

Exhibit U-A, Holly Ridge Northwest Site Historic Preservation Phase1

A PHASE I CULTURAL RESOURCE SURVEY OF THE PROPOSED HOLLY RIDGE NORTHWEST DEVELOPMENT IN RICHLAND PARISH, LOUISIANA



by
*Benjamin J. Bilgri, Jay W. Gray,
and Paul D. Bundy*

Prepared for

Denmon Engineering, Inc.



Prepared by



Kentucky | West Virginia | Ohio
Wyoming | Illinois | Indiana | Louisiana | Tennessee
Utah | Virginia | Colorado

A PHASE I CULTURAL RESOURCE SURVEY OF THE PROPOSED HOLLY RIDGE NORTHWEST DEVELOPMENT IN RICHLAND PARISH, LOUISIANA

By
Benjamin J. Bilgri, Jay W. Gray, and Paul D. Bundy

Prepared for

Randy Denmon
Denmon Engineering, Inc.
P.O. Box 8460
Monroe, Louisiana 71211
randy@denmon.com
www.denmon.com

Prepared by

Cultural Resource Analysts, Inc.
7330 Fern Avenue, Suite 1104
Shreveport, Louisiana 71105
Phone: (318) 213-1385
Email: bundypauld@crai-ky.com
www.crai-ky.com
CRA Project No.: L15D001



Paul D. Bundy, MA, RPA
Principal Investigator

May 22, 2015

ABSTRACT

Cultural Resource Analysts, Inc., personnel completed a cultural resource file search and intensive field survey during the period extending from February 18 to April 17, 2015, as part of the Louisiana Economic Development certification process for the Holly Ridge Northwest property in Richland Parish, Louisiana. This property consists of a single tract measuring approximately 115 ha (284 acres) in area and is located to the south of the community of Holly Ridge, Louisiana.

The records review consisted of a search of online files maintained by the Louisiana Office of Cultural Development, Division of Archaeology, correspondence with the project proponent regarding recently completed work on the property, and a review of historic maps to identify any cultural resources or cultural resource investigations previously documented in the area. The records review indicated that five cultural resource investigations (22-0091, 22-1183, 22-1703, 22-4252, and a reconnaissance survey), and seven archaeological sites (16RI5, 16RI213, 16RI238, and 16RI302–16RI305) had been previously documented within a 1.6 km (1.0 mi) radius of the project area. In addition, the review of historic maps indicated that 11 structures were depicted in the project area, suggesting that historic cultural resources were likely to be found in the area.

Of the previous work in the area, one project, the reconnaissance survey, previously examined the current project area in a reconnaissance-level pedestrian survey. That work identified a number of field loci and documented three sites in the project area (16RI303–16RI305). As the reconnaissance survey was intended for planning purposes, no systematic subsurface investigation or site delineation was performed during that investigation.

The current field investigation consisted of a shovel test survey with screened 30-x-30 cm (12-x-12 in) shovel tests excavated at 30 or 50 m (98 or 164 ft) intervals, depending upon the probability of encountering cultural material, as outlined in the Louisiana Office of Cultural Development, Division of Archaeology guidelines. The entire project area was also visually inspected for cultural material during the shovel test survey. This work resulted in the recording of 8 new archaeological sites (16RI313–16RI320) and 10 isolated finds, and the relocation and delineation of one site (16RI305) previously documented during the reconnaissance survey. The locations of the two other sites previously documented during the reconnaissance survey (16RI303 and 16RI304) were revisited and examined, but no cultural material associated with these sites was located on the surface or in the shovel tests conducted at the locations.

All of the cultural resources documented during this project were investigated following the Louisiana Office of Cultural Development, Division of Archaeology guidelines, including the previously documented sites and field loci. Due to a high level of disturbance and lack of integrity, all 11 of the archaeological sites (16RI303–305 and 16RI313–320) and the 10 isolated finds documented within the investigated area have a low research potential. As a result, these sites are recommended as not eligible for listing in the National Register of Historic Places, and no further work is recommended.

Based on the findings of the records review and cultural resource survey, no archaeological sites or historic properties listed in, or recommended eligible for listing in, the National Register of Historic Places will be affected by the proposed development of the property. The area is considered cleared from a cultural resources perspective, and no additional management action is recommended.

TABLE OF CONTENTS

ABSTRACT.....	i
LIST OF FIGURES	iii
LIST OF TABLES.....	iv
CHAPTER 1. INTRODUCTION	1
CHAPTER 2. ENVIRONMENTAL SETTING	5
CHAPTER 3. PREVIOUS RESEARCH AND CULTURAL OVERVIEW.....	9
CHAPTER 4. METHODS.....	33
CHAPTER 5. RECOVERED MATERIALS.....	35
CHAPTER 6. RESULTS	55
CHAPTER 7. CONCLUSIONS AND RECOMMENDATIONS.....	93
REFERENCES CITED.....	95
APPENDIX A. RECOVERED HISTORIC ARTIFACTS.....	A-1

LIST OF FIGURES

Figure 1.1. Map showing the location of Richland Parish in the state of Louisiana.	1
Figure 1.2. Topographic map showing the location of the project area and archaeological resources within the project area.	3
Figure 1.3. Aerial view showing the project area, probability zones, transects, and isolated finds within the project area.	4
Figure 3.1. Topographic map showing the location of previously documented sites and surveys within a 1.6 km (1.0 mi) radius of the project area.	13
Figure 3.2. 1935 Baskinton, Louisiana, 15-minute series USGS topographic quadrangle map showing mapped historic structures and archaeological sites in the project area.	15
Figure 3.3. 1958 Baskinton, Louisiana, 15-minute series USGS topographic quadrangle map showing mapped historic structures and archaeological sites in the project area.	16
Figure 5.1. Representative prehistoric and historic artifacts recovered from the project area	36
Figure 6.1. Overview of Site 16RI303 location, facing south.	56
Figure 6.2. Overview of Site 16RI304 location, facing north.	58
Figure 6.3. Overview of Site 16RI305 from datum, facing north.	60
Figure 6.4. Schematic plan map of Site 16RI305.....	61
Figure 6.5. Overview of Site 16RI313 from datum, facing north.	63
Figure 6.6. Schematic plan map of Site 16RI313.....	65
Figure 6.7. Overview of Site 16RI314 from datum, facing east.....	67
Figure 6.8. Schematic plan map of Site 16RI314.....	69
Figure 6.9. Overview of Site 16RI315 from datum, facing east.....	71
Figure 6.10. Schematic plan map of Site 16RI315.....	72
Figure 6.11. Overview of Site 16RI316 from datum, facing west.	74
Figure 6.12. Schematic plan map of Site 16RI316.....	75

Figure 6.13. Overview of Site 16RI317 from datum, facing east.....	77
Figure 6.14. Schematic plan map of Site 16RI317.....	79
Figure 6.15. Overview of Site 16RI318 from datum, facing north.	82
Figure 6.16. Schematic plan map of Site 16RI318.....	84
Figure 6.17. Overview of Site 16RI319 from datum, facing east.....	85
Figure 6.18. Schematic plan map of Site 16RI319.....	87
Figure 6.19. Overview of Site 16RI320 from datum, facing east.....	89
Figure 6.20. Schematic plan map of Site 16RI320.....	90

