45.

FIGURE 21 – FACING EAST FROM DATUM.

TABLE 8 – REPRESENTATIVE SOIL PROFILE FROM 16WF45.

Location	Depth	Munsell	Description
Datum	0-15 cmbs	10YR 4/3	Silty loam
	16-35 cmbs	10 YR 3/4	Silty loam
	36-50 cmbs	10 YR 2/2	Sandy clay

This site was initially recorded in 1984 by Wade Carr. A small number of flakes and one pottery sherd were collected. During this survey, all shovel tests in the original boundaries of 16WF45 were negative and no cultural materials were excavated.

No further work was recommended for the site and that the site was ineligible for the *National Register of Historic Places* due to the paucity of artifacts. The authors of this paper agree with the previous recommendations

16WF153

This site, covering 3,229.2 ft^2 (300 m^2), was also classified as *Site #6* and was a prehistoric and historic artifact scatter. The datum of the site is located at 661325 m E, 3399280 m N. Figure 22 depicts the location of the site, and Figure 23 shows a view from datum.

FIGURE 22 – DETAIL OF AERIAL PHOTOGRAPH SHOWING 16WF43 IN BLUE ORIGINAL SITE BOUNDARIES AND APE IN RED (GOOGLE EARTH).

FIGURE 23 – DATUM, FACING DOWN.

This site was initially recorded in 2001 by Stephanie Perrault. A small number of Baytown Plain pottery sherds, glass shards, and brick fragments were excavated. During this survey, the site was unable to be dug to due to standing water for every shovel test.

No further work was recommended for the site and that the site was ineligible for the *National Register of Historic Places* due to the paucity of artifacts and no intact midden was noted. The authors of this paper agree with the previous recommendations.

This site, covering 1.76 acres (ac) (0.71 hectares [ha]), was also classified as *Site #7* and was a prehistoric and historic artifact scatter. The datum of the site is located at 661355 m E, 3399540-560 m N. Figure 24 depicts the location of the site. Figure 25 presents a map, and Figure 26 shows a view from datum. Table 8 describes the soil profile, and Table 9 is a list of the recovered artifacts preceding a brief explanation. Figure 27 is a representative artifact.

FIGURE 24 – DETAIL OF AERIAL PHOTOGRAPH SHOWING 16WF154 ORIGINAL SITE BOUNDARIES IN BLUE (GOOGLE EARTH).

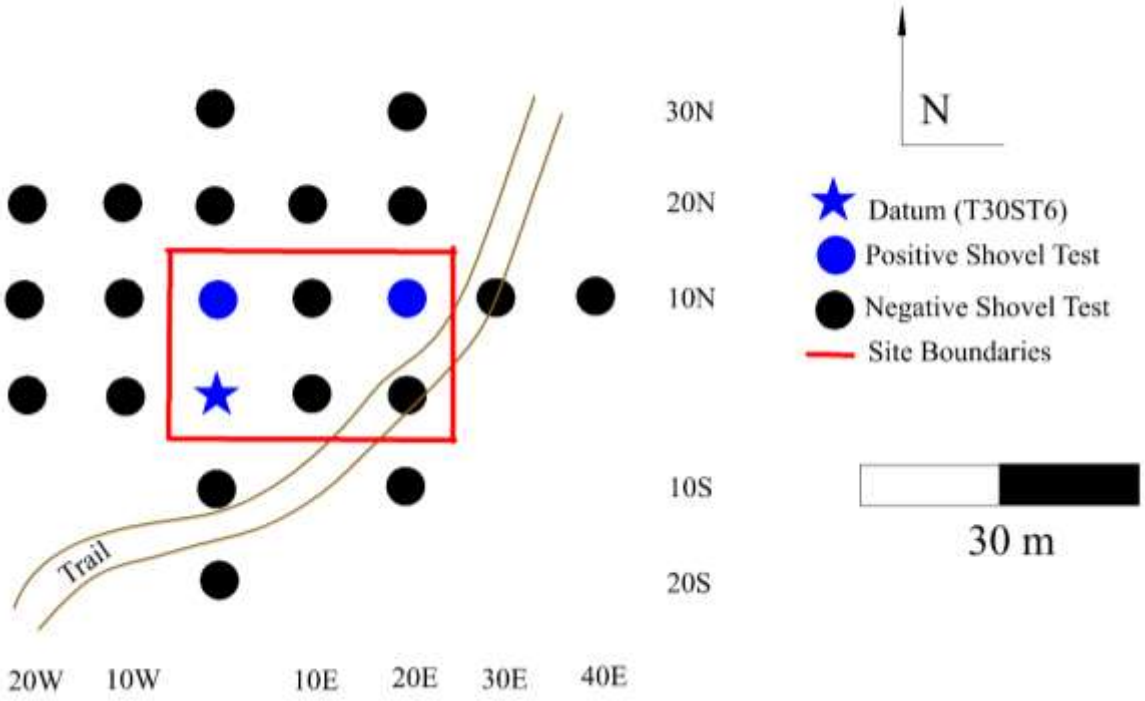

FIGURE 25 – SITE MAP OF 16WF154.

FIGURE 26 – FACING EAST FROM DATUM.

TABLE 9 – REPRESENTATIVE SOIL PROFILE FROM 16WF154.

Location	Depth	Munsell	Description
Datum	0-20 cmbs	10YR 4/4	Silty loam
	21-35 cmbs	10 YR 3/4	Silty loam
	36-60 cmbs	10 YR 5/4	Silty clay

TABLE 10 – ARTIFACTS FROM 16WF154.

	LOCATION			
	Datum	10 N	10 N, 20 E	TOTAL
Lithics				
Debitage				
Flakes				
Secondary	1	1		2
Tertiary		2		2
Pottery				
Baytown Plain	3		2	5
Mazique Incised		1		1
TOTAL	4	4	2	10

FIGURE 27 – MAZIQUE INCISED, *VAR. KING'S POINT* (?) POTTERY SHERD.

This site was initially recorded in 2001 by Stephanie Perrault. A small number of Baytown Plain pottery sherds, lithic flakes, historic ceramics (whiteware and ironstone), glass shards, brick fragments, and iron was excavated. For this survey, four lithic flakes, five Baytown Plain, *var. Unspecified* and one (possible) Mazique Incised, *var. King's Point* pottery sherd (Figure 27) were excavated.

Mazique Incised, *var. King's Point* pottery spans the period from early Coles Creek to late Mississippi, or roughly A.D. 700-1750 (Phillips 1970:129).

No further work was recommended for the site and that the site was ineligible for the *National Register of Historic Places* due to the paucity of artifacts and no intact midden was noted. The authors of this paper agree with the previous recommendations.

16WF191

This site, covering 0.81 acres (ac) (0.33 hectares [ha]), was also classified as *Salvation Church Cemetery* and was used as a historic cemetery. The datum of the site is located at 661156 m E, 3399984m N. Figure 28 depicts the location of the site. Figure 29 presents a map, and Figure 30 shows a view from datum. Table 10 is a listing of the legible inscriptions of interred individuals.

FIGURE 28 – DETAIL OF AERIAL PHOTOGRAPH SHOWING 16WF191 (SALVATION CHURCH CEMETERY) IN BLUE (GOOGLE EARTH).

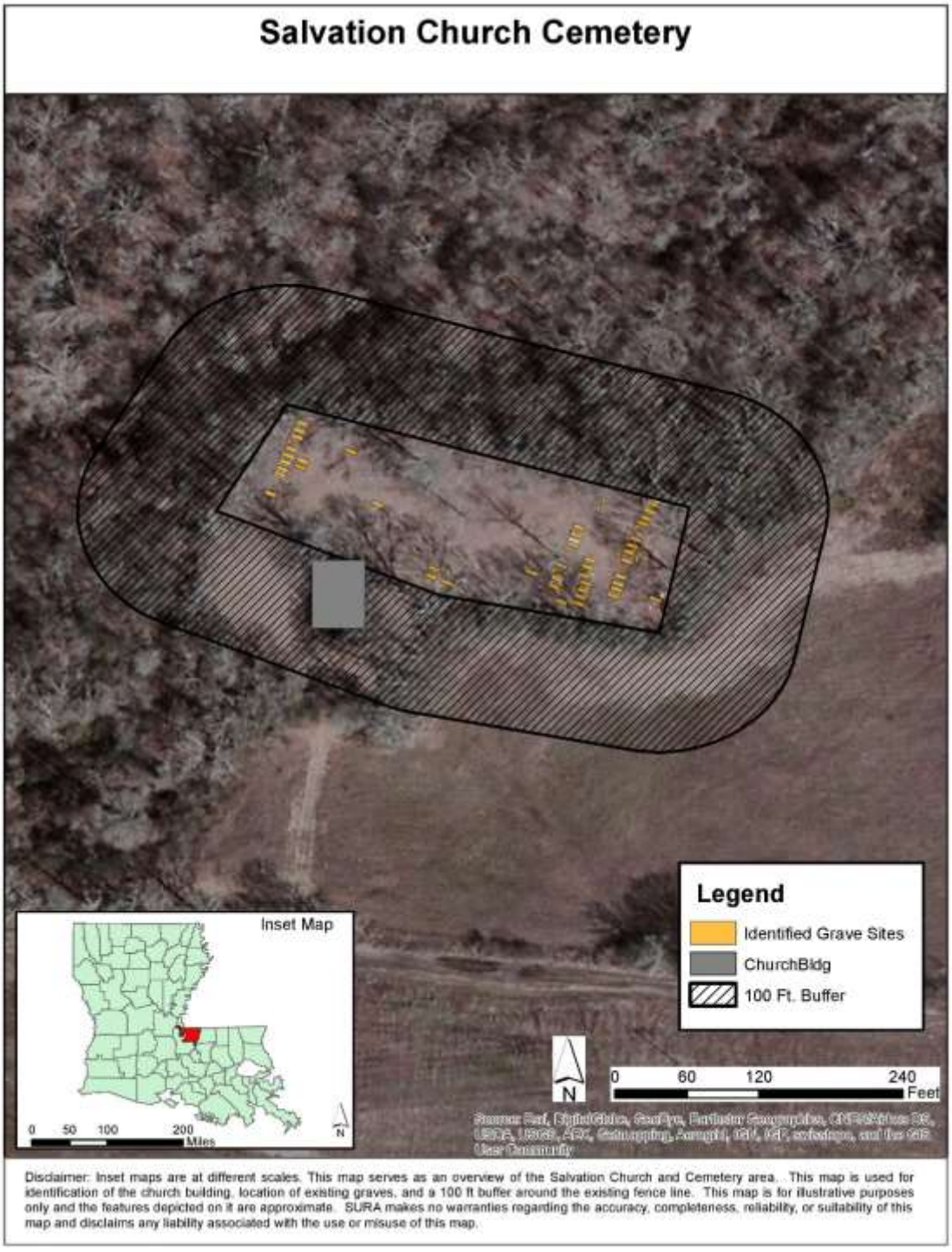

FIGURE 29 – SITE MAP OF 16WF191 (SALVATION CHURCH CEMETERY).

FIGURE 30 – FACING EAST FROM DATUM.

TABLE 11 – LEGIBIBLE INSCRIPTIONS OF INTERRED INDIVIDUALS.

Number	Name	Birth Date	Death Date
4	Ellen Richard	1883	1932
10	Regina Ann Ivey	2/26/1958	4/14/2004
11	Luviller P. Richard	3/3/1906	8/25/2006
15	Elizabeth C. Haney	1880	1967
20	Leona Wade	18?	1984?
23	Mark? Ro?o?		
25	Mary?		
29	Willie Carr Jr.	5/22/1956	5/7/1972
30	Lucy Carr	8/15/1890	9/19/1971
42	Clara Smith		2/12/1933
45	Hattie Cavalier	7/18/1898	3/3/1962
46	John Henry Williams	8/25/1896	5/23/1946
48a	Jessie Butler Jr.		4/23/1928
48b	Ebbie Carr		1927
48c	Joe Henry		7/18/1941

As described in the survey methodology, systematic pedestrian transects were excavated for the entirety of the 410 ac APE save for the inside the cemetery site boundaries. Shovel tests were not excavated here for fear of disturbing unmarked burials. As such, the methodology for the cemetery consisted of visual inspection, pedestrian survey, and recordation. Magnetometry and remote sensing survey for determining unmarked graves was beyond the scope of the initial survey.

The church in front of the cemetery is in poor condition. The roof is caving in some areas and has been stripped of all furniture save for the altar and a piano. The tombs in the cemetery are also in varying conditions. The graves for the most recent burials (2004 and 2006) are in decent condition, while most are overgrown with grass and weeds. Indicators of who was buried (Table 10) are missing from seventy-five percent of the graves. Some have worn down with time to being illegible. The concrete on two of the tombs is severely damaged with one so substantially that the coffin was apparently removed.

The cemetery and church are surrounded by a metal post fence with barbed wire on some portions. This fence was presumably installed by the Daniel family who owns the surrounding land and leases the area for hunting.

The cemetery first appears on the 1963 Port Hudson 7.5 minute quad map. Apart from this, little information was gleaned about the church and cemetery. The current owner, Irv Daniel, said the 1.5 ac land that makes up the church and cemetery was a gift to the church owners by R.H. Daniel, Sr. Burials are still used on rare occasions.

The research potential is high for genealogical and historic study. To take into account the possibility of unmarked graves outside the existing fence, SURA, Inc. suggests a 100 ft (30.48 m) protective buffer around the site perimeter. The National Register status for the cemetery is undetermined.

16WF192

This site, covering 538.2 ft^2 (50.0 m^2), was also classified as *WFIP-1* and was a historic artifact scatter. The datum of the site is located at 661810.78 m E, 3399711.62 m N. Figure 31 depicts the location of the site. Figure 32 presents a map, and Figure 33 shows a view from datum. Table 11 describes the soil profile, and Table 12 is a list of the recovered artifacts preceding a brief explanation. Figures 34-36 are representative artifacts.

FIGURE 31 – DETAIL OF AERIAL PHOTOGRAPH SHOWING 16WF192 IN BLUE (GOOGLE EARTH).

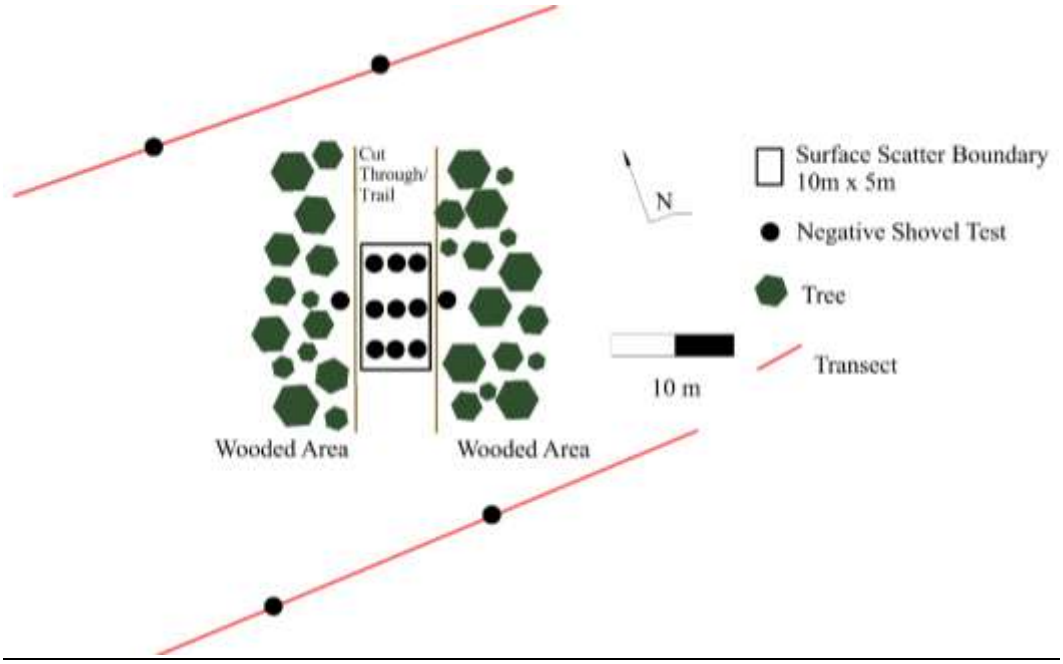

FIGURE 32 – SITE MAP OF 16WF192 (WFIP-1).

FIGURE 33 – FACING NORTHEAST FROM DATUM.

TABLE 12 – REPRESENTATIVE SOIL PROFILE FROM WFIP-1 (16WF192).

Location	Depth	Munsell	Description
Datum	0-10 cmbs	10YR 4/4	Silty loam
	11-25 cmbs	10 YR 3/2	Silty loam
	26-50 cmbs	10 YR 2/2	Silty clay

TABLE 13 – ARTIFACTS FROM 16WF192.

	LOCATION	
	Surface	TOTAL
Ceramics		
Whiteware		
Plain	5	5
Decorated		
Transfer	6	6
Hand-painted	4	4
Ironstone		
Plain	4	4
Porcelain		
Plain	1	1
Decorated	1	1
Glass		
Bottle (Vessel)	8	8
Milk	3	3
Metal		
Iron		
Nails		
Wire	3	3
TOTAL	35	35

FIGURE 34 – HAND-PAINTED WHITEWARE.

FIGURE 35 – CLEAR OWENS BOTTLE BASE.

FIGURE 36 – COLBALT GLASS RIM.

This site was initially recorded in 2017 during the course of this survey. The artifacts were scattered on a hunting trail cut for ATVs, presumably pushed by some vehicle from original context. All surrounding shovel tests were negative for cultural materials. Twenty-one ceramic sherds were found on surface consisting of fifteen whiteware (Figure 34), four ironstone, and two porcelain. Eight shards of vessel glass (Figures 35-36) and three milk glass were recovered. Three wire nails were also recorded.

No further work is recommended for the site and it is recommended the site is ineligible for the *National Register of Historic Places* due to the paucity of artifacts and that they were out of context.

16WF193

This site, covering 415 ft^2 (38.6 m^2), was also classified as *WFIP-2* and was a prehistoric artifact scatter. The datum of the site is located at 660491.41 m E, 3399543.57 m N. Figure 37 depicts the location of the site. Figure 38 presents a map, and Figure 39 shows a view from datum. Table 13 describes the soil profile, and Table 14 is a list of the recovered artifacts preceding a brief explanation.

FIGURE 37 – DETAIL OF AERIAL PHOTOGRAPH SHOWING 16WF193 IN BLUE (GOOGLE EARTH).

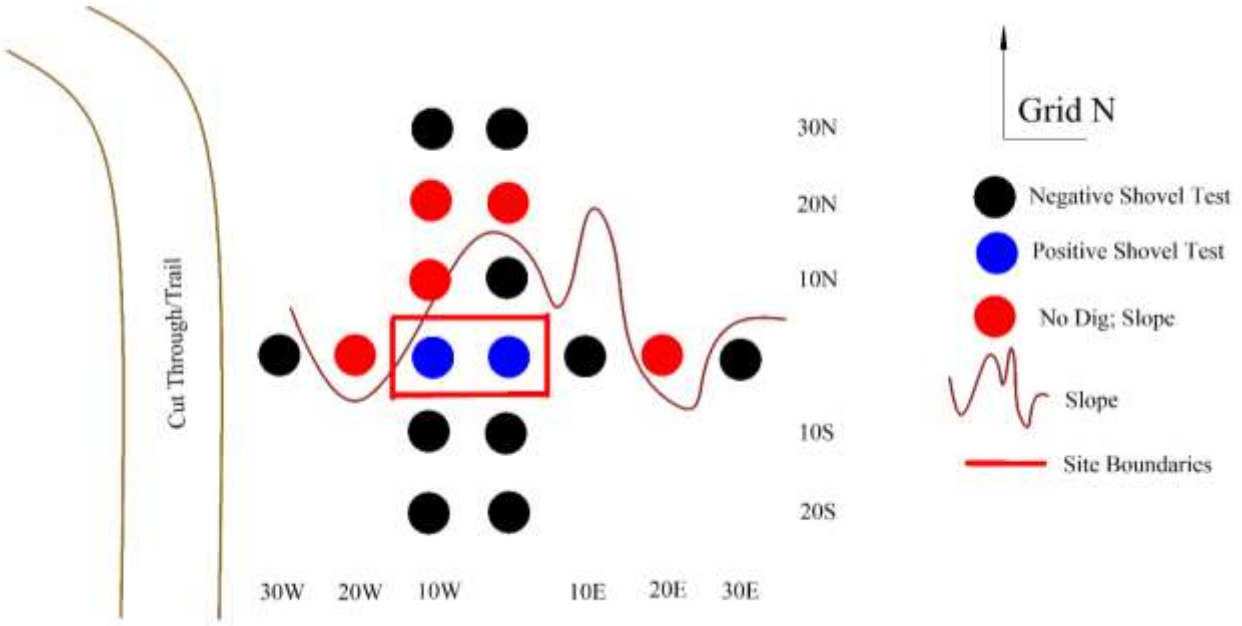

FIGURE 38 – SITE MAP OF 16WF193 (WFIP-2).

FIGURE 39 – FACING EAST FROM DATUM.

TABLE 14 – REPRESENTATIVE SOIL PROFILE FROM WFIP-2 (16WF193).

Location	Depth	Munsell	Description
Datum	0-10 cmbs	10YR 4/3	Silty loam
	11-30 cmbs	10 YR 3/2	Silty clay
	31-60 cmbs	10 YR 2/2	Silty clay

TABLE 15 – ARTIFACTS FROM WFIP-2 (16WF193).

	LOCATION		
	Datum	10 W	TOTAL
Lithics			
Debitage			
Flakes			
Secondary	2		2
Tertiary	3	1	4
Pottery			
Baytown Plain	1	3	4
TOTAL	6	4	10

This site was initially recorded in 2017 during the course of this survey. Six lithic flakes and four Baytown Plain, *var. Unspecified* pottery sherds were excavated in two positive shovel tests.

No further work is recommended for the site and it is recommended the site is ineligible for the *National Register of Historic Places* due to the paucity of artifacts.

ISOLATED FINDS

One isolated find was encountered during the course of the survey (Figure 36). It was defined by placing two additional shovel tests along the cardinal axes and all the additional shovel tests were negative.

FIGURE 40 - AERIAL PHOTOGRAPH DEPICTING THE APE IN RED AND THE ISOLATED FIND ENCOUNTERED DURING FIELDWORK (GOOGLE EARTH).

ISOLATED FIND #1

The only isolated find was located at 660299.55 m E, 3399943.68 m N. It was one positive shovel test located at T48, ST3 and was a sherd of Coles Creek Incised, *var. Hardy* pottery (Figure 41). This variety of pottery is recognizable by the sloppiness of its execution; its parallel incisions tend to be "crude and carelessly applied." In the Yazoo Basin, this variety is a marker for the Crippen Point Phase (A.D. 1000-1200) of the early Mississippi period (Phillips 1970:74).

The stratigraphy of the shovel test using the Munsell system was (0-20 cmbs) 10YR 4/4 silty loam, (21-60 cmbs) 10YR 5/4 silty clay.

FIGURE 41 – COLES CREEK INCISED, *VAR. HARDY* POTTERY SHERD.

SUMMARY

Seven archaeological sites were defined inside of the APE, three of them being previously unrecorded. The authors suggest that archaeological sites 16WF43, 16WF45, 16WF153, 16WF154, 16WF192, and 16WF193 do not possess the qualities of significance and are not eligible for listing on the National Register of Historic Places under Criterion D. One prehistoric isolated find was also noted and recorded.

16WF191 was recorded as the Salvation Church Cemetery. The nearby church was recorded as a standing structure. There are roughly forty-eight burials inside of the site boundary. To take into account the possibility of unmarked graves outside the existing fence, SURA, Inc. suggests a 100 ft (30.48 m) protective buffer around the site perimeter.

CHAPTER EIGHT:
CONCLUSIONS AND RECOMMENDATIONS

From February 16 to March 15, 2017, Surveys Unlimited Research Associates, Inc. (SURA, Inc.) conducted a Phase I cultural resources survey of 410 acres (ac) (165.9 hectares [ha]) on the left descending bank of the Mississippi River, south of St. Francisville, La., West Feliciana Parish. The project area is intended for use as an industrial park. A total of 882 shovel tests were excavated.

Seven archaeological sites were defined inside of the APE, three of them being previously unrecorded. The authors suggest that archaeological sites 16WF43, 16WF45, 16WF153, 16WF154, 16WF192, and 16WF193 do not possess the qualities of significance and are not eligible for listing on the National Register of Historic Places under Criterion D. One prehistoric isolated find was also noted and recorded.

16WF191 was recorded as the Salvation Church Cemetery. The nearby church was recorded as a standing structure. There are roughly forty-eight burials inside of the site boundary. To take into account the possibility of unmarked graves outside the existing fence, SURA, Inc. suggests a 100 ft (30.48 m) protective buffer around the site perimeter.

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MAPS

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FINAL REPORT JULY 2001

PHASE I CULTURAL RESOURCES SURVEY AND ARCHEOLOGICAL INVENTORY OF THE PROPOSED THOMPSON CREEK ENERGY CENTER, WEST FELICIANA PARISH, LOUISIANA

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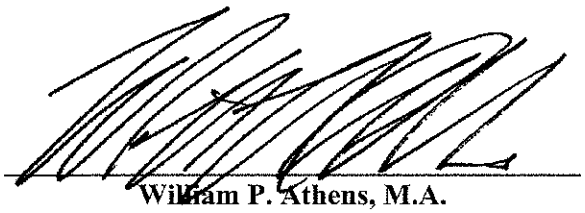
PHASE I CULTURAL RESOURCES SURVEY AND ARCHEOLOGICAL INVENTORY OF THE PROPOSED THOMPSON CREEK ENERGY CENTER, WEST FELICIANA PARISH, LOUISIANA

FINAL REPORT



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By
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July 2001

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ABSTRACT

This report presents the results of a Phase I cultural resources survey and archeological inventory of the proposed Thompson Creek Energy Center in West Feliciana Parish, Louisiana. This survey was conducted by R. Christopher Goodwin & Associates, Inc., on behalf of URS Greiner Corporation of Baton Rouge, Louisiana. The investigation was designed to identify and to evaluate all cultural resources (archeological sites, isolated finds, standing structures, cemeteries, and traditional cultural properties) that may be impacted as a result of this undertaking. This survey included examination of the proposed 42.5 ha (105 ac) generation facility area, the location of the proposed 0.8 ha (2 ac) substation facility, and the 30.5 m (100 ft) wide, 100 m (328 ft) long corridor that will extend between the two areas. Therefore, a total of 43.6 ha (107 ac) was encompassed by the survey. The project area is situated in Sections 47 an 48 of Township 4 South Range 2 West.

This Phase I cultural resources survey and archeological inventory included pedestrian reconnaissance augmented by systematic shovel testing throughout the Area of Potential Effect, as well as an examination of those files housed and maintained at the Louisiana Department of Culture, Recreation and Tourism, Office of Cultural Development, Divisions of Archaeology and Historic Preservation in Baton Rouge. These efforts were carried out between April 9 and 18, 2001. Shovel tests generally were excavated at 30 m (98 ft) intervals through the Area of Potential Effect; however, some shovel tests were excavated judgmentally along the western edge of the project area.

The field efforts resulted in the recovery of 10 prehistoric and historic period artifacts from seven discrete cultural resources loci. The prehistoric artifacts included eight pieces of lithic debitage that were derived from seven separate shovel tests; none of these lithic artifacts is culturally or temporally diagnostic. The historic materials included one whiteware ceramic sherd and a single piece of flat glass. None of the cultural resources produced sufficient cultural material to warrant archeological site status.

The paucity of cultural materials, the absence of temporally and culturally diagnostic artifacts, and the lack of intact cultural deposits, demonstrate that none of the seven cultural resources identified as a result of this investigation possesses the qualities of significance as defined by the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]). Therefore, the proposed Thompson Creek Energy Center project will have no adverse effects on cultural resources within the project area that are listed on or eligible for the National Register of Historic Places. No additional testing of the proposed Thompson Creek Energy Facility is recommended.

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CHAPTER I

INTRODUCTION

This report describes the results of a Phase I cultural resources survey and archeological inventory of the proposed Thompson Creek Energy Center in West Feliciana Parish, Louisiana. R. Christopher Goodwin & Associates, Inc., conducted this investigation on behalf of URS Greiner Corporation of Baton Rouge, Louisiana. The project area is situated approximately 9.8 km (6.1 mi) southeast of the town of St. Francisville and in Sections 47 and 48 of Township 4 South, Range 2 West, and within the uplands of the Central Gulf Coastal Plain (Figure 1). The proposed undertaking includes three items, and each was investigated for cultural resources. The three items consist of a 42.5 ha (105 ac) area designed to house an electric power generation facility; a 0.8 ha (2 ac) power substation facility; and a 30.5 m (100 ft) wide, 100 m (328 ft) long right-of-way corridor that lies between the two areas. Therefore, a total of 43.6 (107 ac) was encompassed by the survey.

Project Methods and Results

The investigation was designed to identify and to evaluate all cultural resources (archeological sites, isolated finds, standing structures, cemeteries, and traditional cultural properties) situated within the project area that may be impacted as a result of this undertaking. This Phase I cultural resources survey and archeological inventory included both pedestrian reconnaissance and systematic shovel testing throughout the Area of Potential Effect. In addition, the site and standing structures files housed at the Louisiana Department of Culture, Recreation, and Tourism, Office of Cultural Development, Divisions of Archeology and Historic Preservation were examined for pertinent information. These efforts were carried out between April 9 and 18, 2001. All work was performed in accordance with the procedures outlined in the National Historic Preservation Act of 1966, as amended; the Archaeological and Historic Preservation Act of 1974; the Archaeological Resources Protection Act of 1979, as amended; Title 36 of the Code of Federal Regulations, Parts 60-66 and 800, as appropriate and the Secretary of the Interior's "Standards and Guidelines" (48 FR 44716-42) and the Advisory Council on Historic Preservation's handbook entitled *Treatment of Archeological Properties*, 36 CFR Part 800.

Documentary research identified 11 previously conducted cultural resources investigations within 8.0 km (5.0 mi) of the proposed project area. In addition, 10 previously recorded archeological sites were situated within 1.6 km (1.0 mi) of the proposed project area. Only one of the ten sites was assessed as eligible for listing on the National Register of Historic Places, two were not assessed, and the remaining 7 were assessed as not eligible for listing on the National register of Historic Places.

The field efforts resulted in the recovery of 10 prehistoric and historic period artifacts from seven discrete cultural resource loci (Table 1). The prehistoric artifacts included eight pieces of lithic debitage recovered from seven shovel tests; none of the artifacts is culturally or temporally diagnostic. The historic material was limited to one whiteware ceramic sherd and a piece of flat glass. None of the cultural resources produced sufficient amounts of cultural material to warrant archeological site status.

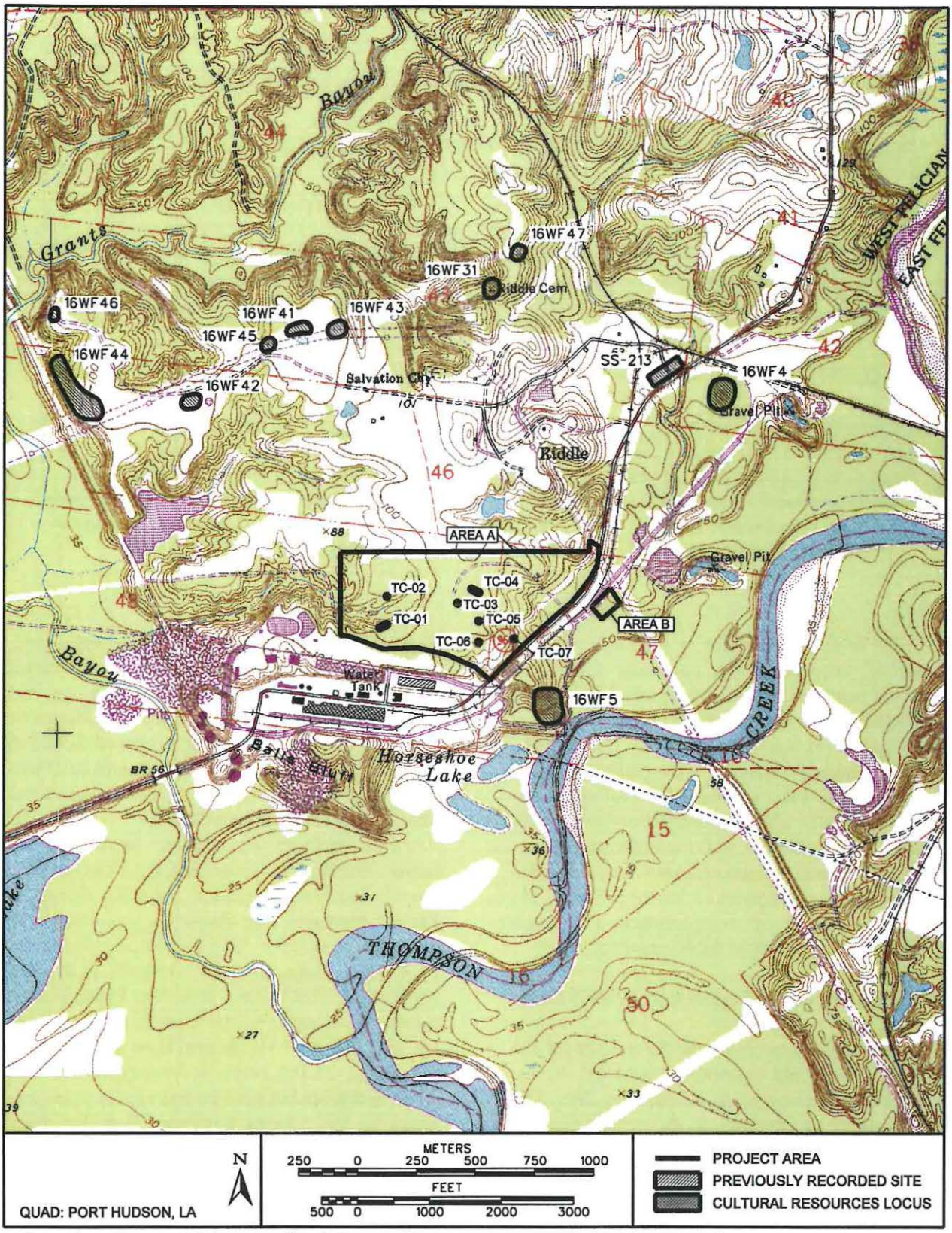

Figure 1. **Proposed Thompson Creek Energy Center project area and nearby cultural resources depicted on excerpt from USGS 7.5" Port Hudson, Louisiana topographic quadrangle.**

Table 1. Cultural resources identified by the Phase I cultural resources survey and archeological inventory for the proposed Thompson Creek Energy Center, West Feliciana Parish, Louisiana.

LOCUS NUMBER	LOCUS SIZE	UTM LOCATION & ELEVATION[1]	CULTURAL AFFILIATION	NUMBER OF ARTIFACTS
Locus TC-01	35 x 20 m	N660978 E3398741 28.0 m	Undetermined Prehistoric	2
Locus TC-02	N/A (isolate)	N660993 E3398868 27.4 m	Undetermined Prehistoric	1
Locus TC-03	N/A (isolate)	N661294 E3398840 30.5 m	Undetermined Prehistoric	1
Locus TC-04	45 x 20 m	N661368 E3398892 30.5 m	Undetermined Prehistoric	2
Locus TC-05	N/A (isolate)	N661384 E3398763 30.5 m	Undetermined Prehistoric	1
Locus TC-06	N/A (isolate)	N661384 E3398674 28.0 m	Undetermined Prehistoric	1
Locus TC-07	20 x 20 m	N661533 E3398688 23.5 m	Historic	2
Totals				10

[1] All Loci are positioned on the USGS 7.5" Port Hudson topographic quadrangle in UTM Zone 15 and in irregular Sections 47 and 48 of Township 4S, Range 2W. Elevations provided in meters NGVD of 1929.

The paucity of cultural material, the absence of temporally and culturally diagnostic artifacts, and the lack of intact cultural deposits demonstrate that none of the seven newly identified cultural resource loci possesses the qualities of significance as defined by the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]). The proposed Thompson Creek Energy Center project will have no adverse effects on cultural resources listed on or eligible for the National Register of Historic Places. No additional testing of the proposed Thompson Creek Energy Facility is recommended.

Organization of the Report and Project Personnel

This document presents the results of the archival and field research conducted by R. Christopher Goodwin & Associates, Inc. The following seven chapters in this report present, in order, a description of the natural setting of the project area; an overview of the regional prehistory; the historical context; a review of all previously conducted archeological research completed in the project vicinity; the research design and field methods used to complete this Phase I investigation; the project results, and, finally, the recommendations derived as a result of this undertaking. A catalog of the cultural materials recovered by the Phase I fieldwork is provided in Appendix I. The proposed Scope of Work is contained in Appendix II, and an Unexpected Discoveries and Emergency Procedures plan is included as Appendix III.

Mr. William P. Athens, M.A., R.P.A., served as Principal Investigator for the project. Jon C. VandenBosch, Ph.D., R.P.A., served as Project Manager. The fieldwork was completed with the assistance of Ms. Alicia Ventresca, M.A., Ms. Stephanie Van Buskirk, B.A., and Mr. Patrick McCloskey, B.A. Ms. Susan Barrett Smith, M.A. authored the historic context chapter, and Mr. Karl Huebchen, B.A. compiled the discussion of the previous investigations. The maps and graphics used in this report were prepared by Ms. Shirley Rambeau, B.A. Ms. Meg Thornton, M.A. conducted the artifact analysis and she currently is preparing the materials for permanent curation. Ms. Heidi R. Post, B.A., managed all aspects of report production; she was assisted by Ms. Tina Gaspard, B.A., and Ms. Mary Koski, B.A.

CHAPTER II

NATURAL SETTING

Introduction

The environment often exerts a strong influence on the nature, distribution, and preservation of archeological deposits. An overview of the environmental setting of the proposed Thompsons Creek Energy Center project area is provided in this chapter. Specifically, this chapter provides a discussion of the physiography and geomorphology, and the soils common to in the project area; in addition, descriptions of the climate and the major floral and faunal communities of the project area are included.

Physiography and Geomorphology

The project area is situated within the Central Gulf Coastal Plain section of the Coastal Plain physiographic province, which extends from western Florida to northeastern Mexico. The project area is positioned in the Florida Parishes of Louisiana, which consists of West Feliciana, east Feliciana, East Baton Rouge, St. Helena, Livingston, Tangipahoa, Washington and St. Tammany Parishes. The Central Gulf Coastal Plain section is a relatively youthful, recently emergent, terraced coastal plain. More specifically, the project area is situated along the western edge of the bluffs that overlook the active Mississippi River channel (Figure 1). Ball's Bluff, upon which the proposed project is positioned, is that part of the Mississippi River Bluff that lies immediately north of the point where Thompson Creek cuts through the bluff to enter the Mississippi Valley. Ball's Bluff has a maximum elevation that approaches 42.6 m (140 ft) National Geodetic Vertical Datum (NGVD), and it is a highly dissected upland landform, especially when compared to the bluff top to the east and across Thompson Creek.

The project area varies in elevation from approximately 15.2 m (50 ft) NGVD at the location of the proposed substation, to almost 32.0 m (105 ft) NGVD atop the bluff that serves as the location of the proposed electric generation facility. Each of the proposed project items are situated within the Thompson Creek drainage. Thompson Creek lies approximately 0.5 km (0.3 mi) south and east of the project area, and it enters the Mississippi River approximately 6.0 km (3.7 mi) south of the proposed project area. The western one-half of the project area, however, drains into Alligator Bayou; the bayou flows southward across the Mississippi River valley floor at the foot of the bluff and enters Thompson Creek approximately 1.6 km (1.0 mi) south of the project area.

The Central Gulf Coastal Plain section that encompasses the Florida parishes and the Thompson Creek Energy Center project area is composed of three coast wise trending landforms. From north to south these consist of the Uplands Complex, the Intermediate Complex and the Prairie Complex. Each of these major formations has been capped by thick layers of eolian silts (loess).

The Thompson Creek Energy Center project is positioned at the interface between the southern edge of the Uplands Complex which is composed of chert gravels, and interbedded sand, silt and clays, and the Intermediate Complex. The Uplands Complex was deposited on Tertiary age or older surfaces, and it likely formed during the Pliocene, though it may have

formed as early as the Miocene (Autin et al. 1991). The Upland Complex includes the Citronelle Formation, which also is known elsewhere as Lafayette gravel, Grover Gravel, and Mounds Gravel. The Citronelle Formation/Upland Complex represents the erosional remnants of glacial outwash (Autin et al. 1991). It consists of graveliferous deposits that measure between a few meters to over 100 m (328.1 ft) in thickness, and it is expressed as deposits that cap hilltops or well dissected interfluve ridge crests (Autin et al. 1991). The chert gravels of the Citronelle Formation may be derived from the Ouachita Mountains of central Arkansas (Kesel 1987:12:Figure 4). The numerous chert gravel deposits that outcrop from the Citronelle Formation represent important sources of raw material used to produce stone tools during prehistoric times, and early prehistoric sites often are located near these gravel outcroppings (Gagliano 1963; KREMG 1982, 1984). More recently, channel gravels, probably destined for use in construction, have been harvested from Big Bayou Sara and Thompson Creek (Woodward and Gueno 1941), and at the base of the bluff along Thompson Creek (Figure 1).

The Intermediate Complex is situated between the Upland Complex to the north and the Prairie Complex to the south. It is a parallel coast-trending series of formations, with limited surface exposure. Previous designations for the Intermediate Complex include the Port Hudson Formation (Hilgard 1866, 1869; Harris and Veatch 1899), the Columbia Formation (McGee 1891; Clendinin 1892), the St. Elmo Terrace (Matson 1916), the Lissie Formation (Doering 1935, 1956), the Second Terrace (Fisk 1938a), the Montgomery Terrace (Fisk 1938b), the Intermediate Terrace(s) (Parsons 1967; Snead and McCulloh 1984), the Humboldt terrace, the Henderson terrace, and the Irene Terrace (Durham et al. 1967). In the Florida Parishes, the deposits of the Intermediate Complex consist of a fining-upward sequence capped by laminated clay, and overlain by a distinctive geosol and loess (Autin et al. 1991:556; Saucier 1994:170). A basal member of sand and gravel is present within the Intermediate Complex, but this sequence is exposed only rarely. The terraces of the Intermediate Complex are moderately dissected, although this characteristic is less pronounced than in the bordering Upland Complex (Mossa 1989:14). The Intermediate Complex is topographically higher, and it exhibits greater slopes than the Prairie Complex situated to the south. Structural movements along local faults, such as those identified at Irene (Durham et al. 1967; Snead and McCulloh 1984), may have influenced morphologic expressions of the surfaces of the complex. According to its relative stratigraphic and topographic position, the complex is thought to date from the late Early Pleistocene to the Sangamon interglacial (ca. pre-1.3 million to 125,000 years ago) (Autin et al. 1991:555-56; Saucier 1994:218-20).

The Prairie Complex is a low-relief, constructional landform oriented predominately east-west across southeastern Louisiana that extends southward from the Intermediate Complex. It includes multiple depositional units including fluvial, colluvial, deltaic, estuarine, and marine deposits; therefore, it varies greatly, ranging from fine grained beach and barrier sand, to massive backswamp clays (Autin et al. 1991:556: Saucier 1994:173). Separated by erosional unconformities, these units range in age from pre-Wisconsinan (pre-78,000 before present [B.P.]) to Late Wisconsinan (ca. 12,000 B.P.) (Saucier 1994:173).

A significant geomorphic process in operation near the project area is the mass movement of soils by lateral channel bank erosion of the Mississippi River. A figure in Brunsden and Kesel (1973:Figure 3) illustrates the extent of the erosion between ca. 1700 and 1973 in the vicinity of the project area. Since 1883, lateral erosion of the east bank of the Mississippi River just above Profit Island Chute has been between 335 and 610 m (1,100 and 2,000 ft) or approximately 3.7 to 7.0 m (12 to 23 ft) per year (Brunsden and Kesel 1973:582). Alligator Bayou did not assume its modern character until as late as 1722; apparently drainage from the west side of Ball's Bluff emptied directly into the Mississippi River until fairly recently.

Within the project area and the surrounding region, the dominant geomorphic process has been the deposition of wind blown silt (loess). At least two episodes of loess deposition resulted in the blanketing of much of the Florida Parishes by wind blown silts during the Wisconsinan (Autin et al 1991, McDaniel 1990,

Miller et al. 1984, Saucier 1981). The Sicily Island Loess was deposited sometime around 75,000 - 90,000 years ago during the Early Wisconsinan; it was laid down across the northern portion of the Florida Parishes. The Peoria Loess was deposited during the Late Wisconsinan between 22,000 and 12,000 years ago, and it is found along a narrow north-south belt situated just east of the Mississippi River (Autin et al 1991, McDaniel 1990, Miller et al. 1984, Saucier 1981). Each of those loess deposits is represented by an eastward thinning mantle of loess that measured 3 m (9.8 ft) or more in thickness near the project area. The thickest portion of the eastward thinning loess was deposited at the eastern valley wall of the Mississippi River, on which the project area is positioned. The Siciliy Island and Peoria Loesses have a combined depth of up to 9 m (29.5 ft) in this area (Mossa and Autin 1989). These loess deposits serve as the parent material for most of the surface soils developed on loess deposits within the project area.

Soils

A report of the soils of West Feliciana Parish is not yet complete. The preliminary soil unit maps and nontechnical descriptions of the soils, from which the parish soil survey will be produced, was used to compile the following discussion. The soils in the project area belong to the Southern Mississippi Valley Uplands. The thick layers of Wisconsinan age loess provide the parent material for the soils of the project area. These two loess deposits include over 50 distinct soil series, that are classified as members of the alfisol, mollisol and inceptisol orders of soil (Autin et al. 1991). Although geosols formed atop the Sicily Island Loess when it was exposed, the surface soils within the project area formed from the mantle of Peoria Loess that covers the region.

Feliciana and Natchez silt loams occur on strongly sloping to steep upland side slopes and escarpments. These are moderately permeable soils that typically have medium natural fertility. Feliciana soils are medium acid to strongly acid, and they have medium or moderately low natural fertility.

Loring and Olivier silt loams are situated on the level to gently sloping surfaces of the broad flats and slight depressions of the escarpments along the east side of the Mississippi River, and they are poorly to moderately well drained (Dance et al. 1968). Olivier soils tend to have a surface layer of grayish-brown silt loam and a yellowish-brown silty clay subsoil mottled with gray. Olivier soils are medium to very strongly acid and they have low or medium natural fertility; Loring soils have a surface layer of brown silt loam and a brown silty clay loam subsoil (Dance et al. 1968:4). Additionally, Olivier and Loring soils have a fragipan in the subsoil starting at a depth of approximately 0.6 m (2 ft). The fragipan hinders root penetration and creates a seasonally perched water table.

The Morganfield and Bigbee soils are positioned on low terraces and along floodplains of minor drainages of the area; they are often flooded for brief periods. Morganfield soils are situated along the floodplains of minor drainages; they are well drained loamy soils with moderate permeability. Bigbee soil, however, tends to be sandy throughout the profile, rapidly permeable, and excessively drained.

Finally, Weyanoke silt is a well drained soil that occurs on gentle slopes of convex ridges near the toes of the escarpments and along local stream terraces (e.g., Thompson Creek). Weyanoke silt is moderately permeable and has medium natural fertility. It is rarely flooded, though the water table may lie at shallow depths during winter and spring.

Flora

The project area is situated within the upland hardwood forest region, but within 1 km (0.6 mi) of the bottomland hardwoods and cypress forest region (Brown 1945, 1980:xxxiv). Some of the floral species present in the upland hardwood forest also are present in some of the drier portions of the bottomlands. More water-tolerant species would be found in (seasonally) inundated portions of the Mississippi River, Thompson Creek and Alligator Bayou, and other minor tributaries. This complex mosaic of seasonally overlapping habitats results in a greater variety of species than would be present in a more uniform environment.

Trees common to the upland hardwoods include sweetgum (*Liquidambar styraciflua*), white, cherrybark, water, shumard red, and post

oaks (*Quercus alba, Q. falcata var. pagodaefolia, Q. nigra, Q.shumardi, and Q. stellata*), white ash (Fraxinus americana), tulip tree (*Lirodendron tulipifera*), cucumber tree (*Magnolia acuminate*), bitternut and shagbark hickories (*Carya cordiformis and C. ovata*), sugar maple (*Acer saccharinum*), beech (*Fagus grandifloria*), black cherry (*Prunus serotina*), tulip tree (*Lirodendron tulipifera*), dogwood (*Cornus* sp), and redbud (*Cercus canadensis*) (Brown 1941, 1980; Brown and Kirkman 1990).

In the nearby Mississippi River Valley, the bottomland hardwoods and cypress forest includes sweetgum (*Liquidambar styraciflua*), cherrybark, willow, cow, and Nutall oaks (*Quercus falcata var. pagodaefolia, Q. phellos, Q. prinus, and Q. texana*), American elm (*Ulmus americana*), winged elm (*Ulmus alata*), persimmon (*Diosyros virginiana*), cottonwood (*Populus deltoides*), American sycamore (*Platanus occidentalis*), black willow (*Salix nigra*), honey locust (*Gleditsia triacanthos*), water locust (*Gleditsia aquatica*), and hackberry (*Celtis occidentalis*) (Brown 1980; Brown and Kirkman 1990).

All of these woody species, from both habitats, functioned as sources of fuel and building material, and for tool manufacture during both historic and prehistoric times. Arboreal species like locust, tulip tree, sycamore, hickory, elms, and oaks were sold or used locally for lumber. The wood from honey and water locust is very strong and was used for fence posts. Young black willow twigs were woven into baskets and wicker furniture, while white oak, split into fine strips was used for basketry. Wine and beer barrels also were produced from white oak lumber. In addition, American elm wood was steamed and bent into forms for barrel and wheel hoops, veneer, and baskets (Brown and Kirkman 1990:124).

The wild fruits and nuts from hardwood forests were important subsistence resources for animals and probably humans. The nuts from various oak, hickory, and beech species (*Quercus* spp., *Carya* spp., and *Fagus* spp.) served as a good source of winter forage for deer, turkeys, and domestic animals. The fruit and nut bearing trees would have been valuable sources of seasonally abundant food for native populations. Persimmon (*Diospyros virginiana*) and black cherry (*Prunus serotina*) fruits were dried or made into beer (in the case of cherries). "An interesting and important contribution may have been [persimmon's] attraction for opossums. The animals flock to the trees in fall and are easily caught, sometimes several at a single tree" (Hillard 1972:90). Giant cane (*Arundenaria gigantea* and *A. tecta*), grown in the forest breaks, was used by the early settlers to graze their hogs and cattle on the young cane shoots. Cane also served as an important source of raw materials for basketry, fishing poles, and cane bottomed chairs. Climbing plants, such as grapes ([*Vitus* ssp.] especially muscadine grapes) and blackberries (*Rubus* ssp.) probably were collected for consumption or made into jams, pies, and/or wines. Black cherries (*Prunus serotina*) were an important ingredient in many home health remedies (Moerman 1986:373-375). Other medicinal plants present in this environment include sassafras (*Sassafras albidum*), pokeweed (*Phytolacca americana*), and catbrier (*Smilax bonx-nox*).

Fauna

It is difficult to assess how numerous some animal species were prior to nineteenth and twentieth century logging, farming, and marsh drainage. Certain birds and mammals, such as white-tailed deer (*Odocoileus virginianus*) , rabbits (*Sylvilagus* spp.), and bobwhite quail (*Colinus virginianus*) thrive in disturbed habitats, such as clearings produced by farming and timbering operations. Therefore, the modern distributions probably reflect higher populations than would have existed prehistorically.

Most of the terrestrial animal species present in the project area moved freely between the upland and bottomland environments. Among the game species that have occupied the project vicinity are white tailed deer (*Odocoileus virginianus*), black bear (*Ursus americanus*), raccoon (*Procyon lotor*), river otter (*Lutra canadensis*), eastern and swamp rabbits (*Sylvilagus floridanus* and *S. carolinensis*), gray and fox squirrels (*Sciurus carolinensis* and *S. niger*), opossum (*Didelphis virginiana*), alligator (*Alligator mississippiensis*), wild turkey (*Melwagris galloparo*), and quail (*Colinus virgianus*) (Ransom 1981; Lowery 1974). Deer and bear were especially important faunal resources to Native Americans; the meat served as food, the bones

were made into a variety of tools and ornaments, and the hides were an important component of clothing (Swanton 1946).

The project area is situated along the Mississippi Flyway, so during the spring and fall, a huge variety of migratory waterfowl inhabited the Mississippi River Valley and its surrounding uplands (Ransom 1981). Migratory waterfowl such as ducks, geese (both members of the Anatidae family), as well as snipes (*Gallinago gallinago*), plover (Charadriidae family), bobwhite quail (*Colinus virginianus*), morning doves (*Zenaida macroura*), and passenger pigeons (*Ectopistes migratorius*) were hunted. Turkey, however, probably were the most important source of avian food, and their bones and feathers were used for a variety of tools and decorative items (Swanton 1946).

Aquatic and semi-aquatic faunal resources are numerous and vary throughout the project area. Some of the more important game fish available in the Mississippi River and Thompson Creek include white and yellow bass (*Morone chrysops* and *M. mississippiensis*), carp (*Cyprinus carpio*), various catfish species (*Ictalurus* and *Pylodistis* spp.), white crappie (*Promoxis annularis*), freshwater drum (*Aplodinotus grunniens*), garfish (*Lepisosteus* spp.), sauger (*Stizostedoin canadensis*), and shads (*Dorosoma* spp.) (Ransom 1981).

Other aquatic sources of protein included softshell turtles (family Trionychidae), common snapping turtles (*Chelydra sepentina*), alligator snapping turtles (*Macroclemys termmicncki*), various frogs (Family Ranidae), Louisiana red crawfish (*Procambarus clarki*), and freshwater Unioncean clams (Ransom 1981).

Climate

The project area has a humid subtropical climate with prevailing southerly winds that bring abundant moisture from the Gulf of Mexico (Dance et al. 1968). Movement of air from the Gulf of Mexico prevents the temperature of the region from varying greatly throughout the year. The average annual highest temperature in Baton Rouge is 36.7° C (98° F), and the average annual lowest temperature is -6.1° C (21° F) (Dance et al. 1968). July and August are the hottest months of the year with an average daily maximum temperature of 32.8° C (91° F); January is the coldest month with an average daily minimum temperature of -3.3° C (26° F) (Dance et al. 1968). A maximum temperature of 43° C (110° F) was recorded in August, 1909, in Baton Rouge; a low of -16.6° C (2° F) was recorded in February 1899 (U.S. Department of Commerce 1988, U.S. Army Corps of Engineers 1989:1:10). The average date of the first temperature below 0° C (32° F) is November 22, and the average date of the last such temperature in the spring is February 20 (Dance et al. 1968).

The average annual normal rainfall at Baton Rouge is 141.7 cm (55.8 in), though one year in ten will have less than 100.8 cm (39.7 in) or more than 179.8 cm (70.8 in) (Dance et al. 1968; U.S. Army Corps of Engineers 1989). Although the precipitation is sufficient for growing a wide variety of crops, it is unevenly distributed throughout the year; rainfall is inadequate during some periods of the year and excessive during others (Dance et al. 1968:78). July is the wettest month with a normal average of 18.0 cm (7.1 in), and October is driest with a normal average of 6.6 cm (2.6 in). The greatest 24-hour rainfall recorded in nearby East Baton Rouge Parish, 36.6 cm (14.4 in), occurred on August 2, 1983, and it was recorded at the Sherwood gauge in Baton Rouge. Snowfall is rare in the project area (U.S. Department of Commerce 1988, U.S. Army Corps of Engineers 1989). Occasionally, spring thunderstorms produce rainfall at a rate of 2.5 cm (one inch) per hour, and they may cause flooding (Lee 1985, U.S. Army Corps of Engineers 1989:1:41-48).

CHAPTER III

PREHISTORIC CULTURAL SEQUENCE

Introduction

The Thompson Creek Energy Center Project is positioned atop Balls Bluff that overlooks the Mississippi River to the west and Thompsons Creek to the east, in West Feliciana Parish, Louisiana. West Feliciana Parish, along with East Feliciana, St. Tammany, Washington, Tangipahoa, St. Helena, Livingston, and East Baton Rouge Parishes, is one of the eight Florida parishes, that also includes that constitute Management Unit IV as defined in *Louisiana's Comprehensive Archaeological Plan* (Smith et al. 1983). The prehistory of Management Unit IV has been documented from circa (ca.) 12,000 - 300 B.P.; this period has been divided into four general archeological stages. These four stages (Paleo-Indian, Archaic, Woodland, and Mississippian) represent developmental segments characterized by dominant patterns of subsistence and technology (Kreiger 1953; Willey and Phillips 1958). Each stage consists of a sequence of chronologically defined periods, which may be sub-divided into phases based on sets of artifacts and other cultural traits characteristic of a particular geographic region (Jenkins 1979; Walthall 1980). While different systems have been used to organize and describe the culture history of the region (e.g., the Paleo-Indian, Meso-Indian, and Neo-Indian eras used by Neuman [1984]), the syncratic stage-period-phase system described by Willey and Phillips (1958) will be used in the following discussion. In a recent model for the prehistoric sequence of this region, eight cultural units have been designated; these units are the Paleo-Indian, Archaic, Poverty Point, Tchefuncte, Marksville, Troyville-Coles Creek, Plaquemine, and Mississippian (Smith et al. 1983). Other recent research (e.g., Kidder 1988), however, suggests that the Plaquemine culture was actually a variant phase of the Emergent Mississippian period; it will be discussed as such in this chapter.

Paleo-Indian Stage (12,000 - 8000 B.P.)

Initial human occupation of the southeastern United States generally is believed to have occurred sometime between 10,000 and 12,000 years ago (10,000 - 12,000 B.P.). Paleo-Indian sites are characterized by a distinct assemblage of lithic tools that includes fluted and unfluted lanceolate projectile points, unifacial end and side scrapers, gravers, and spokeshaves.