LIST OF TABLES

Table 2.1. Soil Series and Typical Pedons Found within the Project Area.....	6
Table 5.1. Historic Artifacts Recovered According to Functional Group.....	38
Table 5.2. Summary of Architecture Group Artifacts Recovered from the Project Area.....	38
Table 5.3. Summary of Domestic Group Artifacts Recovered from the Project Area.....	41
Table 5.4. Summary of Isolated Find Data.....	54
Table 6.1. 16RI305 Artifact Recovery by Provenience.....	62
Table 6.2. 16RI313 Artifact Recovery by Provenience.....	66
Table 6.3. 16RI314 Artifact Recovery by Provenience.....	68
Table 6.4. 16RI315 Artifact Recovery by Provenience.....	73
Table 6.5. 16RI316 Artifact Recovery by Provenience.....	76
Table 6.6. 16RI317 Artifact Recovery by Provenience.....	81
Table 6.7. 16RI318 Artifact Recovery by Provenience.....	83
Table 6.8. 16RI319 Artifact Recovery by Provenience.....	86
Table 6.9. 16RI320 Artifact Recovery by Provenience.....	91
Table 6.10. Isolated Find Artifact Recovery by Provenience.....	91
Table 6.11. Isolated Find Summary Data.....	92
Table A-1. Recovered Historic Artifacts.....	A-3

Chapter 1. Introduction

During the period extending from February 18 to April 17, 2015, Cultural Resource Analysts, Inc. (CRA), personnel completed a cultural resource file search and intensive field survey as part of the Louisiana Economic Development certification process for a property in Richland Parish, Louisiana (Figure 1.1). The Holly Ridge Northwest property consists of a single tract measuring approximately 115 ha (284 acres) in area and is located to the south of the community of Holly Ridge, Louisiana (Figure 1.2). This survey was conducted at the request of Denmon Engineering, Inc.



Figure 1.1. Map showing the location of Richland Parish in the state of Louisiana.

Purpose of Study

The purpose of this survey was to locate, describe, evaluate, and to make appropriate recommendations for the future treatment of any historic or prehistoric archaeological properties that may be affected by the development of the project area. All associated field notes, records, and site photographs will be curated at the Louisiana Office of Cultural Development, Division of Archaeology.

All work associated with this investigation was conducted pursuant to standards set forth by the Louisiana Office of Cultural Development, Division of Archaeology (SHPO), to comply with the National Historic Preservation Act (NHPA) of 1966, as amended (36 CFR 800). *Louisiana's*

Comprehensive Archaeological Plan (LCAP) was referred to for guidance during this investigation (Smith et al. 1983).

Project Description

The goal of the current project is to complete the Louisiana Economic Development certification process in order to make the Holly Ridge Northwest property available for potential development. The property is located to the east of the town of Rayville and west of the town of Delhi, in northeastern Richland Parish, Louisiana (Figure 1.2). The project area is bound on the south by Interstate 20 and an arbitrary boundary; on the north by an artificial pond and a railroad line adjacent to US 80; on the east by LA 183 and an arbitrary boundary; and on the west by an arbitrary boundary and a tree line adjacent to Hurricane Bayou. Measuring roughly 115 ha (284 acres) in area, the project area occupies portions of Sections 10 and 15 of Township 17N, Range 8E.

Summary of Findings

A records review using data available from the SHPO was conducted to identify any cultural resources or cultural resource investigations previously documented in the area. The review consisted of a search of online files maintained by the Louisiana Office of Cultural Development, Division of Archaeology; correspondence with the project proponent regarding recently completed work on the property; and a review of historic maps. The review indicated that five previous cultural resource investigations (22-0091, 22-1183, 22-1703, 22-4252, and a reconnaissance survey) and seven archaeological sites (16RI5, 16RI213, 16RI238, and 16RI302–16RI305) had been previously documented within a 1.6 km (1.0 mi) radius of the project area. In addition, the review of historic maps indicated that 11 structures were depicted in the project area on historic United States Geological Survey (USGS) topographic quadrangles.

Of these prior investigations, one project (the reconnaissance survey) had previously examined the current project area with a reconnaissance-level pedestrian survey. That work identified a number of field loci and documented three sites in the project area (16RI303–16RI305). As the reconnaissance survey was intended for planning purposes, no systematic subsurface investigation or site delineation was performed during that investigation.

The current field investigation consisted of a pedestrian survey of the entire project area along with the excavation of shovel tests on a 30 m (98 ft) grid in high probability zones and a 50 m (164 ft) grid in low probability zones (Figure 1.3). Over the course of the project, 519 shovel tests were excavated on 58 transects, and an additional 390 shovel tests were excavated during site delineation, for a total of 909 shovel tests excavated within the project area. Of this total, 91 shovel tests were positive for cultural material.

Eight new archaeological sites (16RI313–16RI320) and ten isolated finds were recorded as a result of the field survey, and one previously recorded site (16RI305) was relocated and delineated. In addition, the locations of the two other sites previously documented during the reconnaissance survey (16RI303 and 16RI304) were revisited and examined, but no cultural material associated with these sites was located on the surface or in the shovel tests conducted at the locations. Site 16RI313 consists of a moderate-density scatter of historic artifacts and one prehistoric artifact. The eight other archaeological sites in the project area (16RI305 and 16RI314–320) from which artifacts were recovered consist of very low- to high-density scatters of historic artifacts.

Due to a high level of disturbance and lack of integrity, all 11 of the archaeological sites (16RI303–305 and 16RI313–320) and the 10 isolated finds documented within the project area have a low research potential. As a result, these sites are recommended as not eligible for listing in the National Register of Historic

Places (NRHP), and no further work is recommended.

Based on the findings of the records review and cultural resource survey, no archaeological sites or historic properties listed in, or recommended eligible for listing in, the NRHP will be affected by the proposed development of the property. The area is considered cleared from a cultural resources perspective, and no additional management action is recommended.

Report Organization

This report is organized into seven numbered chapters. Chapter 1 provides an overview of the project and summarizes the results of the cultural resource investigation. Chapter 2 is an overview of the environmental setting of the project area. Previous investigations and the results of the background records review of the project area are in Chapter 3 along with a cultural overview of the area. Chapter 4 details the methodological approach and research design of the cultural resource investigation. Chapter 5 details the results of artifact analysis. Chapter 6 details the results of the current investigation. A report summary and recommendations regarding future work in the project area are presented in Chapter 7.

Project Personnel

Paul D. Bundy served as project Principal Investigator. Fieldwork was conducted by Benjamin Bilgri, Kirsten Atwood, Aaron Geary, Aaron Harth, Gilson Killhour, Katrina Miller, Caitlin Payne, Jason Ross, and Cecilia Szmuto. Artifact analysis was conducted by Sarah Bourget. Benjamin Bilgri and Paul Bundy conducted the archaeological file search utilizing online files maintained by the Louisiana Office of Cultural Development, Division of Archaeology and State Historic Preservation Office. Benjamin Bilgri, Jay Gray, and Paul Bundy authored the report. Final report production was completed by the CRA CAD and publications departments.