The earliest Paleo-Indian culture identified in North America has been named "Clovis." In the western United States, Clovis sites appear to fall within a relatively narrow time range, between 10,900 and 11,500 B.P. (Haynes 1991; Story et al. 1990:178). While the evidence for earlier "pre-Clovis" or "pre-projectile point" occupations continues to be debated, no earlier sites have been documented convincingly in North America (Humphrey and Stanford 1979). The smaller, fluted Folsom points, found in the Great Plains and Southern Plains, and unfluted Midland projectile points, were once thought to postdate the Clovis culture; however, accepted radiocarbon dating of numerous Folsom components in Texas produced dates ranging from ca. 10,000 to 11,000 B.P. (Largent et al. 1991:323-332; Story et al. 1990:189). These dates suggest that the Folsom culture may be partially contemporaneous with Clovis culture. The lithic tool assemblage of the Clovis and Folsom cultures, generally is referred to as the Llano complex.

Similar to the Llano complex, the Plano complex represents a Southern Plains tradition. In East Texas and Louisiana, the Plano complex is represented by unfluted lanceolate projectile points such as the Plainview, Firstview, Hell Gap, and Angostura types. These types initially were thought to be variants of the Clovis point, but radiocarbon dating suggests a later temporal placement. Current data place the Plano complex between ca. 8000 and 10,100 B.P. (Turner and Hester 1985:66, 141). Plano-type artifacts have been recovered throughout Louisiana (e.g., Cantley and Kern 1984; Gagliano 1963:12; Hillman 1990:206-207).

Another Paleo-Indian tradition identified in North America is the Cody complex. The Cody assemblage includes stemmed, lanceolate projectile points such as the Scottsbluff and Eden types, and the Cody knife, a stemmed knife with an oblique blade. Cody complex bifacial tools usually are identifiable by the presence of fine comedial pressure flaking. The uplands in the Texarkana region of northwestern Louisiana, northeastern Texas, and southern Arkansas have produced relatively large numbers of Cody complex artifacts (Gagliano and Gregory 1965:62-77; Story et al. 1990:209), but reliable radiocarbon (^{14}C) dates have not conclusively dated the complex. These ^{14}C dates range from 9100 to 10,200 B.P. (Story et al. 1990:209), although Turner and Hester (1985:149) date Scottsbluff projectile points from ca. 8650 to 9120 B.P.

Paleo-Indian peoples are thought to have been highly mobile hunter-gatherers who resided in small bands or in extended family groups. The formerly prevalent notion that characterized the Paleo-Indian populations as specialized big game hunters seems less tenable today in light of more recent information from a more inclusive set of Paleo-Indian sites. While sufficient evidence exists to document Paleo-Indian exploitation of large mammals (megafauna), including mammoth, mastodon, bison, caribou, and elk, at sites in the western and northern United States, kill sites are rare in the Southeast (Webb et al. 1983). The presence of Clovis-like fluted projectile points in the southeastern United States is thought to reflect contemporaneity with Clovis sites recorded in the western and northern parts of the country. Whether this also suggests that big game hunting was a dominant adaptive strategy in the Southeast is less certain, because of the environmental differences and the range associated with most megafauna. Excavations at the Kimmswick site, in southeastern Missouri, however, produced Clovis projectile points in direct association with disarticulated bones of mastodon. That evidence suggests that Southeastern Paleo-Indian populations did exploit large Pleistocene mammals at least occasionally (Graham et al. 1981). Although there is little data upon which to base a dietary reconstruction, Paleo-Indian subsistence throughout the Southeast is believed to have encompassed a broad spectrum of resources, including fish, fowl, deer, small mammals, nuts, and gathered plants (Smith 1986b:9-10; Steponaitis 1986:369; Walthall 1980:36). The exception possibly could be the Folsom culture. Folsom artifacts have been associated consistently with bison kill sites on the Great Plains. The lack of faunal remains associated with Folsom finds in eastern Texas and Louisiana is due mainly to the highly acidic nature of the soils and the moist climate, but it precludes insight into more general subsistence strategies. The Folsom culture could represent an adaptation to a specialized hunting strategy associated with the cyclical migration of large herds of bison (Story et al. 1990:189).

Most of the archeological evidence associated with the Paleo-Indian presence in the Southeast is limited to diagnostic projectile points that have been recovered from the surface (Mason 1962). In the lower Mississippi valley, Paleo-Indian projectile points have been recovered along valley margins, but rarely in the alluvial valley or along the coastal plain; distributional studies indicate that Paleo-Indian sites in the eastern United States tend to be located on eroded terrace and plateau surfaces (Walthall 1980). Perhaps the best documented area in the lower Mississippi valley is Maçon Ridge. Located in northeast Louisiana, Maçon Ridge represents a relict Pleistocene braid plain that until recently was not known to contain sites older than the Late Archaic period (Saucier 1981). Hillman (1990), however, recently collected information from 121 sites on the Maçon Ridge. Investigations at these sites have produced more than 1,000 Paleo-Indian and "epipaleoindian" projectile points or knives, including 272 Dalton-Meserve, 39 Hardin, and over 400 San Patrice types. Hillman concluded that Early and Middle Paleo-Indian occupation of

Maçon Ridge was sporadic or seasonal, possibly reflecting the somewhat inhospitable conditions caused by the excessive accumulation of windblown dust across open grasslands during the formation of the loess hills (Hillman 1990). The distribution of recorded sites suggests that Maçon Ridge was occupied most intensely during the Late Paleo-Indian and Early Archaic periods. During the Late Paleo-Indian period, hunting and base camps were located adjacent to streams, ponds, or sloughs, on landforms generally no more than 1 m (3.3 ft) above the water source, even when higher elevations or ridges were located in the immediate vicinity.

By the Early Archaic, settlement had shifted to the higher elevations, possibly reflecting an environmental transformation of Maçon Ridge from open grasslands to open woodlands (Hillman 1990). Brain (1983) states that Paleo-Indian projectile points have been found along relict channels of the Mississippi River and remnant Pleistocene surfaces in the flood plain that predate ca. 9,000 B.P. In Louisiana, Paleo-Indian sites have been recorded along Tertiary upland ridges and uplands/floodplain bluffs (Guy and Gunn 1983); Clovis, Folsom, Scottsbluff, and Plainview projectile points have been recovered from the surface of these sites. Although the majority of these projectile points have been found in northern Louisiana, a few have been recovered from late Pleistocene Prairie Terrace deposits in southern Louisiana.

Written in 1983, *Louisiana's Comprehensive Archaeological Plan* documented only two Paleo-Indian sites (the Jones Creek site [16EBR13] and the Palmer site [16EBR26]) within Management Unit IV (Smith et al. 1983). Located in East Baton Rouge and East Feliciana parishes, these sites demonstrate the presence of Late Paleo-Indian sites within Management Unit IV, and in proximity to the current project area. Additionally, a Dalton point and a pair of unfluted Clovis points were recovered from the Garcia Site (160R34), southeast of Lake Pontchartrain. The recovery of these points suggests a Paleolithic to Early Archaic occupation of this area. Lake Pontchartrain represented the shoreline of the Gulf of Mexico during the Pleistocene period, and it is likely that a majority of the Paleo-Indian stage sites in this alluvial area are presently underwater. More intensive research is needed to define the nature and extent of these occupations.

Archaic Stage (8000 - 3000 B.P.)

The term "Archaic" first was used as a description for the pre-ceramic cultures that followed the Paleolithic stage (Ritchie 1935). Near the end of the Pleistocene, the climate became warmer and drier, and the sea level rose. These changes created environmental pressures that resulted in a combination of technological and social changes (Willey and Phillips 1958), including a shift to diversified resource and food procurement strategies (Haag 1971). Caldwell (1958) termed this hunting and gathering specialization as "maximum forest efficiency" Brain (1971) adapted this phrase to "maximum riverine efficiency," in reference to southeastern riverine and coastal communities. Archaic peoples moved their settlements on a seasonal basis to exploit a home range defined by the availability of nuts, fruits, fish, game, shell fish, and other natural resources (Muller 1978). Archaic populations apparently exploited a greater variety of terrestrial and marine species than their Paleo-Indian predecessors. Many populations with successful strategies during the Archaic sequence went on to develop the first quasi-permanent settlements (Neitzel and Perry 1978), and the increased number of sites dating from the Archaic stage suggests an increase in population throughout the area (Jenkins 1974; Muller 1978).

The Paleo-Indian to Archaic stage transition was accompanied by a change in projectile point morphology. These changes included the emergence of a wide variety of notched and stemmed projectile point forms, and the disappearance of the fluted projectile point. Nevertheless, evidence suggests continuity between the adaptations of the Paleo-Indian and the later Archaic peoples who occupied the deciduous forests of the region (B. Smith 1986). The Archaic stage can be divided into three subdivisions or periods. The Early Archaic, Middle Archaic, and Late Archaic periods are marked by substantive changes in projectile point morphology, as well as by changes in the composition of general artifact assemblages.

Early Archaic Period

In the Southeast, the Early Archaic period generally dates from ca. 8000 to 10,000 B.P.; regional variation affects the assignment of dates, especially during the transitional period between the Late Paleolithic and the Early Archaic.

Dalton projectile points were the temporal successors of Clovis projectile points and date from 9900 to 10,500 B.P. in Arkansas and Missouri (Goodyear 1982:382) and from 9000 to 9700 B.P. in northwestern Alabama (DeJarnette et al. 1962; Griffin 1974). Dalton, Beaver Lake, Hardin, and Lost Lake projectile points were recovered from the "Dalton Zones" at the Olive Branch site, in Alexander County, Illinois; these strata lay immediately above material that date from ca. 9975 B.P. (Gramly and Funk 1991:29).

Dalton projectile points occasionally are recovered in association with bifacially chipped stone adzes that may represent woodworking tools (Goodyear 1974:41-42). Chipped and groundstone celts, probably the functional equivalent of Dalton adzes, have been recovered from the Kirk Horizon in Zone 16 at the St. Albans site and from Early Archaic sites in the Little Tennessee River valley (B. Smith 1986:14). In Louisiana, artifacts associated with the Dalton culture appear to be restricted to the northern portion of the state.

Some of the earliest recognized Terminal Paleo/Early Archaic projectile point types identified in Louisiana are the San Patrice, Keithville, and Pelican forms (Webb et al. 1971). Previously ascribed to northwestern Louisiana, northeastern Texas, and southwestern Arkansas, later investigations suggested that the range of the San Patrice type includes an area extending from central Texas to southwestern Alabama, and from southern Louisiana to central Arkansas (Brain 1983:32; Cantley and Kern 1984; Giliberti 1995). In southeastern Louisiana, San Patrice projectile points have been recovered from East Baton Rouge Parish (Gagliano 1963:112).

The San Patrice culture represents an adaptation of hunters/gatherers to the resources of a more restricted area. The hallmark of the San Patrice is the almost exclusive use of local lithic materials for tool production. Tool assemblages include San Patrice *var. Hope* and St. John projectile points, hafted scrapers, Albany side scrapers, unifacial scrapers, burins, and engravers (Webb et al. 1971). More recently, Keithville *var. A and B*, San Patrice *var. Geneill*, and New River projectile point types have been added to the assemblage (Brain 1983; Giliberti 1995). There have been no reliable ^{14}C dates for these types, but the morphology and stratigraphic position of these projectile point types suggest a temporal span between 8000 and 10,000 B.P. (Brain 1983:25; Story 1990:202; Turner and Hester 1985:147; Webb 1981). While Ensor (1987) hypothesized that San Patrice and related southeastern projectile point forms may have developed from earlier Dalton point forms, Story (1990:197) has suggested that both Dalton and San Patrice types evolved from the earlier fluted point traditions.

Throughout the Early Archaic, the subsistence pattern probably resembled that of the preceding Paleo-Indian stage. Early Archaic peoples traveled seasonally in small groups between a series of base camps and extractive sites, hunting deer and collecting nuts and acorns (Chapman and Shea 1981; Lentz 1986; Parmalee 1962; Parmalee et al. 1976). The extent to which the resources of the floodplain environments of the Lower Mississippi Alluvial Valley were exploited remains unknown.

The earliest recovered food processing tools, including manos, milling stones, and nutting stones, have come from Early Archaic period sites. While living floors associated with hearths, shallow pit features, and milling tools are known from the Early and Middle Archaic, there is little evidence suggestive of below-ground food storage (Steponaitis 1986:371). Much of our knowledge regarding Paleo-Indian and Archaic period subsistence is limited by problems of preservation. For example, lithic tools often are the only artifacts to survive, and they provide information only about a narrow range of activities, such as tool manufacture and maintenance, animal processing, and working of wood and bone. Although they rarely are preserved in the archeological record, clothing, baskets, and other artifacts made of perishable materials (e.g., bone, wood, antler, shell, hair, hide, plant fiber, and feathers) were no doubt important parts of the Archaic cultural tradition. Impressions of woven mats and net bags preserved in fired clay hearths from Kirk strata at the Icehouse Bottom site (40MR23) in Monroe County, Tennessee, have provided rare insight

into the richness of the Early Archaic material culture (Chapman and Adavasio 1977).

The Early Archaic cultures immediately preceding San Patrice in Louisiana are little understood. Diagnostic projectile points dating from the Early Archaic period, including Cache River, Calf Creek, Kirk, and Palmer types only have been recovered from questionable contexts, and in limited numbers. Several sites in the southeastern Louisiana region contain Early Archaic material. The Claiborne site (22HA501) is an approximately 4.5 ha (11 ac) multi-component site located on a terrace overlooking the left descending bank of the Pearl River. Site 22HA501 is known primarily for its Poverty Point affiliation, but excavations directed by Greenwell (1984:133) in 1979 produced "a variety of [unspecified] Paleo-Indian-Archaic transition and Archaic points," recovered from a single stratum that predated identified features from the Poverty Point occupation. Additional work by Bruseth (1991) reports that Kirk and Morrow Mountain points, although rare, were recovered from the site. Gagliano's (1963:12) survey of "preceramic" sites in southern Louisiana and Mississippi found that Kirk Serrated projectile points were not uncommon in the southeastern portion of the state.

Middle Archaic Period

Significant environmental changes caused by the subsidence of continental glaciation during the Middle Archaic period resulted in a warmer and drier climate; by approximately 3000 B.P., modern climatic and environmental conditions prevailed. These changes may have resulted in stronger regional diversification, which affected technological and sociopolitical organization. Technological innovations included the refinement of groundstone, and the appearance of bone and antler implements.

This period is typified by the Morrow Mountain horizon. Diagnostic artifacts include small - medium sized, triangular projectile points with short tapered stems. Morrow Mountain forms are distributed widely; they have been recovered from the eastern seaboard to as far west as Nevada, and from near the Gulf of Mexico to as far north as New England (Walthall 1980). In Louisiana, the Middle Archaic is represented by projectile points that include Morrow Mountain, Johnson, Edgewood, and possibly Calcasieu types (Campbell et al. 1990:96; Green 1991; Perino 1985:195). Excavations at 16VN791 in Vernon Parish, Louisiana, recovered evidence of a long tradition of corner notched projectile points beginning in the late Middle Archaic. It has been suggested that these, and other points in the region, were derived from types indigenous to central Louisiana (Campbell et al. 1990).

Late Archaic Period

A relative increase in the number of recorded Late Archaic sites in the United States suggests population growth during this period. Artifact assemblages are characterized by the presence of steatite vessels, groundstone, occasional fiber-tempered pottery, and stemmed, corner-notched projectile points.

In the eastern United States, the Late Archaic economy focused on a few resources, including deer, mussels, and nuts. Jenkins (1974) described a seasonal procurement strategy in Middle Tennessee that included the springtime exploitation of forested riverine areas, and the fall/winter reliance on harvested and stored foods and faunal species common to the upland areas. Archeological investigations of Late Archaic shell middens and mounds also indicate a reliance on shellfish, fish, and riverine fauna and flora (Jenkins 1974).

Archaic period sites typically are found along the boundary of Quaternary and Tertiary areas that have relatively flat or undulating bluff tops overlooking the floodplains. Within Management Unit IV, Late Archaic sites are recorded on Prairie terraces and relict levees (Gagliano 1963). Archaic style projectile points are common throughout the state; however, few of Louisiana's discrete, intact Archaic deposits have been excavated systematically, or reported comprehensively (Neuman 1984). Late Archaic sites in the west-central and northern part of the state have yielded Bulverde, Carrollton, Delhi, Ellis, Ensor, Epps, Gary, Kent, Macon, Marcos, Motley, Palmillas, Pontchartrain, Sinner, and Yarbrough projectile points. Groundstone objects recovered from these sites included celts/axes, plummets, and steatite bowl fragments (Campbell et al. 1990; Smith 1975).

The Late Archaic type site for the Pearl River phase (Gagliano 1963) is Cedarland Plantation (22HA506); this is a rangia shell midden lo-

cated near the mouth of the Pearl River and adjacent to the Claiborne site (22HA501), in southeastern Mississippi. Artifacts recovered from this site include Gary and Pontchartrain projectile point types, modified bone/antler tools, steatite vessels, utilized shell, and ornamental items (beads/plummets). A small number of clay lined fire hearths also have been identified at this location (Gagliano 1963).

Poverty Point Culture (4000 - 2500 B.P.)

Poverty Point, a transitional culture that originated ca. 4000 B.P., is best represented by Site 16WC5 in northeastern Louisiana. The site is adjacent to Bayou Macon and near several major rivers, including the Mississippi, Tensas, Ouachita, and Boeuf. This riverine location was ideal for exploiting the flow of trade goods from other regions (Jeter and Jackson 1990:142; Muller 1978; Neitzel and Perry 1978); evidence of long distance trade includes ceramics from the St. Johns River region of Florida and lithic materials from deposits in Arkansas, Illinois, Indiana, Missouri, Ohio, Oklahoma, and Tennessee (Connaway et al. 1977:106-119; Gibson 1974:26, 1979, 1994; Jeter and Jackson 1994; Lehmann 1982:11-18; Webb 1982:13-14).

The Poverty Point site (16WC5) is distinguished primarily by its large earthworks and its complex microlithic industry. The earthworks include six segmented ridges, 15 to 46 m (50 to 150 ft) wide, that form five sides of an octagon, and several other mounds scattered throughout the immediate site area. The largest mound, Mound A, may be a large bird effigy (Webb 1982).

Artifacts identified at Site 16WC5, and associated with Poverty Point culture, include atlatls, plummets, beads and pendants, micro flints and blades, clay cooking balls and figurines, and food storage and preparation containers. Containers were made of steatite, basketry, and ceramic; most ceramics were sand tempered, although some grit, clay, fiber-tempered, and untempered sherds were recovered. Webb (1982) also reported the recovery of seed processing implements, stone hoe blades, nutting stones, milling stones, and earthen ovens.

Brain (1971) identified Poverty Point culture as having been focused on bottomlands, and Webb (1982) suggested that Poverty Point sites typically are found in four types of locations. These locations include the Quaternary terraces or older land masses that overlook major stream courses, along major river levees of active or relict river channels, at river-lake junctions, and along coastal estuaries or older land surfaces located within coastal marsh areas. These settings appear to be well suited to the dual purpose of the exploitation of forest-edge resources and the transport of exotic materials. Sites range in size from large ceremonial centers to small hamlets or foraging stations.

In southeastern Louisiana, small shell middens located along the shoreline of Lake Pontchartrain exhibit Poverty Point traits and suggest seasonal and specialized adaptations to marsh environments. These sites represent two phases of Poverty Point culture: the Bayou Jasmine and Garcia phases. Bayou Jasmine phase sites are located on the western shore of the lake as well as along the natural levee ridges of the Mississippi River distributaries. Garcia phase sites are located along the eastern shore of Lake Pontchartrain. The Garcia site (16OR34), the type site for the Garcia phase, was found to contain a deposit of *Rangia* shells and midden debris. Radiocarbon dates from Bayou Jasmine Phase components cluster around 3450 B.P., while Garcia phase sites date about 1,000 years later (Gagliano 1963; Gagliano and Saucier 1963). Bayou Jasmine phase sites, such as the type site located along the western shore of the lake, exhibit Poverty Point traits exclusively (Duhe 1976). In contrast, Garcia phase sites along the eastern shore contain both bone tool and microlithic industries (Gagliano and Saucier 1963). Additionally, the Claiborne site (22HA501) is considered by Webb (1977) to be a Poverty Point regional center. In the original publication of *Louisiana's Comprehensive Archaeological Plan*, only three Poverty Point sites were documented in Management Unit IV (Smith et al. 1983).

Woodland Stage (3000 - 900 B.P.)

The Woodland stage in Louisiana is characterized by a combination of itinerant and possibly sedentary agriculture, the introduction of the bow and arrow, and the widespread use of ceramics. The Woodland stage includes the Early, Middle, and Late periods. The Early Woodland (ca. 2500 - 2000 B.P.) is represented by the Tchefuncte cul-

ture, the Middle Woodland (ca. 2000 - 1600 B.P.) is associated with the Marksville culture, and the Late Woodland (ca. 1,600 - 800 B.P.) originated with the transitional Troyville culture but is dominated by Coles Creek culture. In most parts of the region, the Woodland stage was eclipsed by the Emergent Mississippian stage.

Tchefuncte Culture (2500 - 2000 B.P.)

Tchefuncte culture was characterized by the first widespread use of pottery, although a hunting and gathering tradition, with a tool inventory similar to the Late Archaic, persisted (Byrd 1994; Neuman 1984; Shenkel 1981:23). The culture first was identified at the type site, 16ST1, located on the north shore of Lake Pontchartrain (Ford and Quimby 1945; Weinstein and Rivet 1978). Later, the Tchefuncte culture was defined by Ford and Quimby (1945) based on Work Progress Administration (WPA) excavations at Big Oak Island (16OR6) and at Little Woods Midden (16OR1-5), on the southeastern edge of Lake Pontchartrain. Originally, Tchefuncte culture was thought to be an adaptation to the southwestern Louisiana coast and to the central portion of the Vermilion River in south-central Louisiana. Tchefuncte or Tchefuncte-like ceramics now have been found in southeastern Missouri, northwestern Mississippi, the Yazoo Basin, coastal Alabama, and east Texas (Brookes and Taylor 1986:23-27; Mainfort 1986:54; Neuman 1984; Webb et al. 1969:32-35; Weinstein 1986:102). In coastal Louisiana, six phases have been designated for the Tchefuncte period. From west to east, these are the Sabine Lake phase bordering Sabine Lake in southeastern Texas and southwestern Louisiana; the Grand Lake phase in the Grand Lake and Vermilion Bay area; the Lafayette phase on the west side of the Atchafalaya basin (west of the Vermilion River); the Beau Mire phase below Baton Rouge in the Ascension Parish area, and the Pontchartrain phase encompassing Lake Maurepas and Lake Pontchartrain in the Pontchartrain Basin (Weinstein 1986:108). For the purposes of this review, a date range for the Tchefuncte period of ca. 2500 to 2000 B.P. will be used; however; research suggests that temporal differences exist even within the same region, and are quite wide in different regions (Webb et al. 1969:96; Weinstein 1986). Most agree that Tchefuncte dates from as early as 2700 B.P. in the south; in the north it is known as the Tchula period, and terminates sometime around 1900 B.P. (Gibson and Shenkel 1988:14; Perrault and Weinstein 1994:48-49; Shenkel 1974:47; Toth 1988:19). There is evidence, however, that suggests that coastal Tchefuncte sites were in existence until ca. 1700 B.P. (Byrd 1994:23; Neuman 1984:135). If these dates are correct, it implies that the last remaining coastal Tchefuncte communities were coeval with late Marksville culture (Toth 1988:27-28).

Most Tchefuncte sites are classified as coastal middens, or as inland villages or hamlets. Settlement usually occurred along the slack water environments of slow, secondary streams that drained bottomlands, floodplain lakes, and littoral zones (Neuman 1984; Toth 1988:21-23).

Tchefuncte ceramics were low-fired, and tempered with either sand or clay (Phillips 1970). The northern Tchula variant ceramics are clay/grog tempered, or temperless, and often are associated with minor amounts of distinctive, sand tempered, incised, pinched, and plain ceramic types, which may represent trade from northern Alabama (Jenkins 1982; Williams and Brain 1983). Vessel forms include bowls, cylindrical and shouldered jars, and globular pots that sometime exhibit podal supports. Many vessels are plain; however, some are decorated with punctations, incisions, simple stamping, drag and jab, and rocker stamping. Punctated types are more numerous than stamped types, but parallel and zoned banding, stippled triangles, chevrons, and nested diamonds also represent popular motifs. During the later portion of the Tchefuncte period, red filming also was used to decorate some vessels (Perrault and Weinstein 1994:46-47; Speaker et al. 1986:38; Phillips 1970).

The stone and bone tool subassemblages remained largely unchanged from the preceding Poverty Point culture. Stone tools included boat stones, grooved plummets, chipped celts, and sandstone saws; bone tools included awls, fish hooks, socketed antler points, and ornaments. In addition, some tools such as chisels, containers, punches, and ornamental artifacts were manufactured from shell. Projectile points characteristic of Tchefuncte culture include Delhi, Ellis, Epps, Gary, Maçon, Motley, and Pontchartrain (Ford and Quimby 1945; Smith et al. 1983:163).

Tchefuncte burials and artifacts suggest an egalitarian social organization. The population probably operated at the band level, with as many as 25 to 50 individuals per band. The widespread distribution of similar ceramic types and motifs implies a patrilocal residence with exogamous band marriage (Speaker et al. 1986:39).

Examination of faunal and floral remains from Morton Shell Mound (16IB3), a coastal Tchefuncte shell midden, suggests that some coastal sites were occupied on a seasonal basis, usually in the summer and autumn, and possibly during the spring (Byrd 1976, 1994:103). The preponderance of freshwater fish remains at sites such as Big Oak Island (16OR6) and Little Oak Island (16OR7) indicates a reliance on aquatic resources (Gibson and Shenkel 1988).

Marksville Culture (2100 - 1600 B.P.)

Marksville culture, named for the Marksville site (16AV1) in Avoyelles Parish, often is viewed as a localized version of the elaborate midwestern Hopewell culture (Toth 1988:29-73). Marksville peoples probably used a hunting, fishing, and gathering subsistence strategy much like those associated with earlier periods. A more highly organized social structure is implied by the complex geometric earthworks, conical burial mounds, and unique mortuary ritual system that characterize Marksville culture. Some items, such as elaborately decorated ceramics, were manufactured primarily for inclusion in burials. Burial items also include pearl beads, carved stone effigy pipes, copper ear spools, copper tubes, galena beads, and carved coal objects. Toward the end of the Marksville period, a simplification of mortuary practices is noted, possibly due to a decline in Hopewellian influences (Smith et al. 1983; Speaker et al. 1986).

The Marksville period, for the purpose of this study, is assigned an age from ca. 2100 to 1600 B.P. (Kidder 1988:52; Toth 1988:9). Radiocarbon dates associated with Marksville ceramics from other regions of the Southeast suggest that the introduction of Hopewellian traits into the lower Mississippi valley possibly started as early as 2200 B.P. and lasted to ca. 1550 B.P. (Ford 1988:63; Mainfort 1988:143-144).

Ceramic decorative motifs such as cross-hatching, U-shaped incised lines, zoned dentate rocker stamping, cord-wrapped stick impressions, stylized birds, and bisected circles were shared by both Marksville and Hopewell cultures (Toth 1988:45-50). Additional Marksville traits include a chipped stone assemblage of knives, scrapers, celts, drills, groundstone atlatl weights and plummets, bone awls and fishhooks, baked clay balls, and medium to large stemmed projectile points. A variety of exotic artifacts commonly found at Marksville sites suggests extensive trade networks. Some commonly recovered exotic items include imported copper earspools, pan-pipes, platform pipes, figurines, and beads (Toth 1988:50-73; Neuman 1984). The utilitarian material culture remained essentially unchanged, reflecting an overall continuity in subsistence systems (Toth 1988:211).

Gagliano (1963), suggests that subsistence activities were a cyclical/seasonal activity that revolved around two or more shifting camps. Shellfish collecting stations on natural levees and lower terraces were occupied and utilized during the summer months. During the winter months, semi-permanent hunting/gathering camps on the Prairie terrace were occupied.

Troyville-Coles Creek Period (ca. 1600 - 800 B.P.)

Troyville culture was named after the Troyville mound group (16CT7) in Jonesville, Louisiana. Troyville represents a transition from the Middle to Late Woodland periods that culminated in Coles Creek culture (Gibson 1984). Neuman (1984) places the beginning of the Troyville culture at ca. 1605 B.P., and Kidder (1988:57) places the beginning of the Coles Creek ca. 1200 B.P. The continuing developments of agriculture and the refinement of the bow and arrow during this time radically altered subsequent prehistoric lifeways. During the Troyville cultural period, bean and squash agriculture may have became widespread; this shift in subsistence practices may have fostered the increasing complexity of settlement patterns and social organization.

The emergence of the Coles Creek culture, distinguishable from Troyville by approximately 1200 B.P., was accompanied by significant economic and social changes in the lower Mississippi valley. By the end of the Coles Creek period, communities had increased in size and complexity; large-scale mound construction, a resumption of long-distance trade, implied the re-emergence

of a chiefdom-like society in the Southeast (Muller 1978).