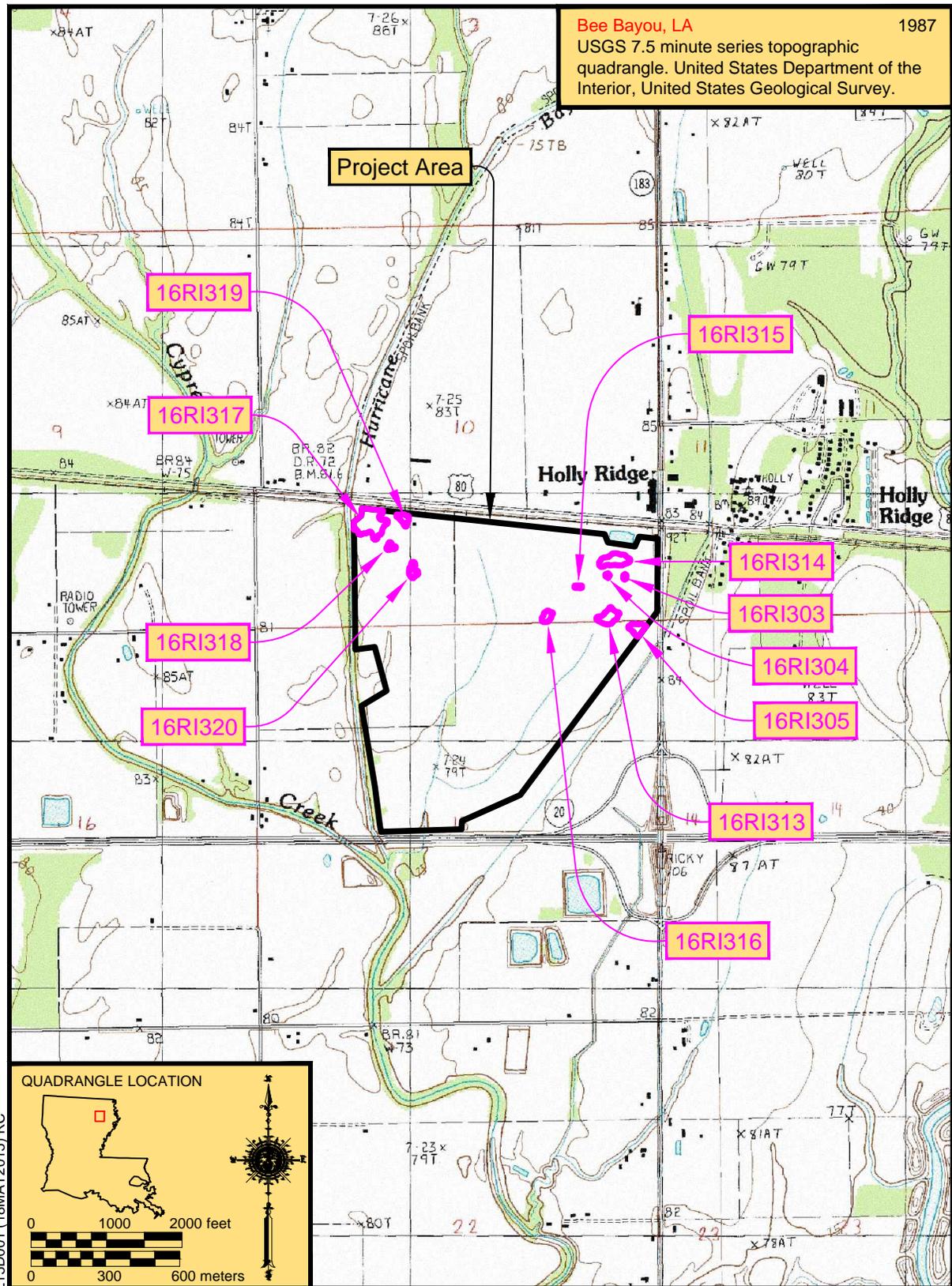


Figure 1.2. Topographic map showing the location of the project area and archaeological resources within the project area.

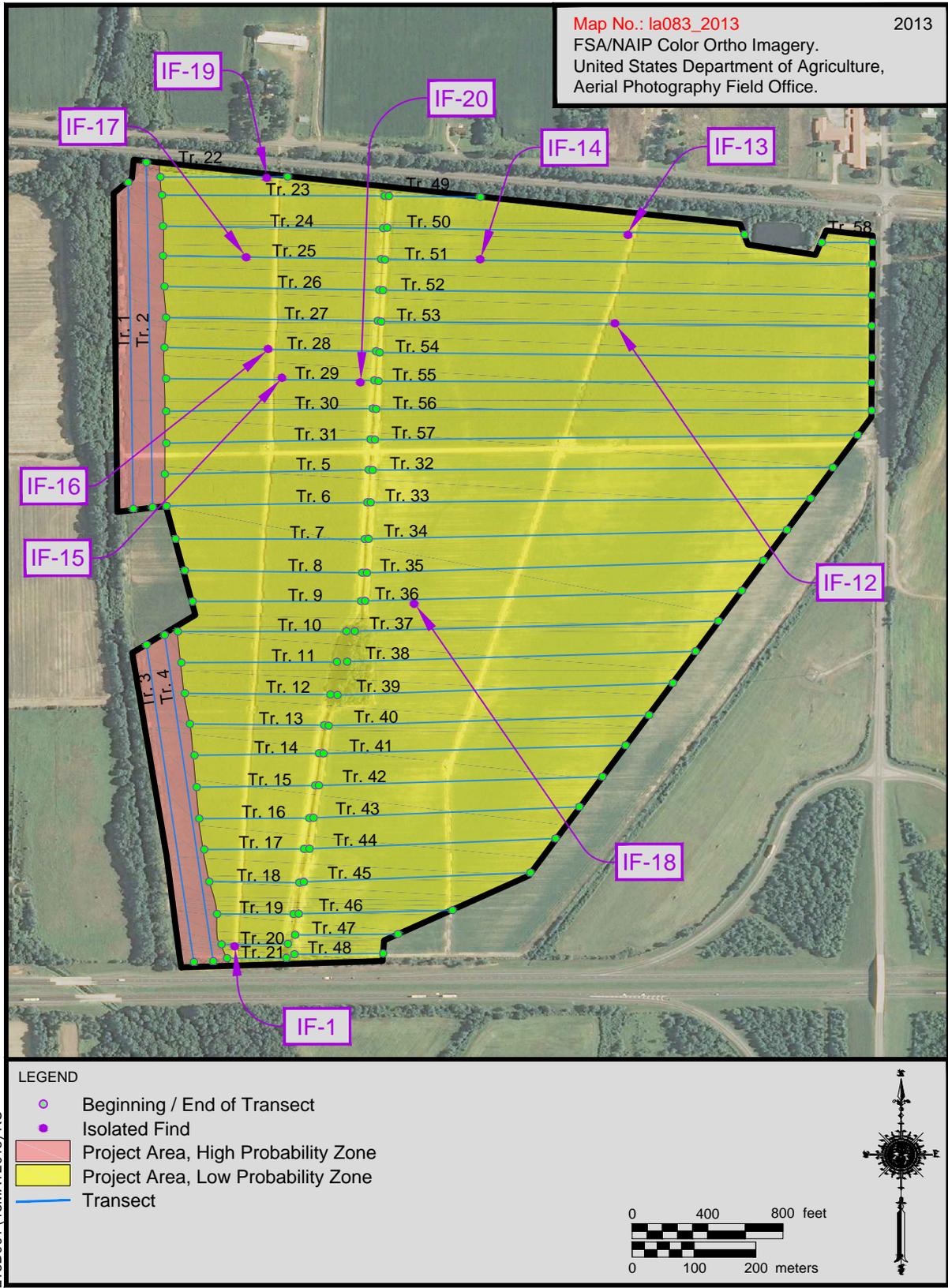


Figure 1.3. Aerial view showing the project area, probability zones, transects, and isolated finds within the project area.