The theory that subsistence based on intensive maize agriculture was a hallmark of Coles Creek culture, has recently come under scrutiny (Kidder 1992). Although Coles Creek populations exhibit tooth decay rates consistent with a diet based on starchy foods such as maize, limited archeobotanical evidence for maize in Coles Creek midden deposits suggests that consumption of some other starchy foods must have been the cause (Kidder 1992; Steponaitis 1986). The preponderance of available evidence suggests that widespread maize cultivation in the lower Mississippi valley was not practiced until after the Coles Creek period, ca. 800 B.P. (Kidder 1992:26; Kidder and Fritz 1993). Thus, while maize existed during the Coles Creek period, and has been recovered archeologically, it was not the economic basis of the society.

Earlier assumptions about the nature and extent of social and political differentiation during Coles Creek also must be reexamined. Square-sided, flat-topped mounds believed to serve as platform bases for elite structures appear first during Coles Creek. However, evidence for the elite residential or mortuary use of Coles Creek mounds prior to 1000 B.P. is elusive (Kidder and Fritz 1993; S. Smith 1986; Steponaitis 1986). Nevertheless, both the form of the platform mounds and their arrangement around plazas is possibly indicative of Mesoamerican influence (Willey and Phillips 1958; Williams and Brain 1983).

The Coles Creek peoples continued to use Troyville type ceramics, with some elaborations (McIntire 1958). The Churupa Punctated and the Mazique Incised designs, both of which are characteristic of the Troyville culture, were used by both Coles Creek and Plaquemine pottery makers (McIntire 1958). Similarly, French Fork Incised, which formed the basis for many Troyville classifications, continued to be used well into the Coles Creek period (Phillips 1970). Coles Creek peoples developed a new ceramic complex that included larger vessels and a wider range of decorative motifs (Neuman 1984). Coles Creek Incised, Beldeau Incised, and Pontchartrain Check Stamped ceramics characterize the period (Phillips 1970; Gibson 1976a, 1976b; Weinstein 1986; Weinstein et al. 1979). A distinctive decorative type, Coles Creek Incised, contains a series of parallel incised lines perpendicular to the rim of the vessel, often accompanied underneath by a row of triangular impressions (Gibson 1976a, 1976b; Phillips 1970:70; Phillips et al. 1951:96-97). Several of the ceramic motifs suggest outside cultural influences. French Fork Incised motifs and decorative techniques, for example, mimic almost exactly Weeden Island Incised and Weeden Island Punctated from the northwestern Florida Gulf Coast (Phillips 1970:84; Phillips et al. 1951:101; Willey 1949:411-422). Pontchartrain Check Stamped ceramics also appear at the same time as the resurgence of the check stamped ceramic tradition during Weeden Island III in northwestern Florida (Brown 1981:31).

Coles Creek sites primarily were situated along stream systems where soil composition and fertility were favorable for agriculture. Natural levees, particularly those situated along old cutoffs and inactive channels, appear to have been the most desirable locations (Neuman 1984). Coles Creek shell middens commonly occur in the coastal region on higher portions of natural levees (Springer 1974).

Most large Coles Creek sites contain one or more mounds. Coles Creek mounds typically are larger, and exhibit more building episodes than the earlier Marksville burial mounds. Burials occasionally are recovered from Coles Creek mounds; however, the primary function of the mounds appears to have been for non-mortuary ceremonies. At some Coles Creek sites, mounds are connected by low, narrow causeways; sometimes, plazas are associated with these multiple mound sites (Gibson 1985). The complexity of Coles Creek mound systems suggests a more complex social structure; a centralized authority and sizable labor force probably were employed to build, maintain, and utilize these mounds. The centralized authority probably belonged to a special religious class, while the general population occupied the region surrounding the large ceremonial centers (Gibson 1985; Neuman 1984; Smith et al. 1983). Small Coles Creek sites consist mostly of hamlets and shell middens, and they normally do not contain mounds.

Mississippian Stage (800 - 300 B.P.)

The Mississippian stage represents a cultural climax in terms of population growth and social

and political complexity for cultures that occupied the southeastern United States (Phillips 1970; Williams and Brain 1983). In the lower Mississippi valley, the advent of the Mississippian stage is signaled at sites along the lower Mississippi and along the northern Gulf Coast by the arrival of such traits as shell tempered ceramics, triangular arrow points, copper-sheathed wooden earspools, and maize/bean/squash agriculture from the Cahokia area (Williams and Brain 1983). Formalized site plans, consisting of large "temple mounds" and plazas, have been noted throughout the Southeast at such places as Winterville, Transylvania (16EC8), Natchez, Moundville, Bottle Creek, Etowah, and Kolomoki (Williams and Brain 1983; Hudson 1978; Walthall 1980; Knight 1984). In Louisiana Archaeological Management Unit IV, the Mississippian culture stage can be subdivided into the Plaquemine or Emergent Mississippian period (800 - 550 B.P.), and the Late Mississippian period (550 - 300 B.P.).

Emergent Mississippian Period (800 - 550 B.P.)

The Emergent Mississippian period, or Plaquemine culture, represents a transitional phase from Coles Creek culture to Mississippian culture (Kidder 1988). Interaction with the emerging Mississippian cultures of the middle Mississippi valley was probably of sufficient influence during the later part of the Coles Creek period to initiate the cultural change that eventually characterized the Plaquemine culture. The Medora site (16WBR1), described by Quimby (1951), typifies Plaquemine culture. Plaquemine peoples continued the settlement patterns, economic organization, and religious practices established during the Coles Creek period; however, agriculture, sociopolitical structure, and religious ceremonialism intensified, suggesting a shift to a more complex social hierarchy. Plaquemine subsistence probably was based mainly on agriculture, supplemented by hunting and gathering activities. Sites range from ceremonial sites with multiple mounds surrounding a central plaza, to dispersed villages and hamlets (Neuman 1984; Smith et al. 1983).

Although Plaquemine ceramics are derived from Coles Creek traditions, they display distinctive features that mark the emergence of a new cultural tradition. In addition to incising and punctating pottery, Plaquemine craftsmen also brushed and engraved vessels (Phillips 1970). Plaquemine Brushed appears to have been the most widespread ceramic type. Plaquemine ceramic types included Leland Incised, Hardy Incised, L'Eau Noire Incised, Anna Burnished Plain, and Addis Plain. By ca. 550 B.P., the Plaquemine culture apparently had evolved into a true Mississippian culture (Kidder 1988:75)

Investigations at Caney Slough East, primarily a Late Mississippian period site in Fontainebleau State Park, yielded a ceramic assemblage composed of Plaquemine, lower Mississippi valley Mississippian, and coastal Alabama/Florida ceramics. The site was interpreted either as a pure Plaquemine component or as a local group utilizing Plaquemine ceramics (Guevin et al. 1988:8-9). The presence of non-local ceramics, and the admixture of Plaquemine and Mississippian ceramics at the site tend to support the assumption that this site represents a Mississippian site with ties to the Plaquemine culture and contact with tribes far to the east. As observed from the Caney Slough East site, the contention of Neuman (1984) and others that Plaquemines culture could have lasted into the protohistoric or early contact period, is possible.

Gregory (1979) indicates that Plaquemine sites demonstrate a propensity towards lowland areas including swamps and marshes; however, *Louisiana's Comprehensive Archaeological Plan* documents only eight Plaquemine cultural period sites in Management Unit IV (Smith et al. 1983). Neuman (1984) cites Hall's observation that Plaquemine culture sites in the upper Tensas basin were located most frequently on well-drained natural levees characterized by sandy soils.

Late Mississippian Period (550 - 300 B.P.)

Between ca. 550 and 300 B.P., several traits now considered diagnostic of the Mississippian period were widespread across most of the Southeast. Such Mississippian traits include well-designed mound groups, a wide distribution of sites and trade networks, shell tempered ceramics, and a revival of ceremonial funerary practices (Griffin 1990:7-9).

Mississippian subsistence was based on the cultivation of maize, beans, and squash; the collection of local plants, nuts and seeds; and fishing and hunting of local species. Major Mississippian

sites were located on fertile bottomlands of major river valleys. A typical Mississippian settlement consisted of an orderly arrangement of village houses that surrounded a truncated pyramidal mound. These mounds served as platforms for temples or houses for the elite. A highly organized and complex social system undoubtedly existed in order to plan these intricate communities.

Ceramic types are characterized by shell tempering, an innovation that enabled potters to create larger vessels (Brain 1971; Steponaitis 1986). Ceramic vessel forms included globular jars, plates, bottles, and pots, and a loop handle is evident on many vessels. Decorative techniques include engraving, negative painting, and incising; modeled animal heads and anthropomorphic images also adorn ceramic vessels. Other artifacts in the Mississippian assemblage include chipped and groundstone tools; shell hairpins, beads, and gorgets; and mica and copper items.

CHAPTER IV

HISTORICAL DEVELOPMENT

Introduction

The currently proposed project area lies between Alexander's Creek and Thompson's Creek, approximately 1.5 mi from the Mississippi River in West Feliciana Parish, Louisiana. Throughout the eighteenth and most of the nineteenth century, however, this tract of land abutted the left descending bank of the Mississippi River, and it served as the site of an early French concession. In addition, it was situated across the river from one of the earliest and most important French communities, Pointe Coupée. Later, during the American period, the project area was included within a large cotton plantation. During the Civil War, the project area was located just 4.9 km (3.1 mi) from the site of perhaps the most important battle in Louisiana, the Battle of Port Hudson. This chapter presents an overview of the history of the project area from the time of European conquest through the twentieth century.

Historic Contact

The earliest known contact between Europeans and the aboriginal populations of Louisiana was during the 1539 - 1543 expedition of Hernando de Soto. This initial human contact was responsible for severe Native American population depletion related to epidemics of European introduced diseases (Ramenovsky 1987; Smith 1987). By the time of LaSalle's 1682 expeditions, the native populations had undergone major social reorganization. The breakdown of the complex Mississippian societies during the terminal Prehistoric period (Anderson 1990; Blitz 1991a, 1991b; Peebles and Kus 1977; Peebles and Mann 1981; Steponaitis 1991; Welch 1990), the great social and demographic reorganizations of the Protohistoric period (1539 - 1673), and the better documented, but little studied Colonial period, all contributed to researchers' difficulty in documenting cultural continuity.

Lifeways of the early historic Native Americans reflected those of the Late Mississippian and Plaquemine peoples. The Native Americans practiced subsistence agriculture, growing maize, beans, squash, and pumpkin. Agriculture was supplemented by the gathering of wild plants; hunting and fishing also remained important components of the aboriginal subsistence system. Villages described in early accounts were similar to those at Plaquemine and Mississippian sites. The larger villages featured one or more truncated pyramidal mounds surmounted by chiefs' houses and temples; the remaining villagers lived in the area surrounding the mounds and in satellite hamlets. Houses apparently were rectangular and constructed of poles placed in the ground, with wattle and daub walls and thatched roofs (Swanton 1946).

In the lower Mississippi valley, groups of Muskhogean linguistic stock were represented by the Acolapissa, Bayougoula, Chawasha, Houma, Mugulasha, Okelousa, Tangipahoa, and Washa. The Tunican linguistic group included the Tunica, who resided near Angola, Louisiana, above the current project area. As French and Spanish settlement expanded, during the eighteenth century, these groups were forced westward, or joined remnant aboriginal settlements scattered throughout the unpopulated portions of southern Louisiana (Kniffen et al. 1987).

In 1682, the French explorer Robert Cavelier, Sieur de La Salle, descended the Ohio and

Mississippi rivers from Canada to the Gulf of Mexico, claimed the entire Mississippi River Valley for King Louis XIV. He named the territory "Louisiana" to honor the monarch (Neilson 1957:863). As the French began the colonization of Louisiana, Pierre Lemoyne, Sieur d'Iberville, recorded in his journal in 1699 the first mention of the project area. When his expedition reached the 35.4 km (22 mi) curve in the Mississippi River, they chose instead to take a 6.4 km (4 mi) short cut through the channel that Iberville called *Pointe Coupée*, or the cut point. By 1722, the river had changed course, flowing through the "short cut" portage used by Iberville, and the ox-bow curve known as *la Fausse Riviére*, or False River, was created (Riffel 1983:3). The river once flowed by the project area, just opposite from the False River.

West Feliciana Parish enjoys a rich and varied heritage. One of the oldest European settlement in Louisiana, the parish was subject to French, Spanish, British and American colonial influences. Its people were from diverse ethnic backgrounds; the influence of European, African, Caribbean, Native American, and American societies can be discerned in the architecture, speech, foodways, and names of the Parish residents. In particular, this diversity has affected the development of the project area. During the early French colonial period, i.e., between 1718-1763, the area was part of the Pointe Coupée settlement. In the immediate project region, Monsieur St. Reyne (also variously spelled Sainte Reine, St. Reine) owned a large concession that extended from the Mississippi River, across Alexander's Creek past Thompson's Creek, and it included the currently proposed project tract (Figure 2).

In the area between the Comite River and the Mississippi River lies an agrarian community known since the late eighteenth century as "The Plains." The community has no precise limits. As one historian and chronicler has explained:

> The historic little community of The Plains is located approximately twenty miles north of Baton Rouge, Louisiana, on the old highway known as the Bayou Sara Road that leads to St. Francisville, and on to Natchez, Mississippi. No more than an intersection with a church, store, filling station, and a few houses, it has been for over a hundred years the hub of an area extending five miles or better in each direction (Jennings 1989:1).

The Plains community lies on a prairie that stretches from Bayou Manchac to the Felicianas. In 1704, André Pénicaut, a young French carpenter, left the following account of an early European exploration of the vicinity. He wrote:

> When we got to Baton Rouge we went ashore to hunt . . . Beyond the forest into which we had entered we found a prairie. Never in my life have I seen such great numbers of buffalo, harts, and roes . . . We killed five buffaloes, which we skinned and cut up in order to carry some to our comrades who had stayed with the boats . . . We felt so well off at that place that we remained more than ten days (Jennings 1989:4-5).

Although the Houma occupied the project area at the time of Pénicaut's visit, a rival group, the Tunica, seized the territory soon thereafter. The Tunica held The Plains when European settlement began in earnest during the late eighteenth century.

Settlement between 1717 and 1900

The first formal French settlement at Pointe Coupée was established in 1717 on the West Bank of the Mississippi River. By 1722, 10 French colonists and their families apparently resided at a Tunica village located just to the north of the French settlement, possibly in the project region. The St. Reyne concession alone contained 15 men, 5 women, 2 children and 19 African slaves, making him the single largest slaveowner on any concession above New Orleans (Hall 2000:1721 census). By 1726, the French population in the Tunica village had risen to 52, more than double the population of the Pointe Coupée settlement (21) (Riffel 1983:3-5; Hall 1992:243). Because of the strategic position of Pointe Coupée, the French established a military post there, which served as the defensive headquarters for the community after the Natchez rebellion in 1729 (Riffel 1983:6; Davis 1971:59). A continuing alliance between the French and the Tunica put both groups in danger from the Natchez Tribe, and attacks on

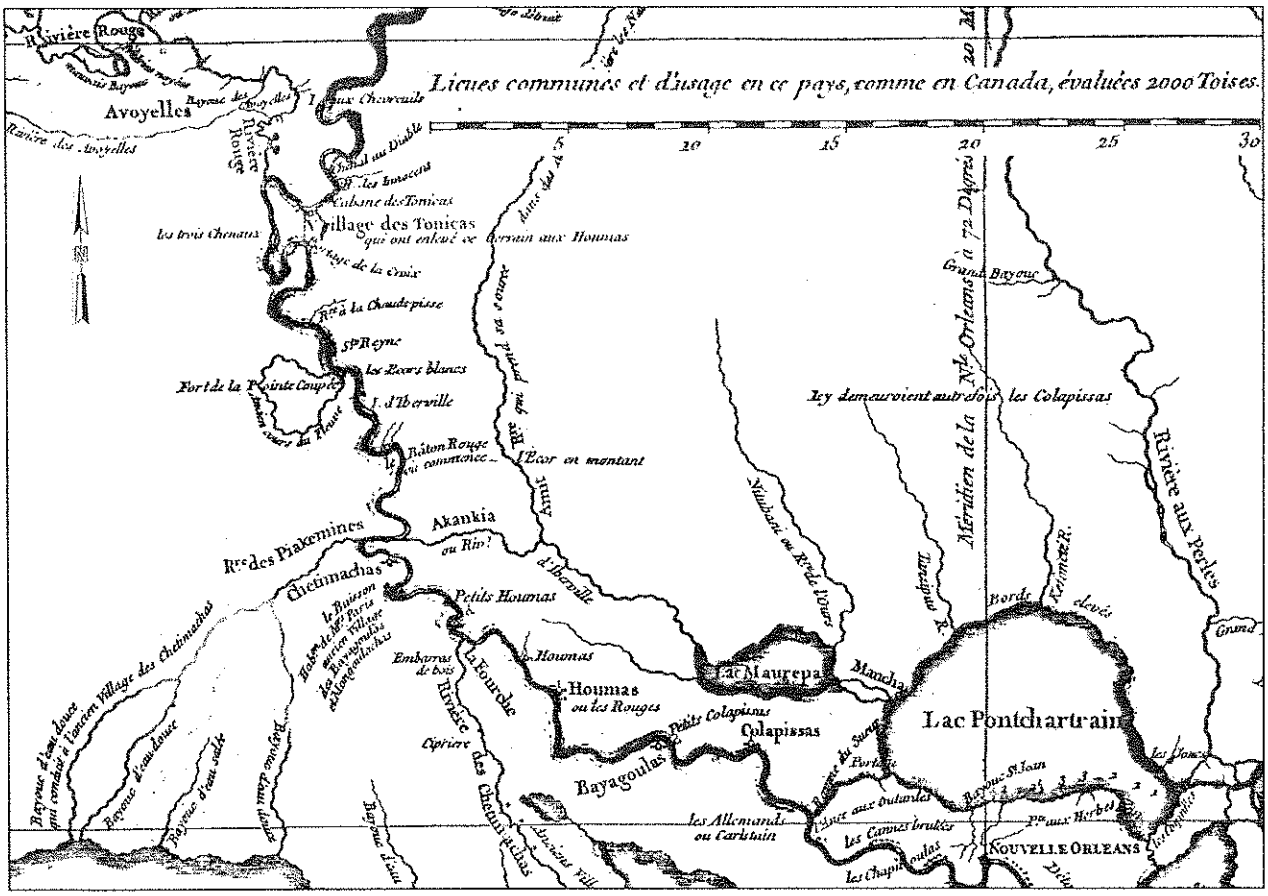

Figure 2. 1752 map d'Anville's Carte de la Louisiane" D'Anville's map ca. 1752 shows "Ste. Reyne" concession in the vicinity of the project area.

the two settlements were common. In 1731, a massacre in the Tunica village resulted in the deaths of both French and Tunica, and sporadic raids by the Natchez and Chickasaw required constant vigilance (Hall 1992:246-248). Despite these recurrent attacks, the close relationship between the French and the Tunica continued throughout the eighteenth century (Hall 1992:244), even though the Tunica population had been reduced drastically by warfare, disease, and westward migration (Davis 1971:24; Riffel 1983:19).

The Pointe Coupée community continued to grow; by 1745, the census reported that 260 whites, 391 blacks, 15 mulattos, and 23 Indians occupied the west bank of the river (Riffel 1983:4). The fort established at Pointe Coupée was enlarged and strengthened in 1760, in the midst of the French and Indian War, and a rebuilt Church of St. Francis was consecrated in 1760; it stood until floods and erosion destroyed it during the 1890s.

In 1763, at the conclusion of the French and Indian War, the British expelled France from North America. Under the terms of that peace treaty, the French ceded all of Louisiana west of the Mississippi River to Spain. Unfortunately for the Point Coupée residents who lived in the project area, i.e., on the *east* bank of the river, their land was retained by the British. This made for a very unusual circumstance. Along Bayou Sara, just north of the proposed project area, the British issued land grants between 1768-1773, even though the area around Pointe Coupée was overwhelmingly French. At the same time, Spanish officials rapidly issued grants for the

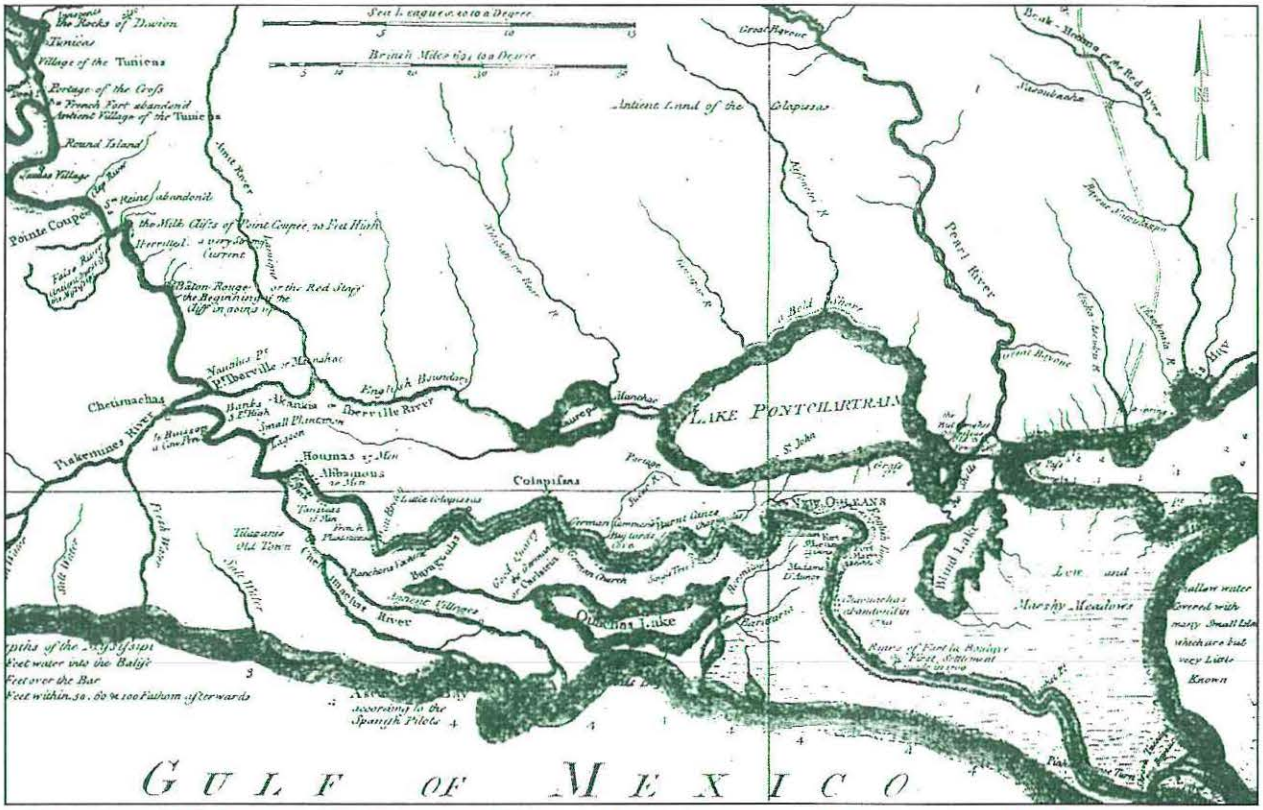

Figure 3. 1765 Ross map Ross' map ca. 1765 shows "Ste. Reine abandon'd," perhaps immediately after the British took over the area.

west side of the river. In the face of this change, several French concessionaires, including St. Reyne abandoned their plantations (Figure 3).

On the west bank, the Spanish subsequently maintained a military presence at Point Coupée, and during the American Revolution, soldiers from the local garrison joined the Spanish forces that seized Baton Rouge from the British (Riffel 1983:13). While adjustments and compromises had to be made, both the fort and the settlement prospered under Spanish dominion, due in large measure to the reopening of trade after the end of the war (Davis 1971:133-134; Hall 1992:252).

On the east bank, British officials gave the land in the project area to Lieutenant Governor Browne (Figure 4). It is not clear if Browne founded a new plantation, attempted to reinvigorate abandoned concession of St. Reyne, or simply did not have the chance to plant at all. At any rate, in 1783, at the conclusion of the American Revolution, the British in turn surrendered the territory to Spain. Permanent settlement of the area began under Spanish rule. Nonetheless, the British occupation of West Florida had one lasting effect upon the project region—Thompson's Creek, which forms the eastern edge of the project area was named for a ferryman from this era, who transported settlers across the river to the Pointe Coupée community (Works Progress Administration 1941:506).

In 1785, documents referred to the land between the Mississippi and Comite Rivers as St. John's Plains. The "St. John" probably derives from an eighteenth century Catholic mission, named for St. John the Baptist, that had briefly been established in the vicinity. By 1790, English-speaking settlers from the Natchez region of the United States were receiving Spanish land grants and occupying The Plains (Jennings 1989:118, 11).

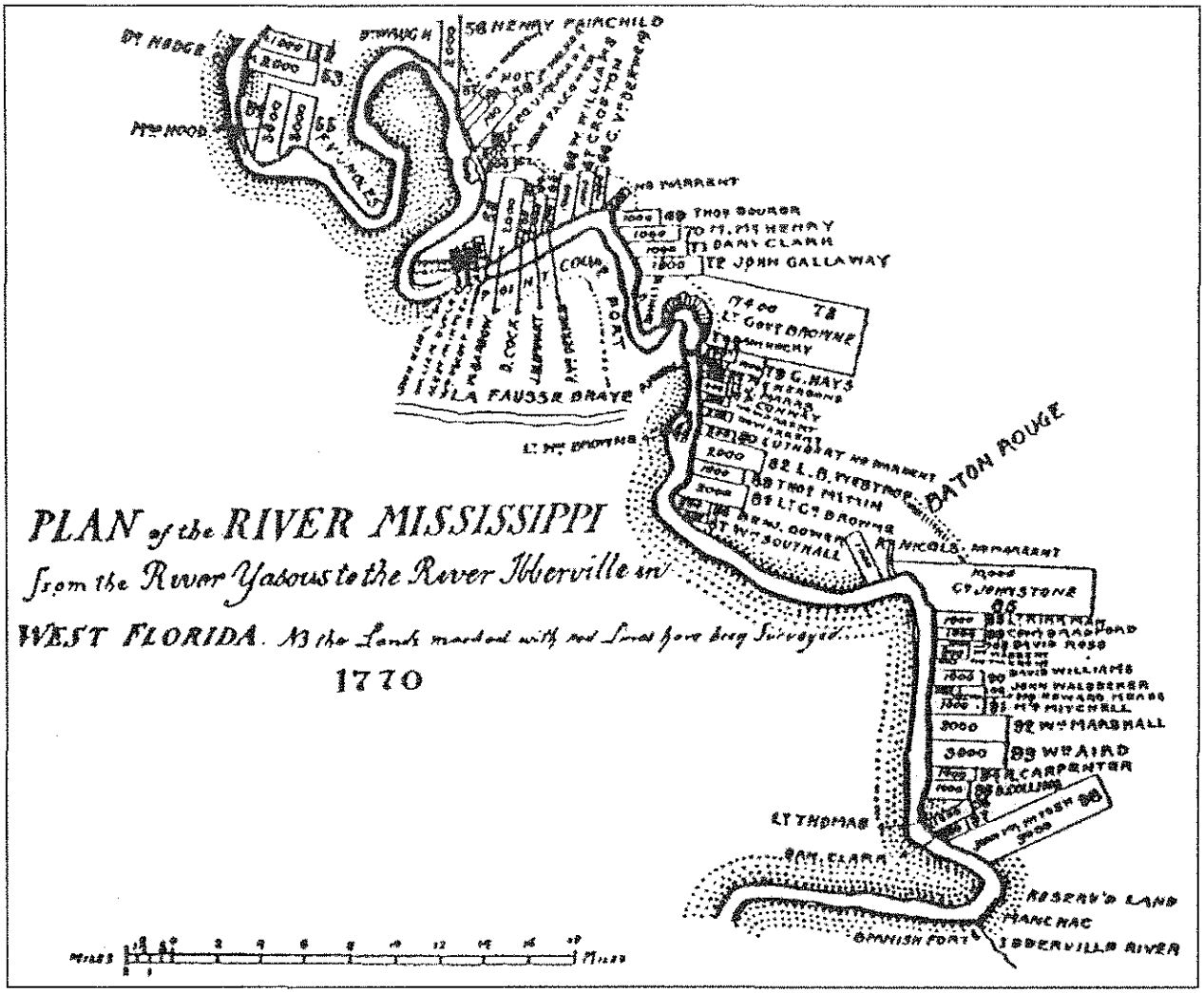

Figure 4. **1770 map by Rowland shows Lieut. Gov. T. Browne in possession of the project area.**

A local historian has provided the following description of the arrival of American settlers in the project area:

> These first families were seasoned pioneers, having lived in the wilderness around Natchez, and they knew from experience the necessity of being neighborly. As each new family arrived, they were assisted in erecting their first shelter by the home-steaders who had preceded them. In old documents these dwellings are described as being one room, log houses and a lean-to kitchen with a door on the front and perhaps a window. (Jennings 1989:15, 322).

Through the end of the eighteenth century, the population of Spanish West Florida remained small. In 1798, the colony had so few inhabitants -- only 800 men -- that deputy surveyor Vincente Sebastian Pintado described it as ". . . a complete desert" (Napier 1985:31). In 1803, the United States purchased the Louisiana Territory from France, but until 1810 Spain retained control of that portion of West Florida containing the study site area (Burns 1932:405-407; Davis 1971:162-164; Ellis 1981:64).

The Overthrow of Spanish Rule in the Project Corridor, 1810

As more Americans moved into Spanish West Florida, dissatisfaction with the Spanish colonial government grew. With the consent of Governor Carlos de Lassus, delegates convened first on July 25-27 and later on August 13-15, 1810 at the home of Richard Devall (sometimes spelled Duvall in early records) to discuss their grievances. The exact location of Devall's house remains in doubt, but local tradition indicates that it stood in Section 76 of Township 5S, Range 1W, outside of the project area. John Christian Buhler had been the original owner of the property (Jennings 1989:29, 24; Round Table Club 1980:135).

Despite the official permission given for the convention, Spanish authorities regarded this assembly with misgivings; they secretly requested military assistance from Pensacola and Cuba to deal with a potential crisis. As the Spanish suspected, the Americans progressed by the end of summer from discussion of grievances to open rebellion; on September 23, 1810, they seized the Spanish fort at Baton Rouge. Declaring their independence from Spain, the rebels created the Republic of West Florida, which existed for 74 days (Meyers 1976:116; Chambers 1898:27-32; Davis 1971:172-173; Jennings 1989:11,24,27-38).

When a convention met at St. Francisville to organize their new government, the delegates at the same time petitioned the United States for annexation. On October 27, President James Madison directed Governor William C. C. Claiborne of Orleans Territory to take possession of West Florida (Davis 1971:173; Ellis 1981:75-79). Claiborne promptly raised the American flag over the former Spanish territory. Americans rapidly organized new governmental institutions; by the end of 1812, the project area lay in Feliciana Parish, State of Louisiana, United States of America (Davis 1971:173, 176; Ellis 1981:82, 85).

Antebellum Settlement

In contrast to southern Louisiana, the vicinity of the project area was populated primarily by British or Scots-Irish settlers, many of whom had emigrated from the Atlantic colonies during Spanish rule of West Florida. The settlers also brought African American slaves to labor on the newly acquired lands. Settlement originally was concentrated along the Mississippi River and its tributaries (Newton 1989:22-24, 27-28).

The plantation system, which utilized controlled labor and practiced staple crop agriculture, developed throughout the project area. (Jennings 1989:149, quoting Judith Mills Ratcliff's unpublished reminiscences). The economy of the project corridor depended heavily upon agriculture throughout the nineteenth century; cotton provided the major antebellum cash crop. By 1858, according to Norman's Chart, the project area was part of the large "Fancy Point" plantation, owned by Lebret and Hearsey. On the eve of the Civil War, in 1860, P. Lebret owned 56 slaves, on a 1,133.2 ha (2,800 ac) plantation worth over $100,000.00 (Menn 1964:228-29). According to Champomier (1860), however, Lebret did not cultivate sugar or, in 1860, cotton; he grew Indian corn, peas and small subsistence crops, and he owned a large number of livestock. Many planters in the project area also engaged in dairy farming. In West Feliciana Parish, large slaveowning plant-

ers owned, on average, 32 milk cows per farm (Menn 1964:39). It seems likely however that this lack of a staple crop was a temporary, rather than permanent condition.

Antebellum cotton planters in the project area succeeded in making money, but at a slower rate than contemporary sugar planters in parishes to the south. According to a local historian of The Plains:

> as they [the cotton planters] prospered, the old raised log houses were replaced with two story clapboard houses. These were usually composed of eight rooms and a wide center hall. The rooms were quite large and had very high ceilings. Each room had a fireplace for warmth in the winter, and floor length windows to catch the least breeze in summer. Wide porches extended the entire length of the house upstairs and down. A few of these houses were of brick, and all of them had the kitchen in a separate building as a fire precaution (Jennings 1989:50).

Civil War in the Project Area

Federal forces in 1862 captured Baton Rouge, and in the following year besieged the Confederate citadel at Port Hudson, just below the project location. During the siege, various alarms and diversions occurred in the vicinity of the study site.

To attack the Confederate bastion at Vicksburg, Mississippi, in March 1863, Admiral David Farragut and his Federal fleet had to sail upstream past the guns of Port Hudson, Louisiana, which commanded the river. In order to create a diversion, Federal troops from Baton Rouge invaded The Plains to assail the batteries of Port Hudson from the land side.

Major General Nathaniel Banks, in command of the Federal army in the project corridor, encamped at the Reverend Simpson Newport's two-story white frame plantation house, which stood at the end of a tree-shaded lane leading from Springfield Landing Road. The Newport house was located approximately 4 mi southeast of the project area, in Section 71 of Township 5S, Range 1W. At 1:00 p.m. on Saturday afternoon, March 14, General Banks sat on the veranda and sent the following message to Admiral Farragut: "When will you open fire? We shall be ready this evening" (Edmonds 1983:1:64). At 5:00 p.m., the Admiral replied that he would begin the attempt to pass by Port Hudson at 8:00 p.m.

When evening came, General Banks failed to support the navy. He had relied on an inaccurate map that indicated that he could reach Port Hudson by the Springfield Landing Road. Instead of a road, he found a path and a footbridge impassable to artillery (Edmonds 1983:1:67). Since he could not provide assistance to the admiral, General Banks encamped for the evening.

The Federal fleet attempted to steal by Port Hudson during the night, but Confederates built such an immense bonfire on the west bank of the river that the batteries on the east bank could see the outline of the ships moving upstream. Nevertheless, shots from Federal gunboats broke up the bonfire and scattered the soldiers and civilians who tended it. Thereafter, the attempted passage took place in darkness interrupted only by the light of bursting shells. Heavy black smoke hung over the riverbed and also impaired visibility for the combatants (Winters 1963:216).

Admiral Farragut's flagship, the *Hartford*, passed the Confederate batteries with the gunboat *Albatross* lashed to her port side, but the Confederate guns forced the remainder of the Federal fleet to turn back and stand down river. During the night, the last Federal ship that attempted to pass Port Hudson, an ancient sidewheeler called the *Mississippi*, ran aground in a mudbank within range of the Confederate guns. When a shot hit the ship's storeroom and set the *Mississippi* on fire, the crew had to abandon ship and scuttle the vessel. As water poured into the hull, the burning ship lifted off from the mud and drifted downriver. The remaining fleet dispersed hastily to avoid the danger posed by their own ship. As they fled, Federal sailors could hear the rebel yells from Port Hudson above the sound of the cannon. When the fire on the *Mississippi* reached the powder magazine the vessel exploded with a deafening blast and a burst of flame that could be heard and seen for miles around (Winters 1963:216-217).

It was the explosion of the *Mississippi* that alarmed Henry Willis and his regiment at their bivouac 4.8 km (3 mi) from the river. Willis recalled, ". . . we were filled with gloomy forebodings that our fleet had been defeated and perhaps destroyed . . ." (Willis 1889:71).

When Banks learned that Admiral Farragut, the *Hartford*, and the *Albatross* had passed Port Hudson and proceeded upriver, the General believed that his own mission had been accomplished. He ordered his army to withdraw from the land approaches to Port Hudson and return to Baton Rouge (Edmonds 1983:1:P150-153).

In May 1863, General Banks and Federal troops returned in full force to The Plains to attempt to take Fort Hudson. The main action took place just southeast of the project area, at The Plains Store; however, a major skirmish occurred between Federal troops and Confederate forces defending the fortress on the river. It was this battle that would have major ramifications for the new, postbellum Louisiana and especially African American Louisianans.

Thousands of slaves who escaped their plantations fought valiantly in the war. In a sense, they were the instruments of freedom for those who stayed on the plantation. Moreover, many African Americans saw it as a war of liberation and a chance to earn not only freedom, but citizenship, whereas many white Federal soldiers fought solely for the restoration of the Union, as Lincoln suggested. General Benjamin Butler, the ranking officer in occupied Louisiana, at first resisted the notion of employing African American soldiers. Initially describing slaves who crossed Union lines as "contraband," Butler urged his subordinate, General John Walcott Phelps, to stop accepting runaway slaves, and to use those slaves under his protection for "fatigue labor" (Ripley 1976:104). However, Phelps, an uncompromising abolitionist, requisitioned "arms, accouterments, clothing, camp and garrison equipage …for three regiments of Africans" (Ripley 1976:104).

Butler cautiously declined, unwilling to proceed without specific presidential approval. After waiting two months for such approval, however, Butler concluded Lincoln's silence as tacit agreement. He recruited the Native Guard, group of free men of color from New Orleans who had formed a Confederate regiment under white threats, to join forces with the Union. Recommissioned on September 27, 1862 as the 73rd United States Colored Infantry, the regiment became the first regiment of African Americans mustered into the Union (Figure 5).

Former slaves in Louisiana fought with courage against their former captors. One historian estimates that at least 15,000 African American troops fought for the Union in the Pelican State, although former Governor Warmouth surmised the number was over 18,000 (Ripley 1976:108). In battles all over the Louisiana theater, former slaves earned distinction and, in some cases, the reluctant respect of both their allies and enemies. One Confederate soldier who fought Corps D'Afrique [African Corps] troops at Milliken's Bend, for example, grudgingly acknowledged that the African American soldiers "fought desperately and would not give up until our men clubbed muskets upon them" (Ripley 1976:123). Indeed, African Americans in the service of the Union had good reason to fight desperately. Many who were captured by the Confederacy were summarily shot, hanged, or re-enslaved. Consequently, African American troops were especially willing to take every chance to survive on the battlefield, rather than face death or recapture. Moreover, Corps D'Afrique members were "more apt to attempt battlefield rescues of the wounded," knowing full well what fate lay ahead for captured soldiers (Ripley 1976:123).

The siege of Port Hudson, which occurred just below the project area, was the first to utilize commissioned troops of African Americans in the United States. The 73rd Colored Troops, (originally the 1st, 2nd and 3rd Regiments of the Louisiana Native Guard), were the primary land diversion engaged to detract the Confederates' attention away from the river. Unfortunately, the information they had been given was fatally flawed. Originally told the engagement arena was a open, flat area, the 73rd found themselves easy targets for the Rebels, located on the top of the surrounding bluff, some 91 m (300 ft) above them. Moreover, the area to either side of the regiment was riddled with swampy underbrush, making retreat virtually impossible.

F. Ernest Dumas and André Cailloux, a major and a captain in the Native Guard respectively, were African American soldiers who served with particular distinction. Both fought in the desperate Federal charge at Port Hudson against Confederates in rifle nests. Cailloux, and some 600 of his fellow African American troops

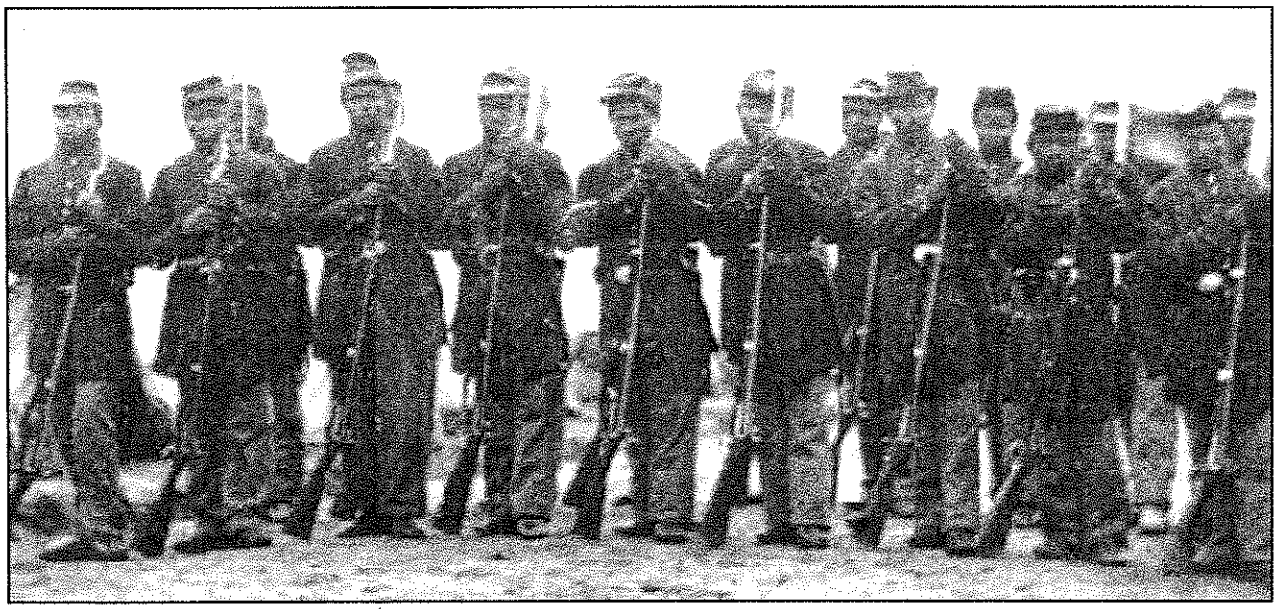

Figure 5. Photograph of the 1st Regiment of the Louisiana Native Guard, the first commissioned African American Troops.

fell. He lay dead on the battlefield for more than a month, until his body was finally claimed, and he was buried a hero in New Orleans 43 days later. Many of his fellow soldiers were not so lucky—the Port Hudson National Cemetery holds the bodies of over 3,500 men killed during that summer in 1863, only 500 of whom are identified. Dumas survived to challenge Reconstruction candidate Henry Warmouth for the governorship of Louisiana. Of Dumas, Union General Benjamin Butler said, "he has more capability as a major than I had as a Major General." Cailloux, according to William Wells Brown, "lifted forever the racial prejudice that [African American] soldiers would not fight" (Vincent 1979:87) Besieged from all sides for 48 days, Port Hudson surrendered on July 9, 1863, five days after the fall of Vicksburg.

The quest to lift the veil of racial prejudice drove many African Americans into battle during the Civil War. Although men of color had offered enlistment in every American war, this war, obviously, held weighty significance for them. Not only did a Union victory promise freedom from slavery, many believed that brave service could pave the way for citizenship and, ultimately, the franchise. Indeed, many men who served in the regiments of the Louisiana Native Guard went on to hold political office in the Reconstruction era. Many others served the public and the freed community as educators, sheriffs, police officers, lawyers, editors and businessmen. Newly freed and eager for equality, these veterans would change Louisiana permanently.

Reconstruction and Postbellum Rebuilding

The marches and countermarches of the two armies had a destructive effect on The Plains; both Confederates and Federals seized supplies from local farmers. In a letter from The Plains in April 1865, shortly after the surrender of the Confederacy, Ann Aldrich describes the local situation:

> You can hardly imagine the change that this country has undergone, I feel so sad when I ride through The Plains once the abode of happiness and hospitality, now deserted and the homes that we spent so many happy hours in, there is nothing left but the chimney, the buildings are all torn away and the fences destroyed . . . You seldom see any cattle or horses feeding on The Plains. The places in many instances are cultivated without being fenced there being no fear of stock. It is wonderful how we have been sustained so far, but I assure you there is a great deal of suffering in this country, but it

> is borne with an uncomplaining spirit (Jennings 1989:79, quoting Mrs. C.A. Aldrich).

The emancipation of the slaves which followed Confederate defeat eliminated the considerable capital West Feliciana Parish agriculturalists had invested in human bondage. Besides upsetting the economy and disturbing the market for cotton, the war brought about a political upheaval. The cotton planter, at least temporarily, lost his former political influence in local, state, and national government.

Many planters during Reconstruction could not accurately gauge the value of their crops or their holdings. Many in West Feliciana, as elsewhere in the state, and indeed in the South, went bankrupt in the new labor-driven economy. Others turned to sharecropping as a means to pay their former bondsmen.

The most significant economic change in the postbellum era was the construction of railroads and the development of the lumbering industries. By opening the yellow-pine forests to the lumber industry, the railroads brought economic benefits to people in the project area. The railroads ran spurs into the timber stands to facilitate the transport of cut logs. Sawmill towns joined the new depot communities along the railways (Newton 1989:31). Though the West Feliciana Rail Road was one of the first iron horses in the state, opening in 1831, the spur ran only as far as Woodville, Mississippi, and it too was damaged during the war. The railroad subsequently was adapted for use in transporting timber, and it was claimed by the Louisville and Nashville Railroad in 1889. By 1892, the line was incorporated into the Illinois Central System, where it operated until its demise in 1978.

The Twentieth Century

The project area has maintained a fairly stable agricultural base through the twentieth century, although cotton production often proved unreliable. In 1905, the crop was disturbed by boll weevils, and during the First World War, suffered considerable fluctuations in the international cotton market. Soon after the Armistice of 1918, the price of cotton skyrocketed and then crashed. In the early 1920s, an agricultural depression that preceded the international economic collapse of October 1929 severely affected the project area. As the Depression deepened in the 1930s, the situation of the cotton farmer worsened, until involvement of the European powers in the Second World War, beginning in 1939, alleviated the farmer's plight.

As cotton proved less profitable, many West Feliciana farmers invested in dairy cattle and livestock. Cattle and dairy farming assumed particular importance. As one commentator has noted:

> About 1940, with the advice and help of the Agricultural Department, many of the farmers were encouraged to plow the fields and plant clover and seeds to produce a good pasture. From then on the farms have prospered, and cattle and dairy farming have replaced the old money crops of cotton, cane and corn (Jennings 1989:186).

In the immediate project area, the meander of the river away from both Port Hudson and the junction of Thompson's Creek and Alligator Bayou (formerly Alexander's Creek on some maps) dramatically changed the economic base of the area. Port Hudson, like Vicksburg before it, no longer is a port, and it now lies some 6.4 km (4 mi) from the Mississippi River.

Nonetheless, the area remains tied both to agriculture and to the timbering economy developed in the late nineteenth century. A significant portion of the parish is still invested in cultivation of sugar, cotton and truck crops. The James River Corporation, St. Francisville Mill, on the former site of the Fancy Point plantation, in the region of the project area, produced pulp and paper products through at least 1994. Today, in, the Georgia Pacific Corporation and the Crown Vantage Corporation are two of the largest private employers in West Feliciana Parish.

Conclusion

The project area, once situated adjacent to the mighty Mississippi River, developed along with the emerging plantation economies of the region. Once an important French colonial settlement, the brief British and Spanish periods saw some small development in the project area. The exploding population of the American period, however, facilitated the development of the area that came to be known as "Fancy Point." The

siege at Port Hudson, a turning point not only in the war, but in the minds of many Americans regarding the abilities of African American soldiers, may well have left its trace on the current proposed tract. Changes in the course of the Mississippi River, however, have dramatically affected the economy of the area. The meandering of the Mississippi River and the rise of train and truck transportation robbed the project area of her riverside economy. Still cotton country, however, much of life in West Feliciana Parish still rises and falls with the planting and harvesting seasons.

CHAPTER V

PREVIOUS INVESTIGATIONS

This chapter provides an overview of the various archaeological surveys conducted, and sites encountered, in the vicinity of the proposed Thompson Creek Energy Center in West Feliciana Parish, Louisiana. Site file research conducted by R. Christopher Goodwin and Associates, Inc., at the Louisiana Department of Culture, Recreation, and Tourism, Office of Cultural Development, Divisions of Archeology and Historic Preservation in Baton Rouge on April 18, 2001, documented the 11 cultural resources surveys which have taken place within 8 km (5 mi) of the currently proposed project area. In addition, 10 previously recorded archeological sites were identified within 1.6 km (1 mi) of the proposed Thompson Creek Energy Center. Previously completed cultural resources surveys are discussed in the next section of this chapter and they are summarized in Tables 2 and 3. The second section provides a discussion of the previously recorded archeological sites. Finally, the third part describes the historic standing structures. Each of those cultural resources is depicted on Figure 1. The quality and quantity of the information presented in the examined volumes and the associated site files is reflected in this chapter.

Previously Completed Surveys within 8 km (5 mi) of the Proposed Thompson Creek Energy Center Project Area

A total of 11 cultural resources surveys have been completed within 8 km (5.0 mi) of the currently proposed Thompson Creek Energy Center (Table 2). At least six of those surveys occur within West Feliciana Parish, the remaining five surveys were conducted within West Feliciana and other parishes and portions of Texas. These surveys resulted in the investigation and recordation of 64 archeological sites, 47 historic structures, and 2 historic roads within West Feliciana, Pointe Coupee and Cameron Parishes. A summary of each of the previously completed cultural resources surveys is provided below.

Surveys Conducted within West Feliciana Parish

The earliest of the archeological surveys identified as a result of this research was undertaken by Robert Neuman in 1971 on behalf of the Gulf States Utility Company. The project area, located along the Mississippi River at a point 4.8 km (3 mi) south of St. Francisville, Louisiana, passed through "cleared upland pastures..., forested slopes, and gully banks" (Neuman 1972). The survey, carried out in advance of the proposed construction of a nuclear generation plant, consisted primarily of pedestrian survey. While traces of Native American occupations were identified, none of the sites represented the remains of substantial villages or mounds.

A later survey was conducted by the National Park Service along the Mississippi River, in the area of Bayou Sara (Stuart and Greene 1984). The project area consisted of an alluvial river bottom setting, along with adjacent embankments and uplands. Field investigations consisted of pedestrian survey, with special attention given to previously disturbed and cut bank areas. A scatter of twentieth century artifacts was encountered during the survey, though not recorded as an archeological site. Given the nature of the topography, and despite the lack of

Table 2. Previously completed cultural resources surveys conducted within 8 km (5 mi) of the proposed Thompson Creek Energy Center project area.

FIELD DATE	REPORT NUMBER	TITLE/AUTHOR	INVESTIGATION METHODS	RESULTS AND RECOMMENDATIONS
WEST FELICIANA PARISH				
1972	22-141	*Addendum to December 1971 Report on an Archaeological Survey of the River Bend Station, West Feliciana Parish* (Neuman 1972)	Archival research, pedestrian survey	No significant sites were identified and no further work was recommended.
	22-847	*An Archeological Survey of the Proposed Bayou Sara Revetment (M-264.9 to 260-L), West Feliciana Parish, Louisiana* (Stuart and Greene 1983)	Archival research, pedestrian survey	No cultural resources were identified. Monitoring of construction was recommended.
1983	22-916	*Historical and Archaeological Investigation of the Ruins of a Nineteenth Century Sugar Mill (16WF-36) in West Feliciana Parish, Louisiana* (Shuman and Orser 1984	Archival research, test excavations	Site 16WF36 was assessed as being ineligible for inclusion to the National Register and no further work was recommended. The site is not within 1.6 km (1 mi) of the project area.
1986	22-2061	*A Preliminary Investigation of Cultural Resources on the Danos Property, West Feliciana Parish, Louisiana* (Shuman and Jones 1986)	Archival research, surface collection, shovel testing, metal detector survey	The survey identified prehistoric artifacts but no significant prehistoric occupation was identified. Historic cabins and a cemetery were also identified. Continued archival research and excavations in the areas of the cabins and mill were recommended. None of those resources is within 1.6 km (1 mi) of the project area.
1994, 1996	22-1939	*Highway 61 Visited: Cultural Resources Survey and Testing of the LA-US 61 Four Lane Project Corridor Between Bains and Thompson Creek, West Feliciana Parish, Louisiana* (Hahn et. al 1997)	Archival research, pedestrian survey, shovel testing, probing, examination of standing structures, excavation	Twenty two archaeological properties, 47 standing structures over 50 years old and several abandoned roadways were identified during survey. Eleven sites (16WF39, 16WF86, 18WF87, 16WF88, 16WF90, 16WF96, 16WF98, 16WF99, 16WF100, 16WF104, and 16WF113) were assessed as being not significant and no further work was recommended. Phase II Survey was conducted on Site 16WF89 and it was determined to be potentially eligible for inclusion on the National Register. Site 16WF101 was assessed as being potentially significant but was outside the project area. Eleven of the standing structures that were identified were already on the National Register and 25 structures were determined to be eligible. A segment of the Bayou Sara - Baton Rouge Road was determined to be eligible for inclusion on the National Register. None of those resources is within 1.6 km (1 mi) of the project area.
1996	22-1939 Addendum A	*Highway 61 Visited: Cultural Resources Survey and Testing of the LA-US 61 Four Lane Project Corridor Between Bains and Thompson Creek, West Feliciana Parish, Louisiana, Addendum A: Phase I Investigations of the LA-US 61 Four Lane Project Corridor Realignment* (Hahn 1996)	Pedestrian survey, shovel testing, probing	Four archaeological sites, six standing structures, and two historic roadways were examined. None of the sites were recommended for additional testing and none of the sites or standing structures were recommended as eligible to the National Register. A section of the Bayou Sara - Baton Rouge Road was recommended as eligible for inclusion on the National Register.
MULTIPLE PARISHES				
	22-121	*Archeological Survey: Colonial Pipe Line Company Forty-Inch Pipeline, East Feliciana Parish, Louisiana to Orange County, Texas* (Gagliano, Weinstein, and Burden 1976)	Archival research, pedestrian survey, boat survey	Sites 16CM58 was identified during survey but no further work was recommended for this site. Site 16PC31 was identified and was being considered for nomination to the National Register. Mitigation through data recovery or protection of part of the site during construction was recommended. Two areas, East Bayou Lacassine and the bluffs of East Feliciana Parish east of Thompson Creek, were recommended to be monitored during pipeline construction.

Table 2, continued

FIELD DATE	REPORT NUMBER	TITLE/AUTHOR	INVESTIGATION METHODS	RESULTS AND RECOMMENDATIONS
1984	22-935	*Cultural Resources Survey Over Two Proposed Impact Areas in Pointe Coupée and West Feliciana Parishes, Louisiana* (New World Research, Inc. 1984)	Archival research, pedestrian survey, shovel testing	No sites were found in the surveyed areas and no further work was recommended.
1984	22-988	*Cultural Resources Investigations of the Proposed Transcontinental Gas Pipe Line Corporation Main Line Expansion, East and West Feliciana Parishes, Louisiana* (Phillips et. al 1984)	Archival research, pedestrian survey, site testing	Eight sites and one isolate were identified. Sites **16WF41, 16WF42, 16WF43, 16WF44, 16WF45**, and **16WF47** were assessed as being not significant and no further work was recommended. Sites **16WF46** and 16EF57 were determined to be outside the project area and their significance was not assessed.
1991	22-1549	*Cultural Resources Survey and Testing in the Area of the Transcontinental Gas Pipe Line Mississippi River Crossing Project, West Feliciana and Pointe Coupée Parishes, Louisiana* (Kelley and Hopkins 1991)	Archival research, pedestrian survey, shovel testing, test excavations	Two sites were identified within the project areas and test excavations were conducted at both sites. Site 16WF44 was assessed as being not significant. Site 16PC27 was considered to be potentially eligible for nomination to the National Register. Avoidance of this site or mitigation through data recovery was recommended.
	22-2018	*Ploup to Vaughn Creek: A Cultural Resources Survey for the Proposed St. Francisville Bridge, Pointe Coupée and West Feliciana Parishes, Louisiana* (Hahn et. al 1996)	Archival research, pedestrian survey	Twenty nine sites and five isolates were identified during survey. Phase II surveys were recommended for ten of the sites (16WF52, 16WF57, 16WF60, 16WF61, 16WF66, 16WF70, 16WF71, 16WF77, 16WF81, 16WF84). The five isolated finds and the other 19 sites (16PC64, 16WF58, 16WF59, 16WF64, 16WF65, 16WF67, 16WF68, 16WF69, 16WF72, 16WF73, 16WF74, 16WF75, 16WF76, 16WF78, 16WF79, 16WF80, 16WF82, 16WF83, and 16WF85) were assessed as being ineligible for inclusion in the National Register and no further work was recommended.

Table 3. Previously recorded sites located within 1.6 km (1 mi) of the proposed Thompson Creek Energy Center project area.

SITE NUMBER	USGS 7.5' QUADRANGLE	SITE DESCRIPTION	CULTURAL AFFILIATION	FIELD METHODS	NRHP ELIGIBILITY	RECORDED BY
16WF4	Port Hudson	Prehistoric mound complex	Archaic, Marksville, Coles Creek, Plaquemine	Surface collection, shovel testing	Eligible	Beyer 1896
16WF5	New Roads	Two prehistoric mounds	Prehistoric (unknown)	N/D	Not assessed	N/D
16WF31	New Roads	Cemetery	Historic (late 19th and early 20th Century)	Surface collection	Not assessed	Neuman et. al 1978
16WF 41	New Roads	Prehistoic earth midden	Marksville/ Baytown, Coles Creek	Surface collection, shovel testing	Not eligible	Carr 1984
16WF42	New Roads	Prehistoric artifact scatter	Neo-Indian, Woodland	Surface collection, shovel testing	Not eligible	Carr 1984
16WF43	New Roads	Prehistoric artifact scatter	Neo-Indian, Woodland	Surface collection	Not eligible	Carr 1984
16WF44	Port Hudson	Prehistoric artifact scatter	Late Archaic, Baytown, Coles Creek	Surface collection, shovel testing, machine stripping	Not eligible	Kelley 1991
16WF45	New Roads	Prehistoric artifact scatter	Neo-Indian, Woodland	Surface collection	Not eligible	Carr 1984
16WF46	New Roads	Prehistoric artifact scatter	Neo-Indian, Woodland	Surface collection	Not eligible	Carr 1984
16WF47	New Roads	Historic artifact scatter	Modern 20th Century	Shovel testing	Not eligible	Carr 1984

cultural materials encountered during survey, the investigators recommended monitoring the area during any construction activities conducted on behalf of the U.S. Army Corps of Engineers.