Chapter 2. Environmental Setting

This section of the report provides a description of the modern environment and considers those aspects of the physical environment that may have influenced the location and methods for finding archaeological sites. The discussion of the modern environment specifically provides information regarding the physiography, geomorphology, soils, vegetation, and climate.

Physiography and Geomorphology

The project area is located in Richland Parish, which is situated in north Louisiana and within the Gulf Coastal Plain Physiographic Province. In terms of regional physiography, this area is part of the prominent Macon Ridge, within the Mississippi Alluvial Plain (Yodis and Colten 2003). Sitting high atop Pleistocene glacial outwash transported by the Mississippi River and subsequently veneered with loess, this area is 6–9 m (20–30 ft) higher in elevation and better drained than the adjacent ecoregions, supporting drier plant communities (Daigle 2006). Richland Parish is also mapped within the boundary of the Monroe Uplift (Yodis and Colten 2003). The Monroe Uplift is a large geologic structure of Tertiary age that has formed as voluminous deltaic sediment accumulation has advanced into the Gulf of Mexico and caused down-warping of the crustal floor and a corresponding uplift of the coastal plain in areas of northern Louisiana and Texas (Louisiana Geological Survey 2008).

The physiographic classification of the region using a holistic interpretation to assign areas to “ecoregions” has been advanced by Daigle et al. (2006). Pertinent characteristics in the classification of ecoregions include geology, physiography, vegetation, climate, soils, land use, wildlife, and hydrology. Within this classification system, Richland Parish is within the Mississippi Alluvial Plain ecoregion. More specifically, it is within the

Macon Ridge sub-region, with loessial Alfisols with silt or silt loam textures that contrast with the alluvial soils of the Northern Holocene Meander Belts and Arkansas/Ouachita River Holocene Meander Belts.

The project area is drained by Hurricane Bayou and other tributaries of Cypress Creek which are drained by Big Creek. Big Creek meanders in a southwesterly direction and is drained by the Boeuf River followed by the Ouachita River. The Ouachita River is a large meandering stream that flows southward into the Black River below its confluence with the Tensas River. The Black River in turn flows into the Red River, which becomes the Atchafalaya River below Turnbull Island and eventually flows into the Gulf of Mexico.

Soils

According to the Soil Survey of Richland Parish, Louisiana, and confirmed by a Custom Soil Resource Report of the project area that was prepared using online tools at the United States Department of Agriculture (USDA) website (USDA 2015), the project area contains three soil series: Deerford, Gigger, and Gilbert. These soils formed in late Pleistocene deposits and are found on level or gently sloping terraces (Allen 1993:95, 101–102). Table 2.1 presents texture and color information and typical pedons for the three soil series.

Vegetation

Native forest types in this ecoregion range from bottomlands dominated by willow oak, water oak, and swamp chestnut oak to upland hardwood forests dominated by white oak, southern red oak, and in drier areas, post oak. The modern landscape consists of cropland and pasture, with some areas of woodland and forest (Daigle et al. 2006).

Agriculture has been an important activity in Richland Parish since its founding in 1868,

Table 2.1. Soil Series and Typical Pedons Found within the Project Area.

Soil Series	Horizon	Depth (cm)	Depth (in)	Color (Munsell)	Texture
Deerford	Ap	0-15	0-6	Yellowish brown (10YR 5/4)	silt loam
	E	15-25	6-10	Pale brown (10YR 6/3) mottled with yellowish brown (10YR 5/6)	silt loam
	E/B	25-43	10-17	E Light brownish gray (10YR 6/2)/Bt Yellowish brown (10YR 5/6)	silt loam
	Btn1	43-74	17-29	Light brownish gray (10YR 6/2) to yellowish brown (10YR 5/6) with strong brown (7.5YR 5/8) mottles	silt loam
	Btn2	74-101	29-40	Light brownish gray (10YR 6/2) to yellowish brown (10YR 5/6) with pale brown (10YR 6/3) mottles	silt loam
	BCn	101-130	40-51	Yellowish brown (10YR 5/6) with pale brown (10YR 6/3) mottles	silt loam
	Cn	130-152	51-60	Dark yellowish brown (10YR 4/4)	silt loam
Gigger	Ap	0-15	0-6	Dark brown (10YR 3/3)	silt loam
	Bt1	15-38	6-15	Dark brown (7.5YR 4/4)	silt loam
	Bt2	38-61	15-24	Brown (7.5YR 4/4 and 5/4)	silt loam
	Btx1	61-86	24-34	Dark yellowish brown (10YR 4/4), brownish gray (10YR 6/2), and grayish brown (10YR 5/2) mottled with yellowish brown (10YR 5/6)	silt loam
	Btx2	86-114	34-45	Dark brown (y.5YR 4/4) with lith brownish gray (10YR 6/2)	silt loam
	Btx3	114-137	45-54	Dark brown (y.5YR 4/4) with lith brownish gray (10YR 6/2) mottled with yellowish brown (10YR 5/4)	silt loam
	2Bt	137-152	54-60	Dark brown (y.5YR 4/4) with lith brownish gray (10YR 6/2) mottled with pale brown (10YR 6/3)	silt loam
Gilbert	Ap	0-15	0-6	Dark grayish brown (10YR 4/2) mottled with dark yellowish brown (10YR 4/4)	silt loam
	Eg	15-40	6-16	Light brownish gray (10YR 6/2) mottled with yellowish brown (10YR 6/2)	silt loam
	B/E	40-58	16-23	Bt Grayish brown (10YR 5/2)/E Light brownish gray (10YR 6/2) mottled with strong brown (7.5YR 5/6)	silty clay loam/silt loam
	Btg1	58-99	23-39	Grayish brown (10YR 5/2) mottled with brown (10YR 4/3)	silty clay loam
	Btg2	99-111	39-44	Grayish brown (10YR 5/2) mottled with light yellowish brown (10YR 6/4) with light brownish gray (10YR 6/2)	silty clay loam
	Btng	111-152	44-60	Grayish brown (2.5Y 5/2) mottled with yellowish brown (10YR 5/6)	silty clay loam

with the name of the parish referring to the fertility of the soil of an area which was known for its “rich land” (Allen 1993). Initially, the Boeuf River provided access to the interior of the parish for a thriving steamboat trade. In early 1836 an east–west railroad was chartered, and in 1861 the first train rolled through the parish. This was followed by an era of cotton production in the 1880s, with areas near the railroad cleared and cultivated in cotton. Agriculture remains the dominant land use in the parish in the modern era, with cotton and soybeans serving as the main crops. According to the Richland Parish Office of the Agricultural Stabilization and Conservation Service, only about 13,355 ha (33,000 acres) of woodland remained in the parish in 1987, compared with 101,544 ha (250,921 acres) of cropland (Allen 1993).

Modern Climate

Richland Parish is within a subtropical zone with warm summers and mild winters. Based on data collected between 1951 and

1973 at Bastrop, the average annual temperature is about 19 degrees C (66 degrees F), with an average daily maximum temperature of 25 degrees C (77 degrees F) and an average daily minimum temperature of 12 degrees C (54 degrees F). However, considerable variation from these averages has been seen, with a record maximum daily temperature of 41 degrees C (105 degrees F) and a record minimum daily temperature of –11 degrees C (12 degrees F) having been recorded (Allen 1993:134).