At about the same time the previous survey was being completed, archaeological investigations were undertaken at a nineteenth century sugar mill (Site 16WF36) on the same property presumably surveyed by Neuman during the 1970s. The subsequent investigations were designed to assess the eligibility of 16WF36 for listing on the National Register of Historic Places. The initial recordation of the site listed two standing brick walls, around which "brick rubble mounds, shallow depressions, and substantial holes" appeared to be placed randomly, possibly as a result of machine or brick removal from the mill at or following the time of its abandonment (Shuman and Orser 1984). In December of 1983, a total of 21 shovel tests were excavated irregularly throughout the project area (Shuman and Orser 1984). This investigation produced only a meager assemblage, which included glass shards, nails, brick fragments and nonhuman bone fragments. None of these items suggested an occupation dating prior to approximately 1830, and the site appeared to have been used between 1850 and 1862. As a result of the investigation, the researchers suggested preservation of the site. Because of the paucity of materials recovered, the unremarkable architecture, and the suggestion that the site was fairly typical for its time, Shuman and Orser (1984) assessed the site as note significant applying the National Register of Historic Places criteria of evaluation. Site 16WF36 does not lie within 1.6 km (1 mi) of the currently proposed project area.

Extensive cultural remains were encountered during the 1986 survey at Powell Station, in advance of the proposed construction of an artificial lake (Shuman and Jones 1986). The project area consisted of a 175.2 ha (432.81 ac) parcel, much of which was slated to be flooded by the proposed development. Fieldwork included pedestrian survey, shovel testing, and metal detector survey. Background research identified the presence of a prehistoric Native American earthen mound, as well as, several previously recorded historic structures, and an African American cemetery. Investigations revealed the presence of three prehistoric lithic and ceramic artifact scatters, one of which dates from the Troyville/Coles Creek period. i.e., from approximately A.D. 1000, and numerous historic glass, ceramic, and metal items dating from the nineteenth and twentieth centuries. None of the cultural resources was situated within 1.6 km (1 mi) of the presently proposed project area.

Between 1994 and 1996, research was conducted in the vicinity of the project area, for the Louisiana Department of Transportation for a proposed realignment of US Highway 61. Investigations sought to locate any cultural remains along the proposed corridor by means of pedestrian survey, shovel testing, probing, examination of standing structures, and excavation (Hahn 1996; Hahn, Mahoney et al. 1996). The entire corridor measured 15.48 km (9.62 mi) in length and extended from Bains to Thompson Creek, Louisiana. The total area surveyed encompassed 148.58 ha (367.17 ac), of which 141.58 ha (349.84 ac) were tested during 1994; the remaining 7 ha (17.33 ac) were tested in 1996 (Hahn, Mahoney et al. 1996). As a result of these survey efforts, 22 archeological sites (including both artifact scatters and larger sites), 47 standing structures at least 50 years of age, and several nineteenth century historic roads, were examined, evaluated and recorded. None of those cultural resources lay within 1.6 km (1 mi) of the proposed Thompson Creek Energy Center.

Surveys Conducted in Multiple Parishes

A survey, conducted for the Colonial Pipeline Company, entailed investigation of a corridor that extended from East Feliciana Parish, Louisiana to Orange County, Texas (Gagliano et al 1976). Due to difficulty in accessing all properties (difficult terrain and/or lack of landowner permission) the corridor was sampled along its route, and tested via pedestrian survey or observed from a point as near to the property as investigators were permitted to approach. A great deal of attention was focused on the flood plains, through which the corridor passed. The survey identified site 16CM58, but determined that the site would not be impacted by the proposed development. Site 16PC31, a nineteenth century port facility in Waterloo, Louisiana, was deemed eligible for listing on the National Reg-

ister of Historic Places, and it was to be at least partially impacted by the pipeline. In addition, two other areas were noted as requiring monitoring during development. One of these latter areas represents a potential Pleistocene age paleontological bone deposition area, while the other is an area possibly related to the Civil War Battle of Port Hudson. In total, 21 prehistoric period sites, 1 historic period site were identified by the survey. None of those sites was located within 1.6 km (1 mi) of the presently proposed project area.

During the summer of 1984, a survey was conducted for EMANCO, Inc., in advance of a proposed pipeline placement along the Mississippi River valley in West Felicia and Pointe Coupe Parishes, Louisiana (New World Research 1984). The project area was located entirely within the flood plains, i.e., it was situated between the Mississippi River and the artificial levee on the west bank, and between the natural levee and bluffs along on the eastern bank. Field investigations consisted of pedestrian survey in cleared areas at 30 m (98 ft) intervals, and shovel test transects in areas of poor surface visibility, in addition to the excavation of a single auger test. Along the west bank, no shovel testing was necessary due to extensive soil borrowing activities having removed the previously existing topsoil. No cultural resources were encountered during the field investigation.

A second survey for EMANCO, Inc., was conducted along a proposed corridor within East and West Feliciana Parishes, Louisiana (Phillips et al. 1984). The project area measured 7.9 km (4.96 mi) in length and 23 m (75 ft) in width, it crossed through both upland and river bottom settings. Field reconnaissance entailed pedestrian survey and further testing of an unspecified nature on four of the sites initially deemed potential candidates for listing in the National Register of Historic Places. These efforts resulted in the identification of eight archeological sites and an isolated find (Philips et al. 1984). None of the sites possessed the qualities of significance as defined by the National Register of Historic Places criteria of evaluation. Of the sites identified during survey, seven (Sites 16WF41 through 16WF47) lie within 1.6 km (1 mi) of the Thompson Creek Energy Center project area; these sites are discussed in the next section of this chapter.

Within the Mississippi River valley in Pointe Coupee and West Feliciana Parishes, archeological testing was conducted in anticipation of a proposed horizontal drilling operation for a proposed Transcontinental Gas Pipeline Corporation corridor. The project area, located along the west bank of the river, comprised 13.42 ha (33.13 ac), while the east bank property covered 7.76 ha (19.16 ac) (Kelley and Hopkins 1991). The survey resulted in the re-identification of two sites; 16WF44 situated on the east bank, and the initial recording of 16PC27 located on the west bank of the Mississippi River. Further testing at both sites produced prehistoric lithic and ceramic materials dating from both the Late Archaic and Early Mississippian periods. Site 16WF44 was assessed as not significant; it is described in the section below. Site 16PC27, however, was considered eligible for listing on the National Register of Historic Places was recommended; the site lies beyond 1.6 km (1 mi) of the currently proposed project area.

Finally, a proposed bridge crossing prompted an archeological survey along the Mississippi River, it too was located within Pointe Coupee and West Feliciana Parishes. The project area consisted of 45.1 km (28 mi) of noncontiguous corridors and alignments, of which approximately 661 ha (1633 ac) were examined (Hahn, Bond et al. 1996). Through literature review and field reconnaissance, a total of 34 cultural resources were encountered. These consisted of 5 isolated finds, 4 prehistoric period sites, 19 historic period sites, and 6 multi-component sites (ibid). Though 10 of these were recommended for Phase II testing, ultimately, none of the sites were deemed eligible for listing in the National Register of Historic Places. In addition to the sites, 34 historic structures over 50 years of age were identified within or immediately adjacent to the project corridor. In addition, unspecified number of historic roads were encountered during survey. None of the cultural resources identified and recorded as a result of the investigation lie within 1.6 km (1 mi) of the current project area.

Description of Previously Recorded Sites within 1.6 km (1 mile) of the Proposed Thompson Creek Energy Center Project Area

A total of 10 previously recorded sites have been identified within 1.6 km (1 mi) of the Thompson Creek Energy Center project area (Table 3). Prehistoric components were identified at eight sites, and two of these sites also contained historic period cultural components. A single site (Site 16WF4) was determined to be eligible for inclusion in the National Register of Historic Places; one site (16WF31) was not evaluated, and the remaining eight sites (16WF5, 16WF41, through 16WF47) were assessed as not significant applying the National Register of Historic Places criteria of evaluation (36 CFR 60.4). Each of those sites is discussed below (Figure 1).

Site 16WF4

Site 16WF4, the Riddle Mound site, represents the remnants of a substantial mound complex. The site first was identified as part of a survey completed around the turn of the last century by Dr. George Beyer of Tulane University. Historic surveys and maps of the area depict five flat-topped mounds dating possibly from the Coles Creek/Plaquemine Early to Middle Mississippian periods (Bense 1984). The site, located in a wooded area, is positioned on an eastern bluff that overlooks Thompson Creek in West Feliciana Parish, Louisiana. Unit excavation completed by Beyer, and subsequent shovel tests and surface collections completed throughout the site area suggested the occurrence of repeated occupations, dating from the Archaic, Middle Woodland, and Mississippian periods. Artifact density at the site was quite low; while later surveys suggested a combination of plowing and collecting by avocational archeologists may be responsible for the absence of cultural material. At an unspecified point during this past century, four of the mounds had been removed from the site and only a single mound remains intact today. This mound, while largely overgrown, appears from site maps to be heavily eroded. Maps depicting the mound suggest that the structure is roughly square, and oriented in a north-south alignment, 3.4 m (11 ft) high, and 40 m (131.2 ft) on a side. Despite its condition, Shuman and Jones (1986) evaluated the site as potentially significant applying the National Register of Historic Places criteria of evaluation. Site 16WF4 is positioned approximately 800 m (2,624 ft) northeast of the Thompson Creek Energy Center project area.

Site 16WF5

Site 16WF5, known as the Thompson Creek Mound site, consists of a group of at least 2 mounds located on a terrace that overlooks Thompson Creek. Very little is known about this site, and efforts to relocate it in the field have not been successful and the mound may have been destroyed at an unspecified time in the past. While the age of the site is unknown, it probably represents the remains of a possible ceremonial center. The property on which the mound is/was located is currently owned by a paper mill. Site 16WF5 is positioned to the south and east of Highway 964, approximately 150 m (492 ft) from the currently proposed project area.

Site 16WF31

Site 16WF31, known as the Riddle Family Cemetery site, the Port Hudson Cemetery and Neuman's Site #8, is located in an area northwest of Thompson Creek between a Gulf States Utility Company transmission line right-of-way and Highway 964. The cemetery, dating from the late nineteenth to early twentieth century, is of indefinite dimension, and it has been subjected both to vandalism and to disturbance from logging activities. These activities have resulted in the displacement of a number of the grave markers. Some of the gravestones exhibit evidence of having been handmade, while others appear to have been cut commercially. This site had not been assessed applying the National Register of Historic Places criteria for evaluation (36 CFR 60.4). Site 16WF31 is positioned approximately 110 m (3,608 ft) north of the Thompson Creek Energy Center project area.

Site 16WF41

This site represents a possible base camp dating from the Marksville/Baytown (Middle and Late Woodland) and Coles Creek/ Plaquemine (Late Woodland/Early-Middle Mississippian) age. The site is located on a bluff top

near the Mississippi River and Grant's Bayou, the same landform as Sites 16WF42 through 16WF48. Site 16WF41, at the time of its identification, was located adjacent to a ditch on pastureland, and was undergoing extensive erosion. Testing by Philips et al. (1984) included scraping, unit excavation, and surface collection. This investigation revealed that previous agricultural activities largely had destroyed any intact midden deposits that might have once existed within the site. The site was noted to be irregular in shape, and it covered an area that measured approximately 200 x 100 m (656.2 x 328.1 ft) east-west. Materials recovered from the site included lithics, ceramics, subsistence remains, and post-mold features. Due in large part to the extensive impacts documented at the site. Phillips et al. (1984) assessed the site as not eligible for inclusion on the National Register of Historic Places (ibid). Site 16WF41 is situated 1,000 m (3,280 ft) north of the currently proposed project area.

Site 16WF42

Site 16WF42 is located on the same upland plain as 16WF41 and 16WF43 through Site 16WF46, and it is believed to represent a village or hamlet dating from the Neo-Indian or Woodland age (Phillips et al. 1984). Field survey included both pedestrian survey and systematic shovel testing along a 10 m (32.8 ft) grid. Lithic and ceramic materials were recovered from an area that measured approximately 100 x 75 m (328.1 x 246.1 ft) in extent; the site was oval in shape and oriented in an east-west direction. The property on which 16WF42 was located had experienced agricultural plowing in the past, and all of the recorded cultural remains originated from within the disturbed plowzone layer. Phillips et al. 1984 assessed the site as not eligible for listing in the National Register of Historic Places; and no further testing of the site was recomended. Site 16WF42 is situated approximately 1,000 m (3,280 ft) northwest of the Thompson Creek Energy Center project area.

Site 16WF43

Site 16WF43 is believed to represent a basecamp of Neo-Indian and Woodland period age. It is located on the same upland plain as 16WF41, 16WF42, and 16WF44 through 16WF46. The site is positioned approximately 1,100 m (3,608 ft) north of the currently proposed project area. Investigation within the site included pedestrian survey, a scraper cut, and the completion of one 5 x 5 m (16.4 x 16.4 ft) excavation unit (Philips et al. 1984). Fieldwork defined the remains of a lithic and ceramic scatter, and two cultural features. The site had experienced agricultural plowing in the past, and at the time of its identification it was experiencing ongoing slope erosion. Philips et al. (1984) suggest that the site was not eligible for listing on the National Register of Historic Places, and they did not recommend further work at the site.

Site 16WF44

Site 16WF44 is a linear concentration of lithics and ceramics that measures approximately 100 x 340 m (328 x 1,115 ft) along a north-south axis. Also identified by Philips et al. (1984), and later re-examined by Kelley and Hopkins (1991), this site is located on an upland plain that overlooks the Mississippi River. Investigations consisted of pedestrian survey, controlled surface collection, systematic shovel testing, and machine stripping. The results of the investigations indicated the presence of materials dating from the Late Archaic, Neo-Indian, Woodland, and Baytown and Coles Creek (Late Woodland) periods, as well as isolated prehistoric pit features, and historic postmolds. Extensive disturbance at the site was noted, in the form of bluff-edge erosion, plowing, and damage due to the construction of a nearby road, utility line, and pipeline (Philips et al. 1984). The investigators suggested that site 16WF44 was not eligible for listing in the National Register of Historic Places, and no further work recommended. Site 16WF44 is positioned approximately 1,150 m (3,772 ft) northwest of the currently proposed project area.

Site 16WF45

Site 16WF45 is believed to represent a specialized activity area of Neo-Indian and Woodland age. Situated on the same upland plain as Sites 16WF41-16WF44, and 16WF46, this site was described as a circular scatter of prehistoric period lithic and ceramic artifacts; the site measured approximately 20 m (66 ft) in diameter (Philips et al. 1984). At the time of its recordation, Site 16WF45 had undergone plowing and

other impacts, and at the time of its identification, the site was being eroded actively away into a drainage. Destruction of the site was deemed imminent and no further work was recommended. This site is positioned approximately 1,050 m (3,444 ft) northwest of the Thompson Creek Energy Center project area.

Site 16WF46

Site 16WF46, a light prehistoric material lithic scatter, was identified on an upland plain in the vicinity of the previously discussed sites (16WF41 through 16WF45). The site was relocated by Philips et al. (1984) during pedestrian survey; it was characterized as a light scatter of lithic artifacts and it measured approximately 10 m (33 ft) diameter. Impacts to the site included previous plowing, ongoing erosion, and disturbances related to the placement of a powerline through the area. The site, located outside of the corridor surveyed by Philips et al. (1984) was not recommended for nomination to the National Register of Historic Places, and further work was recommended. Site 16WF46 is positioned approximately 1,500 m (4,920 ft) northwest of the currently proposed project area.

Site 16WF47

Site 16WF47 consists of a light scatter of historic ceramic and glass artifacts situated on an upland plain that overlooks the Mississippi River. Philips et al. (1984) note that all materials were located at the current ground surface, and that shovel testing of the site identified no additional material. The total extent of the site is a 45 x 20 m (148 x 66 ft) oval, oriented north-south. Noted disturbances to the site include those associated with the presence of a nearby pipeline. No further work was recommended, nor was the site deemed eligible for nomination to the National Register of Historic Places. Site 16WF47 is situated approximately 1,600 m (5,248 ft) north-northeast of the proposed Thompson Creek Energy Center.

Historic Standing Structures in the Vicinity of the Project Area

Examination of the files housed at the Louisiana Department of Culture, Recreation, and Tourism, Office of Cultural Development, Divisions of Archeology and Historic Preservation indicated that only one previously recorded historic period standing structure lies within 1.6 km (1 mi) of the proposed project area. The structure was recorded as a deteriorated wood frame dwelling situated in the town of Riddle, Louisiana.

Structure #213

This structure is a vernacular-style tenant house dating from approximately the late nineteenth century. The building is located within the town of Riddle, in West Feliciana Parish, Louisiana, and 3.7 km (2.3 mi) south of the intersection of US-61 and LA-964. The structure is a single-level 3-room home of clapboard construction, mounted on brick and concrete piers. Wall construction consists of a balloon frame, covered by a tinside gable roof (Berggren 1987). Windows are primarily unglazed, with plank shutters. Doors also are of plain plank construction. A porch, located on one side of the house, is supported by square posts. The structure also had unspecified additions made to its east and north sides at some point prior to its recordation. The structure, which was in a state of deterioration at the time of its recordation, appeared to be threatened by possible development.

Summary

This chapter provided an overview of previous cultural resources research conducted within the vicinity of St. Francisville, in West Feliciana Parish, Louisiana. All information derives from records housed at the Louisiana Department of Culture, Recreation, and Tourism, Division of Archeology in Baton Rouge. A total of 11 previously completed cultural resources surveys were identified within 8 km (5 mi) of the Thompson Creek Energy Center project area. Additionally, 10 previously recorded archeological sites located were identified within 1.6 km (1 mi) of the currently proposed project area as were two historic standing structures located in the vicinity of the Area of Potential Effect.

As is evident from the surveys and site descriptions discussed above, human populations have utilized this landscape since at least the Archaic stage. Prehistoric utilization of the area occurred also during the subsequent Woodland and Mississippian stages. Historic stage occupations appears to be less common, and they are

represented by only a single artifact scatter and a cemetery. All of the previously identified archeological sites occur of the upland formation, none were recorded within the alluvial Mississippi River Valley. These occupations ranged from prehistoric period ephemeral camps to complex, multi-mound centers, to homesteads and industrial facilities dating from the historic period. It appears, however, that the edges of the uplands that border the alluvial valleys contain sites with greater numbers of identified components. Similarly, the two previously recorded prehistoric mound sites are also situated along the edges of uplands, just above the alluvium. Both of the mound sites (16WF4 and 16WF5) are situated on terraces situated above Thompson Creek.

CHAPTER VI

RESEARCH DESIGN AND FIELD METHODS

The proposed Thompson Creek Energy Center project area encompasses a total of 43.6 ha (107 ac) in West Feliciana Parish, Louisiana. It is positioned approximately 9.8 km (6.1 mi) southeast of the town of St. Francisville, and 13.0 km (8.1 mi) south-southwest of Jackson, Louisiana. The proposed project area is situated at the interface between the Upland and Intermediate Complexes of the Central Gulf Coastal Plain.

Intensive pedestrian reconnaissance augmented by systematic subsurface testing was used to survey the entire length and width of the proposed project right-of-way for cultural material and/or evidence of intact cultural deposits. The archeological inventory was designed to identify, record, and assess preliminarily all cultural resources situated within the proposed project corridor. A three-step approach was utilized to complete this inventory. The process included: (1) cartographic, archival, and archeological review of data relevant to the project area; (2) pedestrian survey and systematic shovel testing of the undisturbed portions or relatively undisturbed portions of the proposed project area; and (3) recordation and preliminary assessment of all newly discovered cultural resources loci.

A review of the files maintained by the Louisiana Department of Archaeology and Historic Preservation in Baton Rouge identified a number of archeological sites that have been recorded within 1.6 km (1.0 mi) of the project area and a number of archeological surveys conducted within 8 km (5 mi) of the project area (see Chapter V). The examination of the 10 extant site forms and 11 survey reports provided the baseline information used to develop the research strategy that guided the Thompson Creek Energy Center Phase I cultural resources survey and archeological inventory.

Project Research Design

The sampling strategy employed for testing the proposed Thompson Creek Energy Center facilities was designed to provide complete and thorough coverage of the entire project area. Fieldwork included both pedestrian survey and systematic shovel testing throughout the project area. Additionally, the entire project area and the immediate surroundings were examined visually for surficial evidence of intact cultural deposits and/or cultural material.

The geomorphology of the project area influenced greatly the occurrence and subsequent preservation of the archeological materials initially deposited within the proposed project corridor. Dominant factors that influenced prehistoric occupation of the area include elevation above water sources and proximity to multiple ecozones. For this reason, brief reviews of the processes that may effect human settlement and the preservation and detection of sites are included in this discussion.

The proposed project is positioned at the interface between the Upland Complex and the Intermediate Complex of the Central Gulf Coastal Plain physiographic province (see Chapter II). Although those Complexes date from as late as the Sangamon, they are covered by more recent deposits of loess. The proposed Thompson Creek Energy Center is positioned atop a bluff that overlooks both Thompson Creek and the Mississippi River Valley, and on a terrace situated above Thompson Creek. The majority of the pro-

ject area is positioned on the relatively level surfaces of the bluff top and the terrace. These elevated, rather level surfaces would provide a location safe from flooding or migrations of nearby Thompson Creek and the Mississippi River. Additionally, the riverine resources of those waterways would be within easy reach of the bluff top. Therefore, the majority of the proposed Thompson Creek Energy Center project area was considered to have a high probability for containing archeological sites. A small portion of the western end of the proposed project area, however, lies on a portion of the bluff top that has been dissected by numerous small intermittent streams that drain into Alligator Bayou. The rugged topography of that portion of the project area would not have provided a setting amenable to human settlement, nor would intact cultural deposits be expected to be preserved along the steep slopes of the area. Therefore, the western 160 m (525 ft) of the 42.5 ha (105 ac) power generation facility was considered to have a low probability for containing intact cultural resources.

The possibilities for encountering intact cultural deposits are greatly diminished, however, in areas where deep plowing associated with modern agriculture and commercial logging and reforestation have been practiced. Logging and mechanized agriculture can damage severely buried archeological remains. The entire project area has been subjected to these and other types of disturbances (e.g., road grading) for the past 100 years (see Chapter IV).

Field Methods

The Phase I cultural resources survey and archeological investigation of the proposed Thompson Creek Energy Center Project area was completed between April 8 and 18, 2001. The location of the proposed power generation facility measures 1,150 m (3,773 ft) east-west by 560 m (1,837 ft) north-south, and it encompasses 42.5 ha (105 ac). It is positioned atop Balls Bluff adjacent to the west side of Louisiana Highway 964, and north of the extant Crown Vantage paper mill. The proposed 0.8 ha (2 ac) power substation is positioned on a terrace of Thompson Creek to the southeast of Highway 964. The third component of the Thompson Creek Energy Center project consists of a 30.5 m (100 ft) wide 100 m (328 ft) long corridor that will link the power generation facility with the substation.

Archeological inventory of the proposed project area was designed to identify all prehistoric and historic period cultural resources located within the project area. The survey was comprehensive in nature; it took into account the results of all previously conducted archeological surveys completed within the immediate area, the distribution of all previously recorded cultural resources, as well as an assessment of the potential of the proposed project area to contain cultural resources. The field crew traversed and visually reconnoitered the entire proposed project area. Additionally, systematic shovel testing was conducted throughout the project area.

Shovel Testing

Once pedestrian survey had been completed, a series of parallel, north-south survey transects were laid out across the project area. Survey transects were spaced at 30 m (98 ft) intervals, and shovel tests were excavated at 30 m (98 ft) intervals along each transect across the majority of the proposed project area. Shovel tests were excavated at 50 m (164 ft) intervals in the western 160 m (525 ft) of the proposed 42.5 ha (105 ac) generation facility due to the dissected topography that characterizes that portion of the project area.

Each excavated shovel test measured approximately 50 cm (19.7 in) in diameter and each was excavated to a depth of 100 cm (39.4 in) below surface. All shovel tests were excavated in 10 cm (3.9 in) artificial levels within natural strata, and the fill from each level was screened separately. The matrix excavated from each shovel test was screened through 0.64 cm (0.25 in) hardware cloth, and the matrix was examined for cultural material. Soil characteristics were recorded using Munsell Soil Color Charts and standard soil nomenclature. Information regarding soil texture and other characteristics was recorded on standardized record forms, shovel test forms, and project maps. Finally, each shovel test was backfilled immediately upon completion of the archeological recordation process.

Site Recordation and Delineation

A total of seven cultural resources loci were identified as a result of this investigation (Table

1). Each locus was recorded by transect number, shovel test number, and its distance from the origin of the transect. The position of each cultural resources locus then was plotted on the project maps (Port Hudson, LA 7.5' quadrangle, as well as field sketch maps), and the Universal Transverse Mercator (UTM) projection coordinates were calculated and then recorded (Table 1).

The subsequent locus delineation was designed to ascertain the nature, size, depth, integrity, age, and affiliation of the associated cultural deposits, as well as to assess the stratigraphic placement, density, and research potential of the cultural resources. In addition, information was gathered to assist in the subsequent assessment of whether or not the cultural resource could be regarded as significant or potentially significant, applying the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]).

The locus delineation process included a variety of tasks. For example, a site grid was established and a grid coordinate of N1000 E1000 was assigned to the shovel test where cultural material first was encountered. In each case, the locus delineation grid was oriented to grid north. Additional shovel tests were excavated at 15 m (49.2 ft) intervals in each of the cardinal directions to delineate both the horizontal and vertical extent of the cultural resource. No shovel tests were excavated beyond the boundaries of the proposed project right-of-way. Intensive pedestrian reconnaissance also was conducted within the area surrounding each identified resource. The execution of these two procedures allowed for both the size and configuration of each cultural resource to be determined within the limits of the Area of Potential Effect.

All archeological materials collected during the survey and locus delineation processes were bagged by provenience, assigned a temporary site number, and prepared for processing. Discussions pertaining to the cleaning, processing, and subsequent analysis of the recovered material appears below.

According to the standards established by the Louisiana Department of Culture, Recreation and Tourism, Office of Cultural Development, Division of Archaeology, archeological site status requires a cultural resource to contain five or more artifacts or evidence of intact cultural deposits. None of the cultural resources identified by these investigations warrant archeological site status

Laboratory Methods

All field specimen bags were cross-checked against the field notes and specimen inventories for accuracy and completeness. Following this quality-control process, recovered materials were washed by hand and sorted into basic material categories. The nature and structure of the laboratory analyses, however, were guided by the goals of the project. The first requirement of the research was to determine whether or not a cultural resource had the potential to meet the legal definition of an historic property. Therefore, particular care was taken to observe and record chronologically sensitive attributes of historic/modern period artifacts, and to evaluate, for example, whether or not the material was more than 50 years in age. Beyond the issue of minimum age, the artifact analysis consisted of making and recording a series of observations for each specimen. The observations were chosen to provide the most significant information, particularly that which is culturally and temporally diagnostic, about each specimen. All information was entered in a single relational database that was used to store, organize, and manipulate the data.

Historic/Modern Period Material

The analysis of historic/modern period material was organized by four typological levels: class, functional group, type, and subtype. Class represents the material category (e.g., ceramic, glass, or metal), and functional group follows the classifications established by South (1977) (e.g., architecture, kitchen, or personal). The third and fourth levels, type and subtype, described the temporally diagnostic attributes identified during analysis of the artifact. The identification of historic/modern period artifacts was facilitated by consulting standard reference works, including Coates and Thomas (1990), Fike (1987), Florence (1990), Jones and Sullivan (1985), Kovel and Kovel (1986), Miller (1980, 1991), Nelson (1968), South (1977), Speer (1979), Switzer (1974), Toulouse (1971, 1977), and Wilson (1981).

Prehistoric Materials Analysis

The prehistoric artifact assemblage recovered from the Thompson Creek Energy Center project area consisted entirely of flaked stone artifacts. The flaked stone artifacts were classified according to three typological levels: material, type, and subtype. Material indicated the raw material (e.g., chert, novaculite, quartz/quartzite) of the artifact. Type was used to separate the flaked stone artifacts into morphological or technological groups (e.g., flake, core, projectile point/knife). The third level of analysis, the subtype, included more specific information about the class of artifacts, such as presence of cortex, exhausted core, or corner notching of a projectile point/knife. These taxonomic levels followed classifications outlined by Callahan (1979), Crabtree (1972), and others. Temporally or culturally diagnostic tools were identified using established lithic typologies (e.g., Perino 1985, 1991; and Justice 1987).

Curation

Following acceptance of the final report, all archeological materials, records, photographs, and field notes will be curated with the:

State of Louisiana
Department of Culture, Recreation, and Tourism
Division of Archaeology
1051 3rd Street, Room 405
Baton Rouge, Louisiana 70804-4247
(504) 342-8170

CHAPTER VII

RESULTS AND RECOMMENDATIONS

The Phase I cultural resources survey and archeological inventory of the proposed Thompson Creek Energy Center included the examination of three project items (Figure 1). The first of these measured 42.5 ha (105 ac) in extent and it will be used for construction of the electric power generation facility. The second area encompassed 0.8 ha (2 ac) and it will house the associated power substation. The final project item measured 61 m (200 ft) in width and 100 m (328 ft) in length, it will extend between the proposed power generation facility and the associated substation.

The project area is situated approximately 9.8 km (6.1 mi) southeast of the town of St. Francisville in Sections 47 and 48 of Township 4 South, Range 2 West. In addition, it lies within the Central Gulf Coastal Plain and at the interface between the Uplands Complex and the Intermediate Complex (see Chapter II).

The investigation was designed to identify and to evaluate cultural resources (archeological sites, isolated finds, standing structures, cemeteries, and traditional cultural properties) situated within the project area that may be impacted as a result of this undertaking. The cultural resources survey and archeological inventory consisted of pedestrian reconnaissance and systematic shovel test excavations, as well as examination of files housed at the Louisiana Department of Culture, Recreation, and Tourism, Office of Cultural Development, Divisions of Archeology and Historic Preservation. These efforts were carried out between April 9 and 18, 2001. Shovel tests were excavated at 30 m (98 ft) intervals through the majority of the project area, though 30 m to 50 m (98 - 164 ft) intervals were utilized to assess the dissected topography found along the western edge of the project area.

Overview of Project Results

Documentary research identified 11 previously completed cultural resources surveys within 8.0 km (5.0 mi) of the proposed project area (See Chapter V). In addition, 10 previously recorded archeological sites were situated within 1.6 km (1.0 mi) of the Area of Potential Effect. Only one of the 10 identified sites was assessed as eligible for listing on the National Register of Historic Places, two of the sites were not assessed, while the remaining 7 were assessed as not eligible for listing on the National Register.

The field efforts resulted in the recovery of ten prehistoric and historic period artifacts from seven discrete cultural resources loci (Figure 6; Tables 1 and 4). The prehistoric artifacts consisted of eight pieces of lithic debitage recovered from seven shovel tests; none of those artifacts was culturally or temporally diagnostic. The historic material consisted of one whiteware ceramic sherd and a piece of flat glass. None of the cultural resource loci produced sufficient cultural material to warrant archeological site status.

Electric Power Generation Facility

The proposed electric power generation facility is positioned on Balls Bluff, and it overlooks the Mississippi River to the west and Thompson Creek to the east (Figure 1). The generation facility measures approximately 1,150 m in length and 560 m in width (3,773 x 1,837 ft), and it encompasses an area that measures 42.5 ha (105 ac) in size (Figure 6). The western portion of the area is characterized by

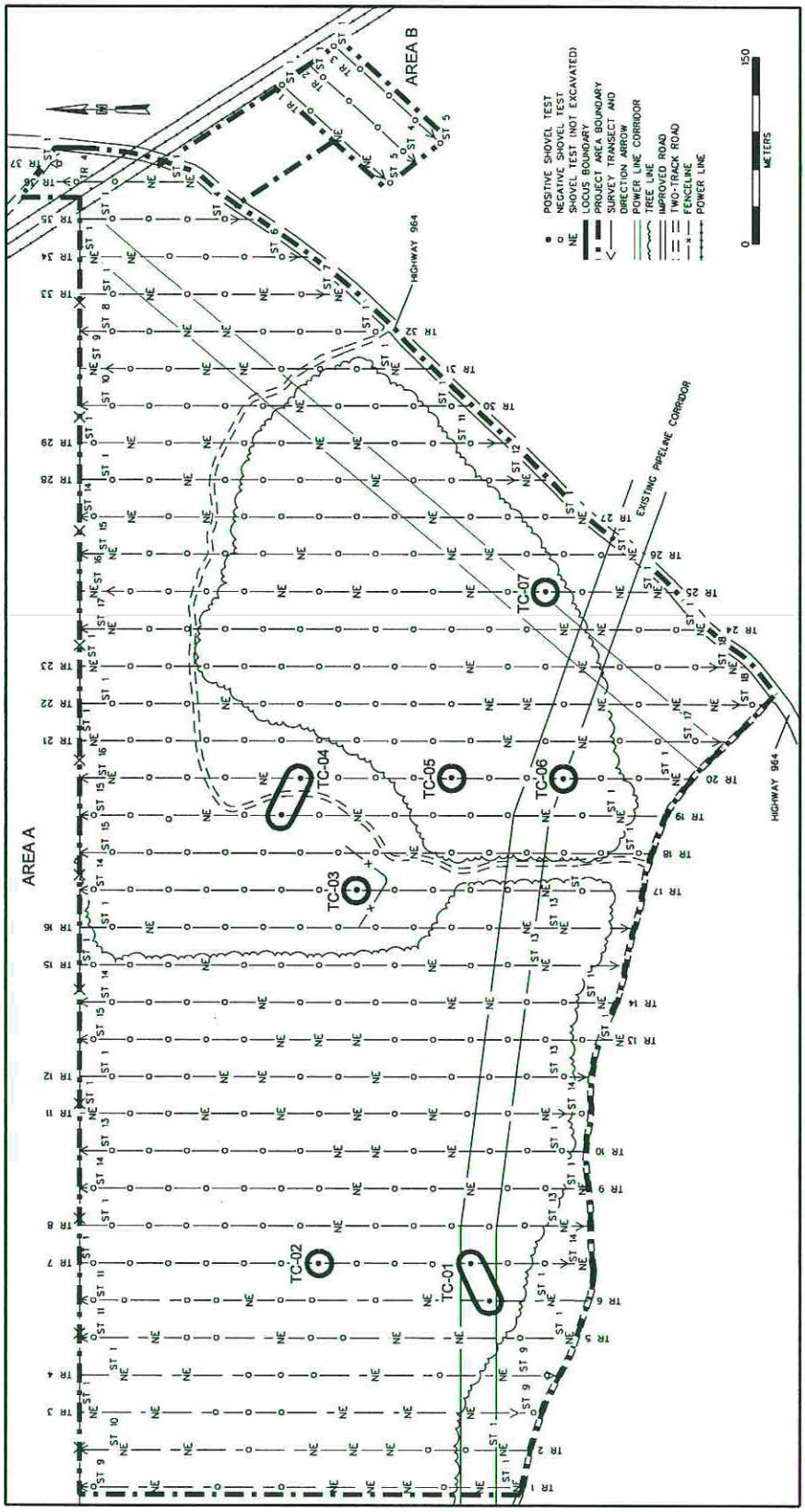

Figure 6. Map depicting Phase I cultural resources survey and archeological inventory of the Thompson Creek Energy Center facilities in West Feliciana Parish, Louisiana.

Table 4. Summary of Phase I cultural resources survey of the proposed Thompson Creek Energy Center, West Feliciana Parish, Louisiana.

PROJECT ITEM[1]	AREA	MAXIMUM LENGTH x WIDTH	NUMBER OF TRANSECT SHOVEL TESTS		NUMBER OF DELINEATION SHOVEL TESTS[2]	TOTAL POSITIVE SHOVEL TESTS	LOCI IDENTIFIED
			Planned	Excavated	Excavated		
Power generation facility	42.5 ha (105 ac)	1150 x 560 m 3773 x 1837 ft	442	322	43	9	Locus TC-01 through Locus TC-07
Substation facility	0.8 ha (2.0 ac)	128 x 64 m 420 x 210 ft	14	12	0	0	none
Power line corridor	0.6 ha (1.5 ac)	100 x 61 m 328 x 200 ft	N/A	N/A	N/A	N/A	none
Totals	43.6 ha (107 ac)	--	456	334	43	9	n=7 (3 Loci, 4 Isolated Finds)

highly dissected topography caused by several intermittent streams that drain into Alligator Bayou to the west. The central portion of the area is a generally level surface at the top of the bluff, and it has an elevation of approximately 30 m (100 ft) NGVD. Towards the east however, the surface slopes down gradually where it terminates along the lower slope of Balls Bluff, at an elevation of approximately 61 m (60 ft) NGVD. Vegetation throughout the area includes mixed hardwoods, pines, secondary herbaceous growth, and grasses (Figure 7). All seven of the cultural resource loci identified by this investigation were located within the boundaries of the proposed generation facility.

The area encompassing the proposed generation facility has experienced a variety of disturbances (Figure 8 and 9). The most severe disturbance of natural origin has been and continues to be erosion caused by the numerous intermittent drainages found through the western portion of the project item. Anthropogenic disturbances include road construction, pipeline and power line installation, logging activities, and construction of recreational facilities. Along the southern edge of the facility, an area up to 60 m (197 ft) in width has been disturbed by grading and filling activities related to an extant gravel road. Although there are several other roads throughout the project area, they are smaller, and the disturbances are less intensive. A natural gas pipeline crosses the southern half of the proposed generation station area, and a high power transmission line passes along the eastern edge of the area. Recent timber harvesting is evident in the north-central portion of the area, and it is likely that timber has been harvested from much of the area at some time in the past. A baseball/softball field is positioned near the center of the proposed generation facility. Although the ball field is situated on the most naturally level portion of the generation station area, it appears that at least some ground leveling activities occurred during construction of the field. Finally, the area adjacent to Highway 964 is included within the Highway 964 right-of-way and it has been impacted by road construction; that area is presently planted with grass.

A series of 37 north-south oriented transects were laid out at 30 m (98 ft) intervals to guide the placement of shovel tests excavated throughout the project area (Figure 6). The majority of the shovel test locations were excavated at 30 m (98 ft) intervals along transects (see above). In the western portion of the area, however, shovel tests were excavated at approximately 50 m (164 ft) intervals due to the highly dissected nature of the topography. A total of 442 planned shovel test locations were selected to provide coverage of the proposed power generation facility. Of these, 320 (72 percent) were excavated; the remaining shovel tests could not be excavated because of severe disturbance or excessive slope.

Electric Power Substation Facility

The proposed substation facility is positioned near the eastern foot of Balls Bluff on a terrace above Thompson Creek (Figure 1). The facility lies at an approximate elevation of 17 m

Figure 7. **Overview photograph of the proposed power generation facility, facing northeast from southwest corner.**

Figure 8. **Photograph illustrating erosion of steep slopes in western portion of the proposed power generation facility.**

Figure 9. Photograph illustrating road fill push pile as an example of disturbance in the proposed power generation facility.

(55 ft) NGVD and the area is relatively level. It measures approximately 128 x 64 m (420 x 210 ft) and it encompasses 0.8 ha (2.0 ac). The project area is positioned adjacent to the east side of Highway 964 and to the south of a high tension power line corridor that extends northwest-southeast (Figure 6). Much of the area is covered in mixed hardwood forest, though nearly one-third of the area is characterized by secondary growth established after timber harvesting (Figure 10). A series of three transects and 14 shovel tests were emplaced at 30 m (98 ft) intervals throughout this project item. During survey of the shovel tests 12 (86 percent) were excavated throughout this portion of the project area; two tests were not excavated because they were covered by tree fall and grading material from the adjacent railroad bed.

Transmission Line Corridor

The proposed transmission line corridor extends northeastwards from the substation to the northwestern end of the power generation facility. The proposed corridor measures 61 m (200 ft) wide and extends for a distance of approximately 100 m (328 ft). The 100 m (328 ft) length of the corridor spans the rights-of-way of a railroad track and Highway 964 (Figure 6). No shovel tests were excavated along the proposed transmission line corridor due to disturbances caused by the construction and ongoing use of both the railroad and the highway (Figure 10).

Cultural Resources Identified within the Project Area

A total of seven discrete cultural resources were identified as a result of the field investigations at the proposed Thompson Creek Energy Center. Prehistoric components of undetermined temporal or cultural affiliation were represented at six loci; four of those consist of isolated finds, while the remaining two loci produced two artifacts each. All of the prehistoric artifacts were characterized as pieces of lithic debitage and none were temporally diagnostic. The sixth locus dates from the historic period; the locus produced a whiteware ceramic sherd and a piece of glass. Fieldwork resulted in the recovery of 10

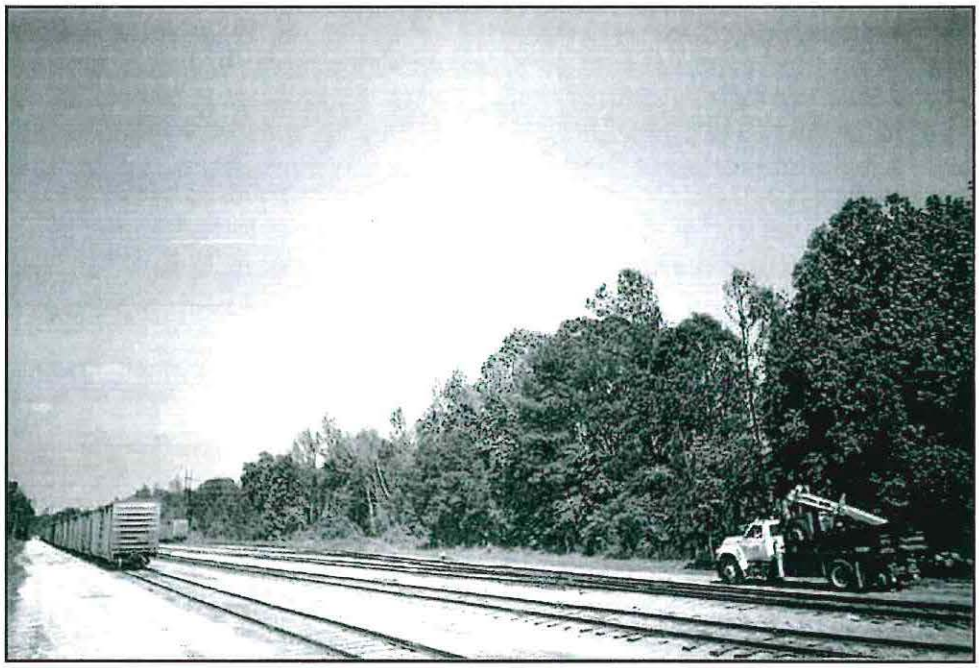

Figure 10. Overview photograph of the proposed power substation facility and transmission line corridor facing northeast.

artifacts from nine shovel tests. None of the seven loci produced sufficient cultural material to warrant archeological site status, and none of the 10 artifacts was temporally or culturally diagnostic.

Locus TC-01

Locus TC-01 is positioned on a level surface situated adjacent to one of the westward draining ravines in the western edge of the project area. The vegetation consists of mixed deciduous and coniferous trees (Figure 11). A natural gas pipeline crosses through the locus. In addition to the shovel tests excavated throughout the vicinity, an additional 11 shovel tests were completed to delineate the horizontal and vertical extent of Locus TC-01 (Figure 12). In total, 18 shovel tests were excavated in the vicinity of Locus TC-01. These efforts resulted in the recovery of two pieces of lithic debitage from Stratum I; both specimens were characterized as secondary chalcedony/agate flakes. Thus, Locus 01 is oval in configuration and it measures approximately 35 m by 20 m (115 x 65 ft).

A typical shovel test excavated at Locus TC-01 contained two strata in profile (Figure 13). Stratum I consisted of a dark grayish brown (10YR4/2) silty loam that extended from the surface to a depth of 7 centimeters (2.8 inches) below the surface (7 cmbs or 2.8 inbs). Stratum II was characterized as a layer of dark yellowish brown (10YR4/3) silt that extended from the base of Stratum I to an excavated depth of 100 cmbs (39.4 inbs).

Locus TC-02

The second locus, Locus TC-02, also is positioned at the edge of one of the steep westward flowing intermittent drainages found in the western portion of the project area. Deciduous trees characterize much of the vicinity, though bamboo can be found to the west, south and east of the locus (Figure 14). A total of four additional shovel tests were excavated to delineate the limits of the locus; no shovel tests were excavated to the southwest, i.e., in an area characterized by extremely steep slopes (Figure 15). In total, nine shovel tests were excavated in the vicinity of Locus TC-02. The investigation of Locus TC-02 produced only a single primary chalcedony/agate flake from one of the four excavated shovel tests. This artifact originated

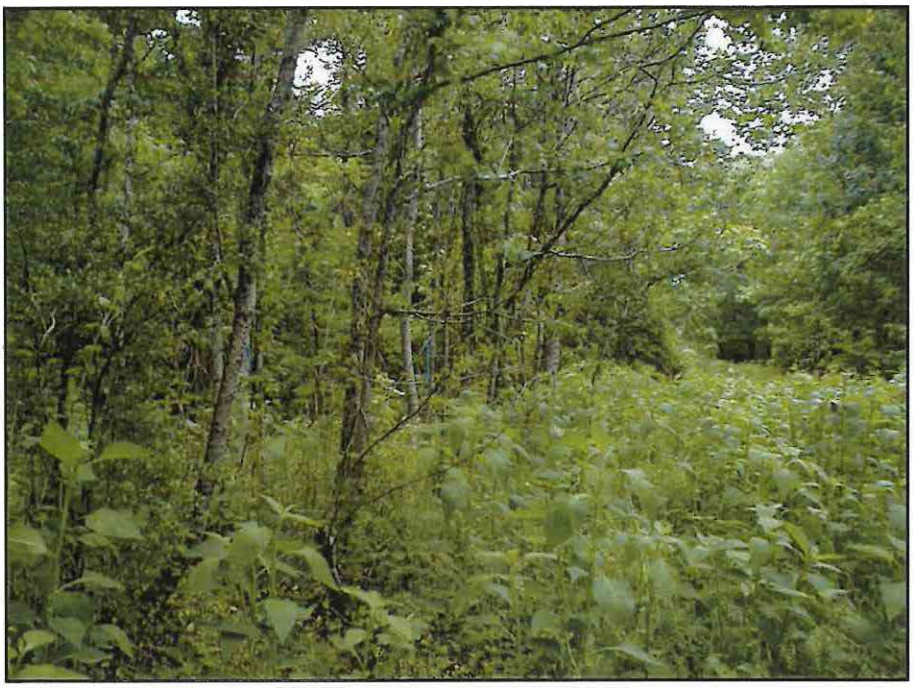

Figure 11. Overview photograph of Locus TC-01, facing southeast.

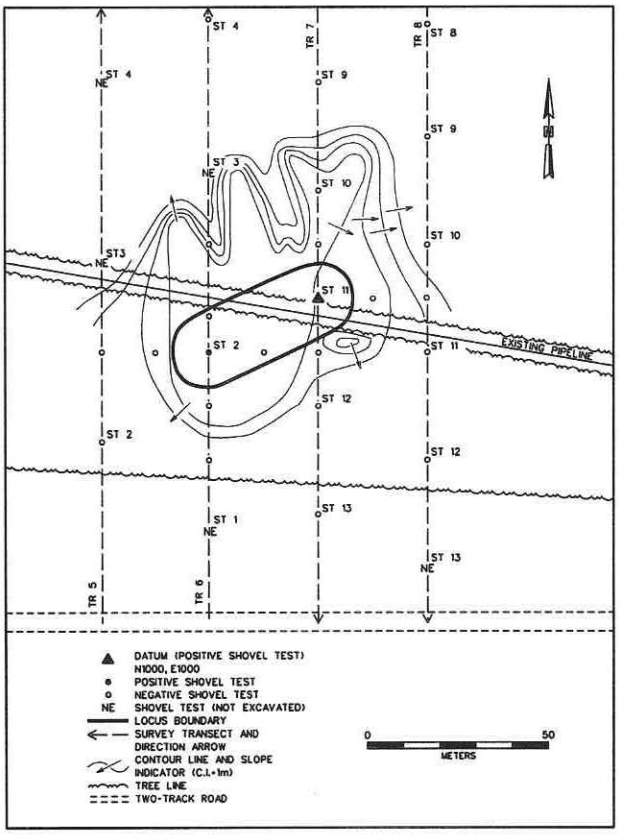

Figure 12. Map depicting shovel testing of Locus TC-01.

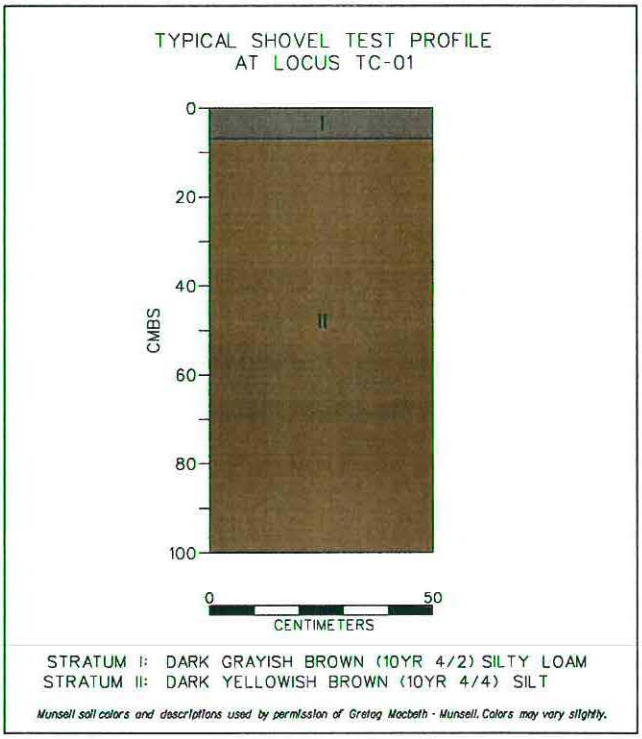

Figure 13. Profile of a typical shovel test (N1015 E1000) excavated at Locus TC-01.

Figure 14. Overview photograph of Locus TC-02, facing north from ravine.

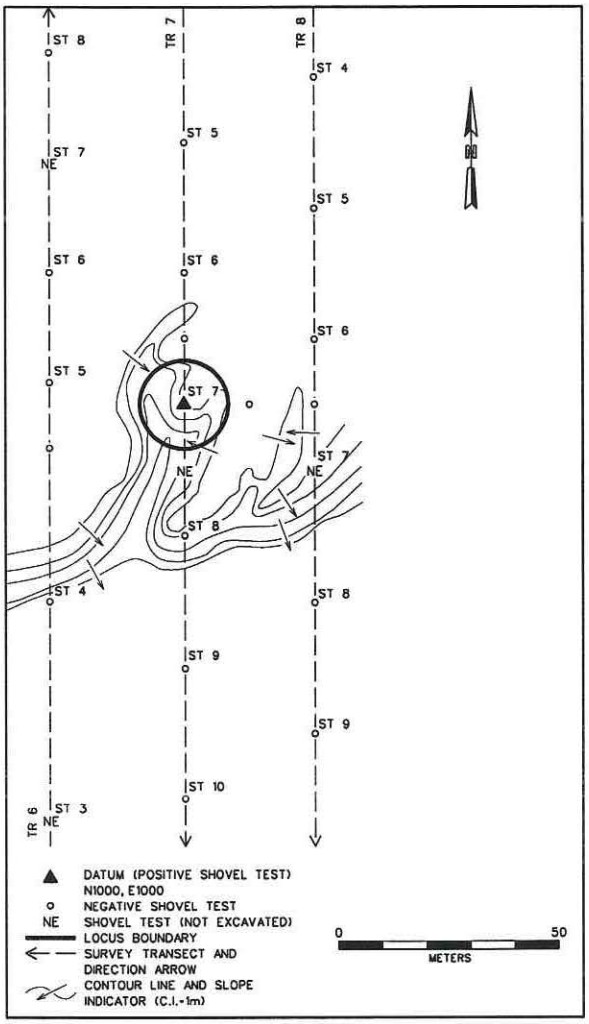

Figure 15. Map depicting shovel testing of Locus TC-02.

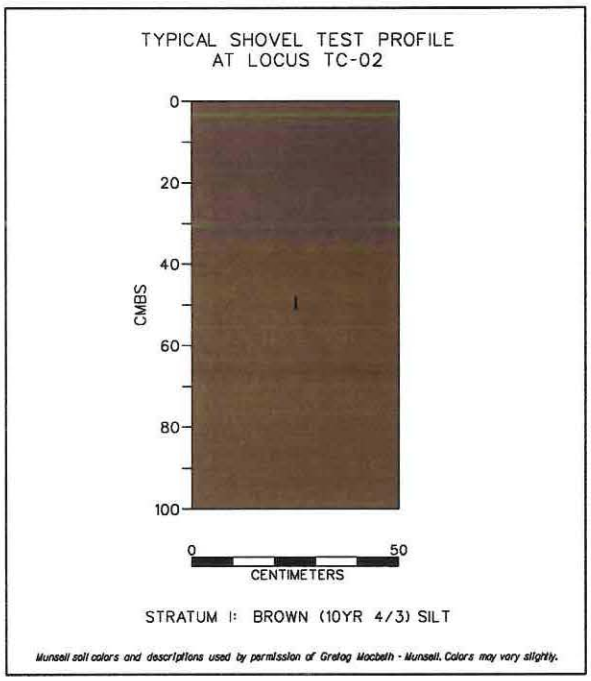

Figure 16. Profile of a typical shovel test (N1015 E1000) excavated at Locus TC-02.

from Stratum I, from a depth of less than 30 cm (11.8 in) below surface. Locus 02 can be characterized as an isolated find.

Only a single stratum, Stratum I, was revealed during the subsequent assessment of Locus TC-02 (Figure 16). This stratum was characterized as a layer of brown (10YR4/3) silt that extended to an excavated depth of 100 cmbs (39.4 inbs).

Locus TC-03

Locus TC-03 was identified within the prepared surface of an abandoned baseball field near the center of the project area. It is now covered by grass and scattered pine saplings (Figure 17). In addition to the planned shovel tests, six additional shovel tests were excavated throughout the area to delineate the extent of the locus, and a total of 13 shovel tests were excavated in the vicinity (Figure 18). These efforts resulted in the recovery of a single chalcedony/agate tertiary flake; it originated from the upper 10 cm (3.9 in) of the shovel test. Locus TC-03 can be characterized as an isolated find.

The profile of a typical shovel test excavated at Locus 03 revealed two strata (Figure 19). Stratum I was characterized as a 12 cm (4.7 in) thick layer of brown (10YR 4/3) silt. Below Stratum I, Stratum II extended to an excavated depth of 100 cmbs (39.4 inbs), and it was characterized as a light brown (10YR 6/2) silty clay.

Locus TC-04

Locus TC-04 was identified in the central portion of the project area, where it straddled a dirt and gravel road that passes to the east side of the ball field. The area is dominated by grass and a few scattered pine saplings (Figure 20). Following the initial identification of the locus, eight additional shovel tests were excavated to

Figure 17. Overview photograph of Locus TC-03, facing east.

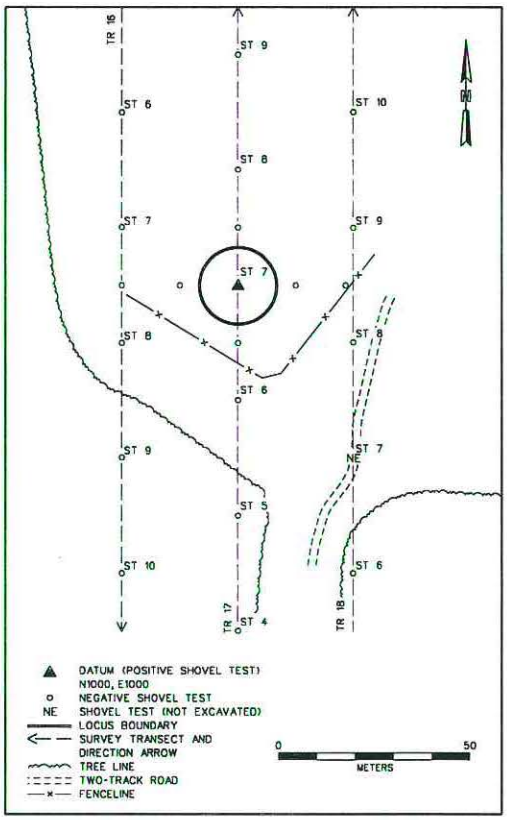

Figure 18. Map depicting shovel testing of Locus TC-03.

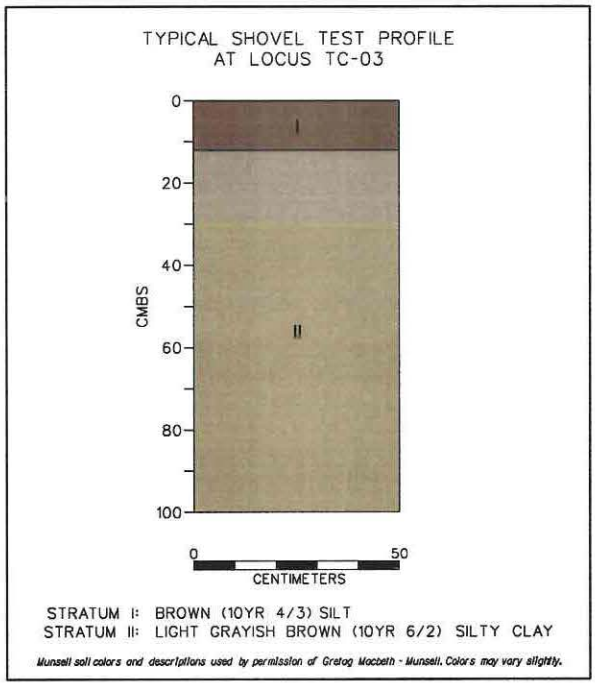

Figure 19. Profile of a typical shovel test (N1015 E1000) excavated at Locus TC-03.

Figure 20. Overview photograph of Locus TC-04, facing northeast.