The average annual precipitation is approximately 127 cm (50 in). The parish averages 1.5 cm (0.6 in) of seasonal snowfall most years, with the most snow occurring in February. Thunderstorms occur approximately 60 days each year (Allen 1993:134).

Description of the Project Area

The project area is an irregular polygon approximately 115 ha (284 acres) in area, located roughly 11.4 km (7.1 mi) east of the town of Rayville and 13.3 km (8.3 mi) west of the town of Delhi, Louisiana. Occupying portions of Sections 10 and 15 of Township 17N, Range 8E, the project area is bound on the south by Interstate 20 and an arbitrary boundary; on the north by an artificial pond and a railroad line adjacent to US 80; on the east by LA 183 and an arbitrary boundary; and on the west by an arbitrary boundary and a tree line adjacent to Hurricane Bayou (see Figures 1.2 and 1.3). The survey area measures a maximum of roughly 1.3 km (0.8 mi) from north to south and 1.2 km (0.7 mi) from east to west.

The vast majority of the project area is covered by agricultural fields. These were entirely fallow at the time of transecting, but by the time delineation was completed on April 17, 2015, approximately the northeast quarter of the project area had been cultivated with corn that had grown to 10–20 cm (4–8 in) in height. The ground surface is virtually level and gently undulating, but all of the agricultural fields had been previously plowed and were covered by east–west trending ridges approximately 1 m (3 ft) in width and 10–20 cm (4–8 in) in height at the time of the survey. Tree lines at the edges of several of the agricultural fields form portions of the project area's southern, western, and northern boundaries. Where present, these tree lines generally follow the edge of the project area quite closely, but are slightly uneven and occasionally lie several meters inside or outside the actual boundary.

Several unpaved roads traverse the agricultural fields, and one drainage ditch (confining an intermittent unnamed tributary of Cypress Creek) traverses the entire project area from north to south just west of the survey area's centerline. An isolated stand of mixed deciduous secondary forest measuring roughly 140 m (459 ft) north–south and 65 m

(213 ft) east–west is located on the east side of the drainage ditch in the south central portion of the project area. Aside from the drainage ditch, roads, and small segments of the aforementioned tree lines, this isolated stand of forest is the only portion of the project area not covered by agricultural fields.

Three modern standing structures are located in the project area. These structures are nearly identical, with each consisting of a small 3-x-2 m (10-x-7 ft) open-sided corrugated metal shelter covering a generator connected to an irrigation pump. These structures are not depicted on any of the available USGS topographic quadrangles, and are absent from Google Earth aerial photos taken as late as 2007. They first appear in aerial imagery from 2009, clearly indicating that they are modern additions to the project area.

Chapter 3. Previous Research and Cultural Overview

On February 18, 2015, a search of records maintained by the Louisiana Office of Cultural Development, Division of Archaeology, was conducted to: 1) determine if the project area had been previously surveyed for cultural resources; 2) identify any previously recorded archaeological sites or structures that were situated within the project area; 3) provide information concerning what cultural resources could be expected within the project area; and 4) provide a context for making recommendations for any cultural resources located within the project area. The examination of Louisiana Office of Cultural Development, Division of Archaeology data consisted of a review of professional survey reports and records of archaeological sites for an area encompassing a 1.6 km (1.0 mi) radius around the project area. The review of professional survey reports and archaeological site data in the area can provide basic information on the types of archaeological resources that are likely to occur within a project area and the landforms that are most likely to contain these resources. In addition to examining the records of previous sites and surveys, CRA also corresponded with the project proponent regarding recently completed work on the property and conducted a review of available historic maps to identify any mapped historic structures in the vicinity of the project area and to aid in locating potential historic sites. The results of the records review are discussed below.

Previously Documented Cultural Resource Surveys

Five cultural resource investigations (22-0091, 22-1183, 22-1703, 22-4252, and a reconnaissance survey) and seven archaeological sites (16RI5, 16RI213, 16RI238, and 16RI302–16RI305) have been previously documented within a 1.6 km (1.0 mi) radius of the project area. Details of each of these investigations are presented below in chronological order by the year of publication.

Following the discussion of the cultural resource investigations, the single site not associated with the documented previous work (16RI213) is briefly discussed. Figure 3.1 shows the location of the previously documented cultural resource surveys and sites, labeled by report number or site number.

SHPO Report 22-0091 (Price and Heartfield 1977)

This project was a cultural resource reconnaissance of a portion of Big and Big Colewa Creeks completed by the Research Institute of the College of Pure and Applied Sciences at Northeast Louisiana University for the USACE, Vicksburg District, with the report of findings published in 1977. This project was an intensive literature search, and although no intensive on-the-ground archaeological survey was conducted, the survey area was briefly examined to confirm that the research yielded results consistent with the area. Their work indicated the lack of field surveys may account for the low density of sites in Richland Parish that they observed, and that there was a good likelihood of prehistoric sites in the area given the early age of sediments. They further suggested ridges in areas of ridge and swale topography located adjacent to stream margins would be likely to contain prehistoric sites in their study area. They found it unlikely that significant historic remains would be found in their area, but anticipated scattered home sites were possible. The 1977 survey area approaches no closer than approximately 350 m (1,148 ft) from the current project area.

SHPO Report 22-1183 (Espenshade and Brockington 1987)

SHPO Report 22-1183 addresses the archaeological survey and testing of 50 km (31 mi) of a proposed pipeline in Ouachita, Morehouse, and Richland Parishes, Louisiana.

The work was completed in 1987 by Brockington and Associates for ANR Pipeline Company. This work identified 16 sites, recommended NRHP evaluations for 7 of the identified sites, and ultimately recommended 2 of the sites for NRHP nomination. One of the sites investigated by the work, Site 16RI5, is located within a 1.6 km (1.0 mi) radius of the current project area. Site 16RI5 was recorded as a severely disturbed twentieth-century house site. No further work was recommended, and the site was recommended not eligible for the NRHP.

SHPO Report 22-1703 (Saunders 1991)

The Regional Archaeology Program of the Department of Geosciences at Northeast Louisiana University sponsored and funded by the Louisiana Department of Culture, Recreation and Tourism, Office of Cultural Development, Division of Archaeology and Northeast Louisiana University, conducted multiple site visits in Caldwell, Franklin, La Salle, Lincoln, Ouachita, Richland, and Union Parishes, Louisiana, in 1990 and 1991. The objective of this program was to record or update the status of 75 prehistoric and historic archaeological sites in Management Unit 2 and disseminate information about Louisiana archaeology to the public. One of the 75 sites investigated during the project (16RI238) is located within a 1.6 km (1.0 mi) radius of the current project area.

Watson's Cemetery (16RI238) was recorded by Joe Saunders in June of 1991 and described as a cemetery and historic scatter from which one Evans preform and a notably diverse range of ceramics were recovered, though the investigation was limited to a surface survey. The research potential was listed as low with oral history as the recommended approach to further work.

SHPO Report 22-4252 (Cochran 2013)

SHPO Report 22-4252 documents a negative finding phase I cultural resources survey of 32 pole locations along Entergy's

proposed Oakridge to Dunn Transmission right-of-way in Morehouse and Richland Parishes, Louisiana. The work was conducted in March of 2013 by Horizon Environmental Services, Inc., with the USACE serving as the lead federal agency. No cultural resources were recovered from the 149 shovel tests excavated for this project.