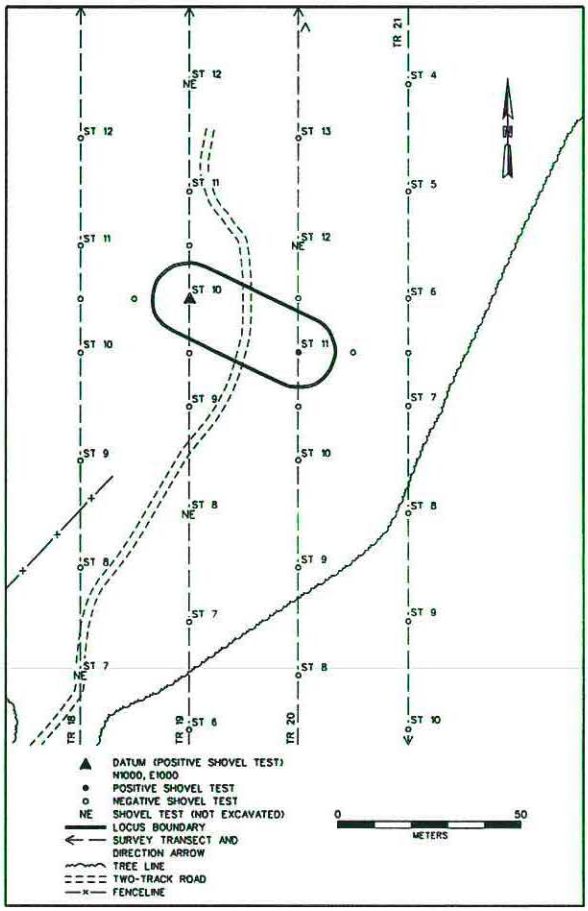

Figure 21. Map depicting shovel testing of Locus TC-04.

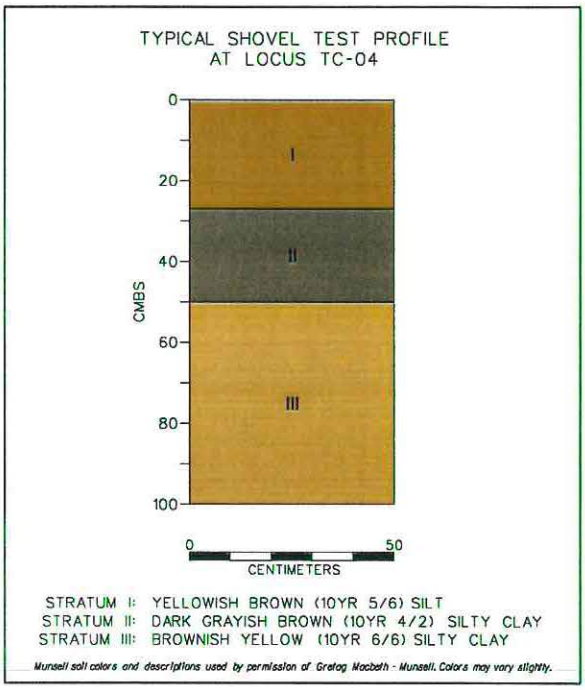

Figure 22. Profile of a typical shovel test (N1015 E1000) excavated at Locus TC-04.

delineate the horizontal and vertical extent of the locus (Figure 21). In total, 17 shovel tests were excavated in the vicinity of Locus TC-04. Only two flaked stone artifacts were recovered from Locus TC-04; both of them were recovered from Stratum I, though from different shovel tests. Both artifacts were classified as chalcedony/agate flakes, one of them a primary flake and the other a secondary flake. Locus TC-04 measured 45 m x 20 m (148 x 65 ft) in size and it is oval in shape.

A typical shovel test excavated at Locus TC-04 revealed three strata in profile (Figure 22). Stratum I was characterized as a 27 cm (10.6 in) thick layer of yellowish brown (10YR 5/6) silt. Stratum II extended from 27 cmbs to 50 cmbs (10.6 inbs to 19.7 inbs), and it was characterized as a deposit of dark grayish brown (10YR4/2) silty clay. Stratum III was characterized as a layer of brownish yellow (10YR 6/6) silty clay that extended to an excavated depth of 100 cmbs (39.4 inbs).

Locus TC-05

Locus TC-05 was identified in the south-central portion of the project area. It is positioned on a level area that has been partially clear-cut of timber (Figure 23). During the subsequent locus delineation process six shovel tests were excavated to delineate both the horizontal and vertical extent of this resource (Figure 24). In total, 13 shovel tests were excavated in the vicinity of this locus. Only a single artifact was recovered, so Locus TC-05 can be characterized as an isolated find. That artifact consisted of a secondary chalcedony/agate flake that originated from Stratum II and at a depth of 20 - 30 cmbs (7.9 - 11.8 inbs).

A typical shovel test excavated at Locus 05 revealed five strata in profile (Figure 25). Stratum I consisted of a 10 cm (3.9 in) thick layer of light gray (10YR 7/2) silt. Stratum II extended to

Figure 23. Overview photograph of Locus TC-05, facing east.

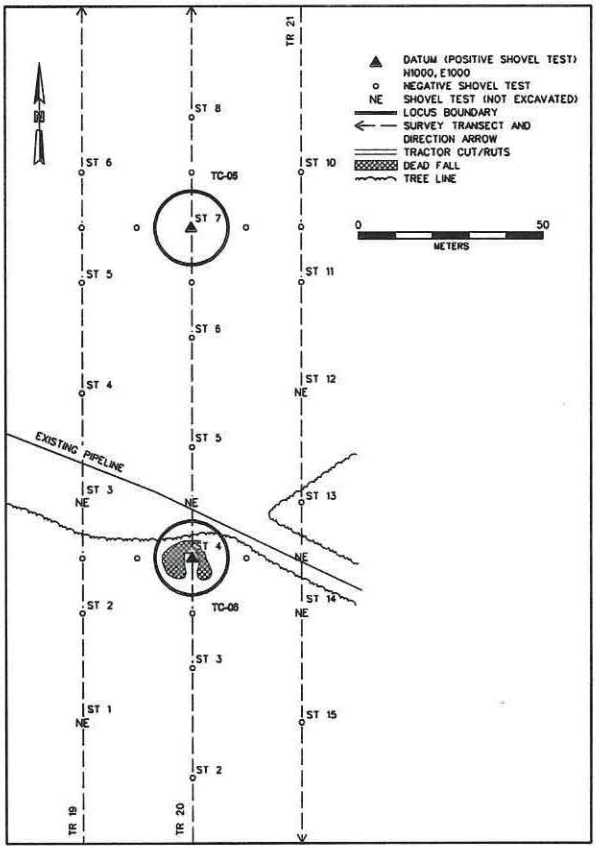

Figure 24. Map depicting shovel testing of Locus TC-05 and Locus TC-06.

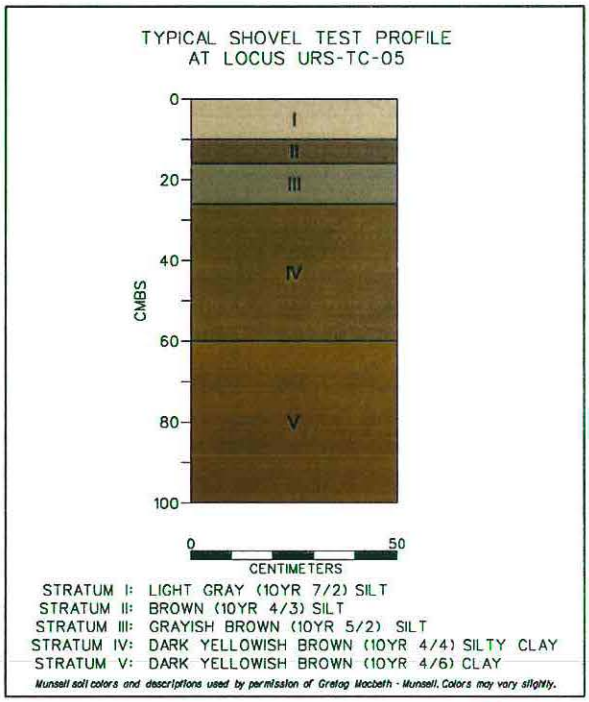

Figure 25. Profile of a typical shovel test (N1000 E985) excavated at Locus TC-05.

a depth of 16 cmbs (6.3 inbs) and it was characterized as a deposit of brown (10YR 4/3) silt. The third stratum measured 10 cm (3.9 in) thickness and it was described as a deposit of grayish brown (10YR 5/2) silt that extended to a depth of 26 cmbs (10.2 inbs). Stratum IV, a layer of dark yellowish brown (10YR 4/4) silty clay, extended from 26 - 60 cmbs (10.2 - 23.6 inbs). Finally, Stratum V was characterized as a dark yellowish brown (10YR 4/6) silty clay that extended to an excavated depth of 100 cmbs (39.4 inbs).

Locus TC-06

Locus TC-06 was identified on a relatively level surface situated in the south central portion of the project area. Timber has been harvested from the vicinity, and the current vegetation consists of secondary growth and deadfall with some deciduous trees in the surrounding area (Figure 26). Following initial identification of the locus, four additional shovel tests were excavated to delineate the locus, and a total of nine shovel tests were excavated in the immediate vicinity (Figure

Figure 26. Overview photograph of Locus TC-06, facing south.

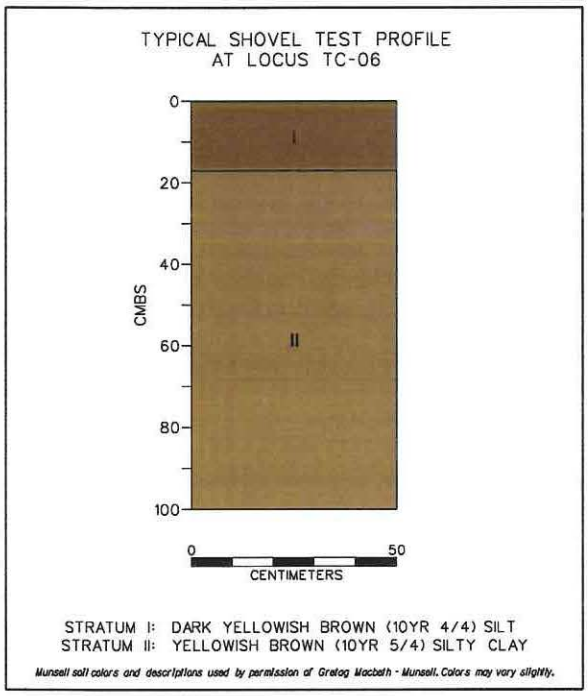

Figure 27. Profile of a typical shovel test (N1000 E1015) excavated at Locus TC-06.

24). These efforts resulted in the recovery of only a single artifact: a secondary chalcedony/agate flake. The specimen was recovered from the upper 10 cm (3.9 in) of Stratum I; the locus can be characterized as an isolated find.

A typical shovel test excavated within Locus TC-06 revealed two strata in profile (Figure 27). Stratum I was characterized as a 17 cm (6.7 in) thick layer of dark yellowish brown (10YR 4/4) silt. The lower excavated stratum, Stratum II, consisted of a deposit of yellowish brown (10YR 5/4) silty clay; it extended to an excavated depth of 100 cmbs (39.4 inbs).

Locus TC-07

Locus TC-07 is the only locus that dates from the historic period. It was identified in the southeastern portion of the project area, near the crossing of the electrical line and an extant natural gas pipeline. The area contains a mixed deciduous and coniferous forest on a surface that slopes gently (i.e., 3 - 5 percent) down to the southeast (Figure 28). A total of five shovel tests

Figure 28. Overview photograph of Locus TC-07, facing north.

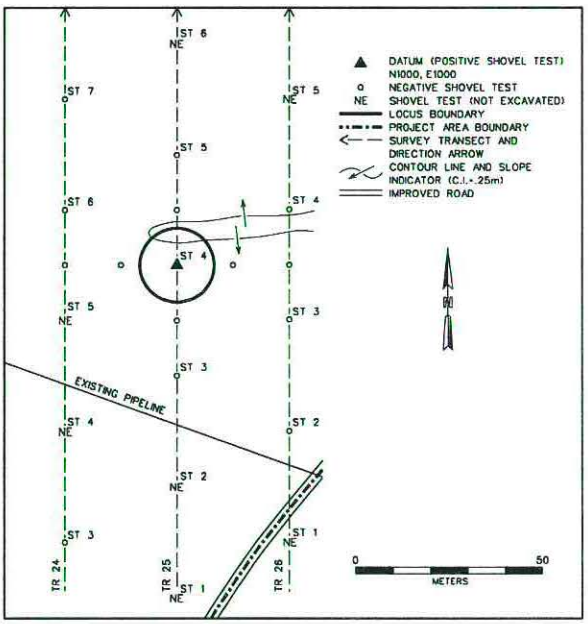

Figure 29. Map depicting shovel testing of Locus TC-07.

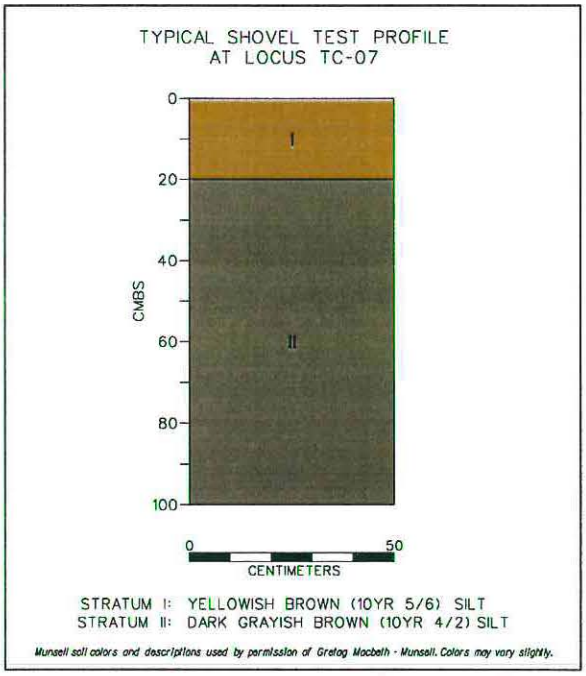

Figure 30. Profile of a typical shovel test (N1015 E1000) excavated at Locus TC-07.

were excavated to delineate the boundaries of the locus (Figure 29), however, only two artifacts were recovered. These two artifacts consisted of a plain whiteware ceramic sherd and a piece of a colorless bottle glass. Because the cultural materials were recovered from only a single shovel test, Locus 07 is considered to be circular, and have a diameter of less than 20 m (65.6 ft).

A typical shovel test excavated at Locus 07 revealed two strata in profile (Figure 30). Stratum I was characterized as a 20 cm (7.9 in) thick layer of yellowish brown (10YR5/6) silt. Stratum II consisted of a deposit of dark grayish brown (10YR4/2) silt that extended from 20 - 100 cmbs (7.9 - 39.4 inbs).

Summary and Recommendations

The Phase I cultural resources survey and archeological inventory of the proposed Thompson Creek Energy Center included both pedestrian reconnaissance and the excavation of 375 shovel tests (Table 4). That effort produced 10 artifacts that were recovered from seven discrete cultural resources loci (Table 1); six of these loci produced prehistoric material, while one locus produced only historic period artifacts. None of the cultural resource loci produced sufficient cultural material to warrant archeological site status.

Due to the paucity of cultural material, the absence of temporally and culturally diagnostic artifacts, and the lack of intact cultural deposits, none of the seven cultural resource loci possesses the qualities of significance as defined by the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]). The proposed Thompson Creek Energy Center project will have no adverse effects on cultural resources listed on or eligible for the National Register of Historic Places. No additional testing of the planned facility is recommended.

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APPENDIX I

CULTURAL MATERIALS RECOVERED DURING SURVEY

Table 1. Prehistoric Artifacts recovered from the proposed Thompson Creek Energy Center.

SITE/LOCUS	TRANSECT	SHOVEL TEST	STRATUM	LEVEL	MATERIAL	TYPE	SUBTYPE	COUNT	TOTALS
Locus 01	6	2	I	5	Chalcedony/ Agate	Flake	Secondary	1	
	7	11	I	7	Chalcedony/ Agate	Flake	Secondary	1	
Locus 01 Total									2
Locus 02	7	7	II	3	Chalcedony/ Agate	Flake	Primary	1	
Locus 02 Total									1
Locus 03	17	7	I	1	Chalcedony/ Agate	Flake	Tertiary	1	
Locus 03 Total									1
Locus 04	19	10	I	1	Chalcedony/ Agate	Flake	Tertiary	1	
	20	11	I	2	Chalcedony/ Agate	Flake	Primary	1	
Locus 04 Total									2
Locus 05	20	7	II	3	Chalcedony/ Agate	Flake	Secondary	1	
Locus 05 Total									1
Locus 06	20	4	I	1	Chalcedony/ Agate	Flake	Secondary	1	
Locus 06 Total									1
Prehistoric Artifacts Grand Total									**8**

Table 2. Historic Artifacts recovered from the proposed Thompson Creek Energy Center.

SITE/LOCUS	TRANSECT	SHOVEL TEST	STRATUM	LEVEL	MATERIAL	FUNCTION	TYPE	SUBTYPE	COUNT	TOTALS
Locus 07	25	4	I	1	Ceramic	Kitchen	White ware	Undecorated	1	
					Glass	Kitchen	Bottle	Colorless	1	
Locus 07 Total										2
Historic Artifacts Grand Total										**2**

APPENDIX II

SCOPE OF WORK

SCOPE OF WORK

CULTURAL RESOURCES SURVEY AND ARCHEOLOGICAL INVENTORY OF THE PROPOSED THOMPSON CREEK ENERGY CENTER IN WEST FELICIANA PARISH, LOUISIANA.

This document outlines the work to be conducted as part of the Phase I cultural resources survey and archeological inventory of the proposed Thompson Creek Energy Center for URS Greiner Corporation of Baton Rouge, Louisiana. The proposed undertaking includes three items that will be investigated for cultural resources. These areas include an electric power generation facility, power substation facility, and a 30.5 m (100 ft) wide, 100 m (328 ft) long right-of-way corridor that lies between the two areas. These project items encompass a total of approximately 43.6 (107 ac).

Nature of the Work to be Performed

R. Christopher Goodwin & Associates, Inc., will conduct an archeological and architectural inventory of the entire project area associated with the URS energy center project. The goals of this research will be to identify and to evaluate all cultural resources (archeological sites, cultural resources loci, standing structures, cemeteries, and traditional cultural properties) situated within the Areas of Potential Effect that may be impacted by the proposed undertaking. All work will be performed in accordance with the procedures outlined in the National Historic Preservation Act of 1966, as amended; the Archaeological and Historic Preservation Act of 1974; the Archaeological Resources Protection Act of 1979, as amended; and Title 36 of the Code of Federal Regulations, Parts 60-66 and 800, as appropriate. In addition, this survey effort will abide by the standards set forth in *Archeology y and Historic Preservation: The Secretary of the Interior's Guidelines* (48 CFR 44716-42), and the guidelines established by the Louisiana Division of Archaeology in *Investigation and Report Standards* (1999) and *Standards and Guidelines for Curation of Archaeological Collections* (1995).

Project Description

The project area is situated approximately 9.8 km (6.1 mi) southeast of the town of St. Francisville and in Sections 47 and 48 of Township 4 South, Range 2 West, and within the uplands of the Central Gulf Coastal Plain. The proposed undertaking includes three items, and each will be investigated for cultural resources. These areas include a 42.5 ha (105 ac) area designed to house an electric power generation facility; a 0.8 ha (2 ac) power substation facility; and a 30.5 m (100 ft) wide, 100 m (328 ft) long right-of-way corridor that lies between the two areas. Therefore, a total of 43.6 (107 ac) will be encompassed by the survey.

Research Design and Field Methodology

Fieldwork for this investigation is designed to obtain data pertaining to the nature and distribution of cultural resources located within the proposed project area. The survey will be comprehensive in nature, and it will be intensive enough to locate and to assess any cultural properties situated within the proposed Areas of Potential Effect that are listed on or eligible for the National Register of Historic Places. Survey will include on-ground inspection of all portions of the proposed project area and adjacent areas; the

field methodology will include pedestrian survey, systematic shovel testing and mechanical excavation of deep test trenches. Specifically, efforts will be directed towards identification of cultural resources that might possess the qualities of significance as defined by the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]).

Shovel Testing

Following the standards established by the Louisiana Division of Archaeology, shovel tests will be excavated at 30 m (98 ft) intervals throughout portions of the Area of Potential Effect deemed to have a high probability for containing cultural resources. Shovel test intervals of 50 m (164 ft) will be employed in areas determined to have low probability for containing intact cultural deposits (e.g., steeply sloped areas). A preliminary review of the project areas suggests that approximately half of the Area of Potential Effect has a high probability for containing intact cultural deposits. Consequently, approximately 280 shovel tests will be excavated to provide adequate coverage of the project area. A series of transects will be used to control the placement and recordation of shovel test excavation data. Transects will be spaced every 30 m (98 ft) across each of the three proposed project items. Shovel tests along adjacent transects will be offset to provide maximum coverage of each of the project parcels.

Each shovel test excavated during survey of the proposed rights-of-way will measure approximately 50 cm (19.7 in) in diameter, and each will extend to a minimum depth of 10 cmbs (39.4 inbs) or until excessive amounts of ground water hinder excavation. In all cases, excavation will extend a minimum of 20 cm (7.9 in) into sterile deposits. All shovel test fill will be screened through 0.64 cm (0.25 in) hardware cloth; extremely wet soils will be hand-sifted, troweled, and examined visually for cultural material. Each shovel test will be excavated in 10 cm (3.9 in) artificial levels within natural strata and the fill from each level will be screened separately. Munsell Soil Color Charts will be used to record soil color; soil texture and other identifiable characteristics also will be recorded using standard soils nomenclature. All shovel tests will be backfilled immediately upon completion of the archeological recordation process.

Site Recordation and Delineation

Any cultural resources identified during survey will be examined intensively to ascertain the nature, size, depth, integrity, age, and affiliation of the associated cultural deposits. Delineation also will be used to assess the stratigraphic placement, density, and research potential of each archeological site identified as a result of this investigation. Information will be gathered to assist in the subsequent assessment of a site as not significant or as potentially significant applying the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]). Archeological recordation will include a combination of the following: (1) the establishment of a site datum; (2) intensive surface reconnaissance of the site area; and (3) the excavation of tightly spaced shovel tests along rays emanating from datum to delineate both the horizontal and vertical extent of the site and its configuration. The locations of all sites will be recorded on project maps and USGS topographic maps.

Delineation will be sufficient to provide the data necessary to make a preliminary site evaluation (i.e., an assessment of not significant, potentially significant, or significant) applying the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]). Artifact distributions and the stratigraphic positions of all artifacts will be used in compiling the site description, as well as to support a clear and concise statement regarding site integrity for each identified site. Finally, Louisiana site forms will be completed for all archeological sites identified and delineated during survey.

Architectural Survey

The current investigation also will be designed to document and record any standing structures older than 50 years in age and situated within the project area. Since the proposed undertaking has the potential to impact or destroy historic properties, the purpose of this architectural recordation will be to: (1) collect reconnaissance-level architectural survey data for each building 50 years in age or older located within or immediately adjacent to the proposed Area of Potential Effect; (2) apply the National

Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]) to each recorded structure; and (3) apply the Advisory Council on Historic Preservation's Criteria of Effect to each historic property. All architectural investigations will be undertaken in accordance with guidelines established in *National Register Bulletin 24: Guidelines for Local Surveys: A Basis for Preservation Planning* (National Park Service 1995). The locations of all structures will be recorded on project maps and USGS topographic maps.

Laboratory Analysis and Curation

If any archeological sites are identified during survey, the cultural material recovered from these locations will be washed and analyzed. All recorded data will be encoded into a Microsoft Access database. The nature and structure of the artifact analyses will be guided by the goals of the project. The first requirement of the research will be to determine whether a cultural resources locus has the potential to meet the legal definition of an historic property. Therefore, particular care will be taken to observe and record chronologically sensitive attributes of historic artifacts, and to evaluate, for example, whether or not the material is more than 50 years in age.

Beyond the determination of minimum age, the artifact analysis will consist of making and recording a series of observations for each specimen. The observations will be chosen to provide the most significant and temporally diagnostic information about each specimen. A total of four separate databases may be used to store, organize, and manipulate the data generated by the analytical process. Separate databases will be used for analyzing the prehistoric lithics, prehistoric ceramics, historic/modern artifacts, and faunal remains recovered during survey. The use of the different databases will reflect the differences in the analytical protocols required to study thoroughly these different types of material. The laboratory analysis will be completed within one week after fieldwork.

Curation

Any artifacts recovered during survey will be returned to the property owner if requested. All records, photographs, and field notes, and with landowner permission, the artifacts will be curated with the:

State of Louisiana
Department of Culture, Recreation, and Tourism
Division of Archaeology
1051 3rd Street, Room 405
Baton Rouge, Louisiana 70804-4247
(504) 342-8170

Draft Report Writing and Production

Following the laboratory analysis, a draft report that summarizes all of the data collected as a result of this investigation will be prepared and submitted to URS Greiner Corporation for review and comment. The draft report will include a description of the proposed energy facility project; a discussion of the local geology and environment; an overview of the regional prehistory, history, and previous archeological investigations completed in the area; descriptions of the field and laboratory methods utilized to complete the investigation; a discussion of the results of the field survey; an assessment of resource significance applying the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]) for each cultural resource identified during survey; maps illustrating the locations of the proposed energy facility and any identified cultural resources; a discussion of project impacts; and cultural resource recommendations. At least three copies of the draft report, and after review, seven copies of the final report (one unbound) will be submitted to URS Greiner Corporation. The draft report will be finished within six weeks after the completion of fieldwork. The final report will be completed within two weeks of the receipt of comments from URS Greiner Corporation.

APPENDIX III

UNEXPECTED DISCOVERIES AND EMERGENCY PROCEDURES

CULTURAL RESOURCES INVENTORY OF THE PROPOSED THOMPSON CREEK ENERGY FACILITY IN WEST FELICIANA PARISH, LOUISIANA

Archeological or historical sites occasionally are discovered during construction projects, regardless of whether the project area has been subjected to a complete and thorough cultural resources survey and archeological inventory. As a result, URS Greiner Corporation has planned for unexpected archeological discoveries. When the initial steps in the Section 106 process (i.e., the identification and evaluation of historic properties) indicate that historic properties are likely to be discovered as a result of an undertaking, an unexpected discoveries plan generally is developed for the treatment of such properties. This plan often is included as documentation submitted to the State Historic Preservation Officer (SHPO) as part of the effort to assess the effects of the undertaking (36 CFR 800.11 [a]). This document represents such a plan.

If unidentified cultural resources are discovered during construction, several steps will be undertaken. Initially, URS Greiner Corporation will make reasonable efforts to avoid or minimize the damage to the cultural resource (36 CFR 800.11 [b][3]). If significant cultural resources are discovered, the SHPO will be contacted immediately and he/she will be advised. As much information as possible concerning the cultural resource, such as resource type (archeological or architectural), location, and size, as well as any information on its National Register eligibility, will be provided to the SHPO. Then, if required, a mitigation plan will be prepared for the cultural resource discovered. This plan will be sent to the SHPO for review and comment. The parties involved will be expected to respond with preliminary comments in a timely manner, and final comments will be expected to be provided relatively soon after the special request is made. URS Greiner policy will be to avoid further destruction to the resource until a formal data recovery mitigation plan can be executed.

American Indians Religious Freedom Act (AIRFA)

AIRFA promotes coordination with Native American religious practitioners regarding the effects of federal undertakings upon their religious practices. Consultation will follow NEPA guidelines. Impacts of importance to Native Americans may include flora and fauna, viewsheds, artifacts, and sites. Guidelines for consultation under AIRFA still are not determined, and therefore all questions will be directed to the SHPO.

Disposition of Human Remains

The discovery and/or disturbance of human remains is a sensitive issue that must be addressed if the situation arises. It is possible that human remains could be encountered if an unmarked grave or a cemetery is impacted by the planned undertaking. If human remains are discovered inadvertently exposed, URS Greiner Corporation will proceed as in the case of any normal emergency situation.

If human remains are encountered, the Sheriff and the SHPO will be notified within 24 hours of the discovery. In practice, URS Greiner Corporation will make a reasonable effort to identify and locate parties who can demonstrate direct kinship with the interred individuals. If such people are located, URS Greiner Corporation will consult with them in a timely manner to determine the most appropriate treatment of the recovered burials. If the unexpected discovery consists

of Native American human remains or associated funerary furniture, then URS Greiner Corporation will consult the SHPO immediately regarding the appropriate measures to handle such a discovery. If it can be determined adequately that the disturbed burials have an affinity to any federally recognized Native American group or to other ethnic groups, a reasonable effort will be made to identify, locate, and notify leaders or representatives of these groups.

If an association with a specific Native American group or other ethnic group cannot be made, then URS Greiner Corporation will make a reasonable effort to locate and notify group(s) that may have a legitimate interest in the disposition of the remains based on a determination of generalized cultural affinity by a recognized professional. Any costs that accrue as a result of consultation, treatment, curation, etc., will be the responsibility of URS Greiner Corporation. Qualified groups will be provided an opportunity to consult in determining the appropriate treatment of the interment. It will be the claimants' responsibility, however, to document and validate their claim.