Reconnaissance Walkover

The current project area was previously examined by a reconnaissance walkover survey in 2014 for the purposes of planning and gathering information pertaining to the current project. Details of the walkover survey were conveyed to CRA by the client, Denmon Engineering, Inc. The work was completed by R. Christopher Goodwin and Associates, Inc., in 2014. The reconnaissance walkover consisted of a desktop survey, windshield survey, and preliminary walkover of the proposed project area in Richland Parish, Louisiana. This work resulted in limited documentation of a number of loci and four sites (16RI302–16RI305). All of these resources were revisited and fully documented during the current investigation.

Site 16RI302 is a historic artifact scatter on the east side of LA 183, just outside the current project area to the east. However, this site is located in the Holly Ridge Northeast project area that was also surveyed by CRA and is documented in a separate report. Sites 16RI303–16RI305 are all historic artifact scatters located in the current project area, and are discussed in detail in Chapter 6.

Previously Recorded Archaeological Sites

Six of the seven previously recorded archaeological sites within a 1.6 km (1.0 mi) radius of the project area are discussed in connection with their associated surveys in the preceding section. The seventh site (16RI213) is not documented in a cultural resource survey report and is discussed below.

McManus Mound (16RI213) was originally recorded by John Stubbs and

Caroline Quillian Stubbs in August of 1984. It is described as a mound site containing an artifact scatter and midden deposits. Prehistoric ceramic sherds, bifaces, projectile points, ground stone artifacts and faunal bones were collected from the site at the time of the initial visit. The presumed function and cultural affiliation of the site are in question, but in the data presented a burial mound or village is suggested, perhaps dating from the Troyville or Late Coles Creek periods. According to the site form on file with the Division of Archaeology, Site 16RI213 was considered to have good research potential. While the site is located well outside of the current project area and was not revisited during the present survey, it is indicative of the types of sites that may be in the area.

Map Data

In addition to the file search, a review of available historic maps was conducted to help identify any historic structures that may be located within the project area. The following maps were reviewed:

1935 Baskinton, Louisiana, USGS 15-minute series topographic quadrangle map (USGS 1935);

1958 Baskinton, Louisiana, USGS 15-minute series topographic quadrangle map (USGS 1958); and

1987 Bee Bayou, Louisiana, USGS 7.5-minute series topographic quadrangle map (USGS 1987).

A total of 11 unique structures are mapped in the current project area on the available historic maps. On the 1935 Baskinton quadrangle, two structures are depicted just inside the northeast boundary of the project area (Figure 3.2). The southernmost of these structures is likely correlated with Site 16RI305, which was recorded in the same location during the 2014 reconnaissance survey and relocated during the current project. Additionally, an abandoned rail or tram line is depicted crossing the southwestern portion of the project area from north to south on the 1935 quadrangle (USGS 1935). This rail or tram line is not depicted on either of the

later topographic quadrangles, and no evidence of it was observed during the 2015 survey.

On the 1958 Baskinton quadrangle, a total of 11 structures are depicted in the project area. Seven of these structures are depicted alongside a road extending into the project area from LA 183 to the east (Figure 3.3). Of the other four structures, one is located in the northeast corner and three are depicted in the northwest corner of the project area (USGS 1958). The two structures depicted in the survey area on the 1935 map are still present on the 1958 quadrangle. Five of the sites recorded in the project area during the current survey are in the same location as structures on the 1958 map, and are likely correlated with these structures. These include Site 16RI305 (one structure), Site 16RI313 (one structure), Site 16RI316 (one structure), Site 16RI317 (two structures), and Site 16RI319 (one structure). All of these sites are discussed in detail in Chapter 6.

All but two of the structures depicted in the project area on the 1958 map are no longer present on the 1987 Bee Bayou quadrangle. On the 1987 map, one structure is depicted in the northeast corner of the project area (a structure is also depicted in this location on both the 1935 and 1958 maps). No evidence of this structure was observed in the project area during the current survey. The other structure depicted in the project area on the 1987 map is located near the northwest corner of the survey area (USGS 1987). Though it is also present on the 1958 map, no architectural remains of this structure were observed during the current project. However, Site 16RI319 was recorded in its location.

By the time of the 2015 survey, none of the structures depicted in the project area on any of the reviewed topographic quadrangles were still extant.

Survey Predictions

In recent decades, a number of attempts have been made at modeling Louisiana's archaeological sites to predict site locations, and therefore aid in the cost management of

cultural resource surveys (e.g., Anderson et al. 1999; Anderson and Smith 2003; Campbell and Weed 1986; Hillman 1980; Johnson 1984a, 1984b; Johnson et al. 1986; Phillips and Willingham 1990; Servello 1983; Thomas et al. 1982; and Willingham and Phillips 1987). The factors that tend to be most commonly associated with prehistoric settlement include a close proximity to water, level ground, and in some cases, a desirable view shed. Historical draws to regions would have been the same as prehistoric, although throughout time there would have been increasing concern for the suitability of land for certain prevailing industries, such as timber production or agriculture. Considering the geomorphology, hydrology, information gleaned from historic maps, and known archaeological sites within the region, certain predictions are possible regarding the kinds of sites that might be encountered within the project area. These data are presented in the following paragraph.

The topographic situation is generally homogenous throughout the entire project area, with the ground surface being virtually level in all areas. The hydrological situation is slightly more varied; an intermittent tributary of Cypress Creek is confined by a drainage ditch running from north to south through the center of the project area, while Hurricane Bayou runs from north to south just outside the survey area's western boundary (Figure 1.2). Examination of historic maps indicated that portions of the project area, most notably the northeast and northwest quadrants, had been utilized for historic activities, at least during the twentieth century. Relatively few archaeological sites had been previously recorded in the vicinity of the project area, but this seems to be an artifact of sampling strategy and is not likely to be representative of the settlement intensity of the area, since very little cultural resource work had previously been completed in the area. These data suggested that the project area was likely to contain both prehistoric and historic sites, with a relatively high density of historic sites expected in its northern half based on historic mapped structures and a higher probability of

prehistoric sites expected in those areas within 200 m (656 ft) of Hurricane Bayou near the project area's western boundary.

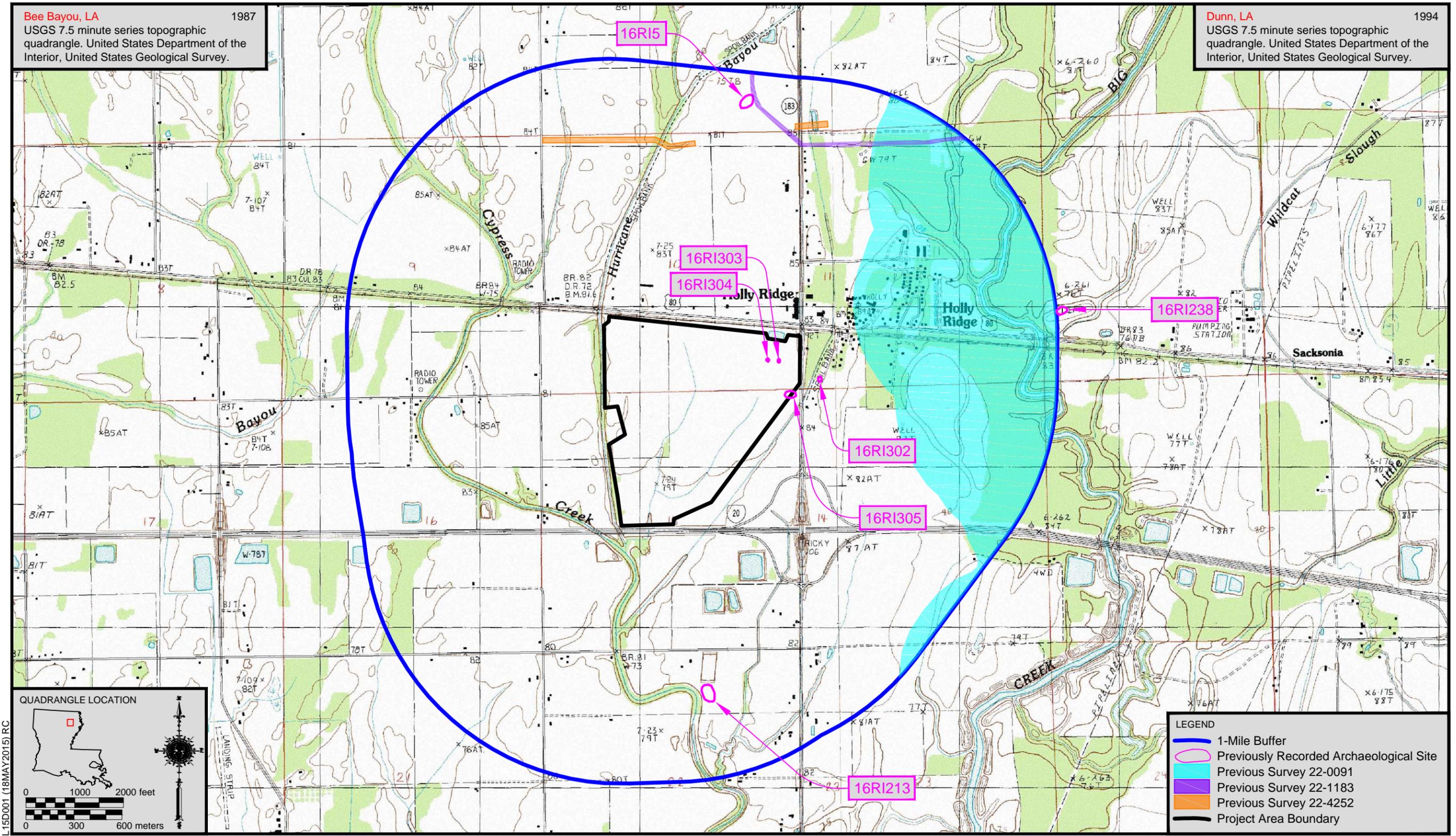


Figure 3.1. Topographic map showing the location of previously documented sites and surveys within a 1.6 km (1.0 mi) radius of the project area.

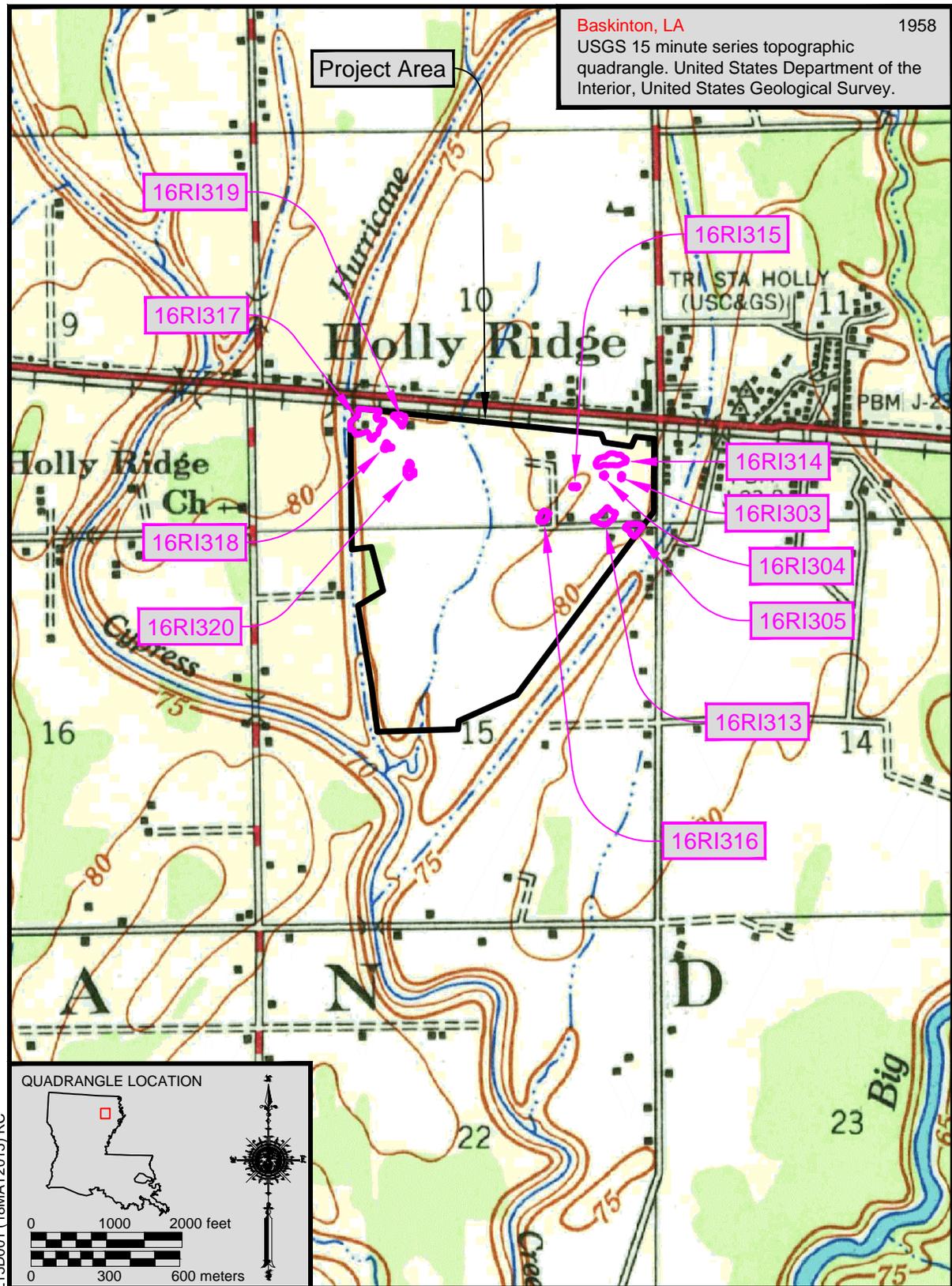


Figure 3.3. 1958 Baskinton, Louisiana, 15-minute series USGS topographic quadrangle map showing mapped historic structures and archaeological sites in the project area.

Cultural Overview

This section provides a cultural and historical overview of the project area. This information is drawn from a number of local and regional studies that are believed to be applicable to the cultural history of the uplands of north Louisiana.

Paleoindian (11,500 to 8000 B.C.)

The Paleoindian period represents the earliest manifestation of humans in the New World and is separated into a tripartite set of temporal sequences based on technological innovations presumed to correspond with cultural change. The Early Paleoindian period is presently described as the period from 11,500 to 9500 B.C., the Middle Paleoindian period is thought to have lasted from 9500 to 8800 B.C., and the Late Paleoindian period is believed to have lasted from 8800 to 8000 B.C.

Early Paleoindian

The Early Paleoindian period is based on a relatively few, recently discovered sites that are thought to predate the well-known Clovis culture that is a hallmark of the Paleoindian period. The most notable of these sites in North America are Meadowcroft Rockshelter in Pennsylvania; Cactus Hill in Virginia; and the Topper site in South Carolina (Goodyear 2006; Meltzer 2009). The existence of a pre-Clovis Early Paleoindian culture is still somewhat controversial, but is gaining acceptance in the archaeological community (see Meltzer 2009). Pre-Clovis components have also been reported from a number of sites that have not seen peer review and have not been widely accepted by the archaeological community, and some of these boast dates that are significantly earlier than most researchers accept as valid (Meltzer 2009). The earliest date that is broadly accepted for this period is approximately 11,500 B.C., though some researchers refute the evidence for a pre-Clovis occupation altogether, favoring the Clovis-first hypothesis for colonization of the New World. By definition, the pre-Clovis Early Paleoindian period ended with the

introduction of the Clovis projectile point at approximately 9500 B.C.

To date, no pre-Clovis sites have been identified in Louisiana (Anderson and Smith 2003:350). Given the scant evidence of later Paleoindian sub-periods and the generally meager evidence of Paleoindian habitation in the state in general, Early Paleoindian components would likely be difficult to find (Rees 2010a). As a result of the relatively recent acceptance of a pre-Clovis Early Paleoindian colonization of North America and the low number of sites dating to this period, little is presently known about the social organization, diet, and other cultural characteristics of these populations.

Middle Paleoindian

The Middle Paleoindian period is represented by distinctive lanceolate fluted points, including the well-known Clovis type. Paleoindian sites dating to this period in Louisiana are rare, amounting to just a few across the entire state. As a result of the poor representation of this period, little is known of the dates for Clovis in Louisiana, and much of the information regarding chronology and culture comes from other parts of the Southeast. The accepted date range for Clovis in the Southeast generally falls into the range from 9500 to 8800 B.C. (Rees 2010a).

The Middle Paleoindian period has been traditionally characterized as consisting of small, extremely mobile groups that utilized a specialized lithic tool kit designed primarily for hunting, butchering, and hide-working activities (Maggard and Stackelbeck 2008). What is known of the settlement, mobility, and diet of these groups suggests that they subsisted largely through hunting big-game species, supplemented by the acquisition and consumption of seasonally available plant resources (Anderson and Sassaman 1996). The emphasis on big game hunting has recently been criticized by Kornfeld (2007), who notes that during the development of Paleoindian subsistence models, Pleistocene megafauna “kill sites” were commonly used to identify Clovis components; therefore, other site types were underrepresented during model-building,

and the importance of other dietary resources may have been underestimated. Whether these Paleoindian groups were big game specialists or had a more generalized diet has become a topic of debate among researchers in recent years. Very little subsistence data has been secured from Middle Paleoindian sites in Louisiana to contribute to subsistence modeling.

The distribution of identified Middle Paleoindian occupations in North America has shown that major river valleys like the Mississippi, Ohio, Tennessee, and Cumberland, as well as parts of the Atlantic coastal plain into Florida, appear to have been favorable locations for Clovis populations (Anderson and Smith 2003). In Louisiana, Paleoindian occupations along the major river valleys are likely inaccessible due to massive accumulations of sediment, and many may have been destroyed through erosive alluvial processes. For example, along the Atchafalaya River, as much as 40 m (131 ft) of sediment may overlie components dating only back to 3500 B.C. (Smith et al. 1986, cited in Rees 2010b:41).

Among the most impressive Middle Paleoindian sites known in Louisiana is the John Pearce site (16CD56) along the Tertiary Uplands of northwest Louisiana in Caddo Parish. Webb et al. (1971) reported three Clovis points along with several other lanceolate points from excavations at the site. It was unclear to the researchers whether the Clovis points were contemporaneously deposited with Pelican, Meserve (or possibly Dalton or San Patrice), and other lanceolate points usually associated with the Late Paleoindian period (Webb et al. 1971, cited in Rees 2010b). The co-occurrence of Clovis with Late Paleoindian lanceolate points has also been reported at other sites in Louisiana (see Rees 2010b:49). Presently, too few sites offering temporal controls for the Paleoindian point sequence have been identified or investigated to evaluate whether these forms may have been in use contemporaneously.

Peason Ridge is a lithic quarry located in west-central Louisiana at Fort Polk and has

produced lanceolate points from an apparently undisturbed Middle Paleoindian occupation that has been intensely studied. Among other information that this site has provided, it has shown that well-preserved Clovis sites exist in upland locations in Louisiana (Rees 2010b). Since this site is a quarry locale, we would expect that it would be more easily identified archaeologically than more ephemeral site types with fewer artifacts, but we should fully expect that other well-preserved Middle Paleoindian sites exist in northwest and central Louisiana that have escaped detection thus far.

Other less intensely studied Middle Paleoindian sites have been identified throughout the state. According to research by Gagliano and Gregory, (1965) the distribution of Clovis points shows the greatest representation along the Tertiary Uplands of northwest Louisiana. Like in most areas of the Southeast, Clovis and other large lanceolate points in Louisiana have primarily been found in surface contexts. The distributions of these points may provide coarse-grained information on the distributions of Clovis culture (Rees 2010b), although greater surface visibility along eroded uplands may favor their detection in these areas, as has been suggested elsewhere (Perkinson 1971).

Late Paleoindian

The Late Paleoindian period is thought to represent a period of decreased residential mobility and population increase, based on an increasing regional diversity in projectile point types, decreased use of exotic lithic materials, and an increased number of identified sites. This sub-period coincides temporally with the Younger Dryas, a climatic event that consisted of dramatically colder temperatures and increased aridity. Projectile point types that represent the Late Paleoindian period in Louisiana include the Pelican type and several varieties of the San Patrice type, which are thought to temporally precede the Angostura, Folsom, Meserve midland, Plainview, Quad, and Scottsbluff types later in this subperiod (Rees 2010b). These types display varied stylistic qualities and in some cases occur in fairly restricted spatial distributions,

suggesting increased regionalization or isolation of cultural groups as population levels increased and group mobility decreased (Anderson and Smith 2003:353).

Research into the Late Paleoindian period in Louisiana has included the study of Peason Ridge, which contains a number of Paleoindian and Early Archaic components. Among the factors that may have made this location attractive for Middle and Late Paleoindian habitation is the availability of high quality lithic material, such as Eagle Hill chert. Eagle Hill is also one of the highest points in the immediate region, possibly making it a valued lookout point. It is also at a convenient location between the Sabine, Calcasieu, and Red Rivers, providing an adequate rendezvous point for peoples from each drainage area. Based on the extensive use of Eagle Hill during the Paleoindian and Early Archaic periods, Anderson and Smith (2003:363–364) have suggested that this area may represent an aggregation locus utilized by bands occupying the nearby drainages for critical social and biological functions (*sensu* Anderson and Hanson 1988).

The transition from lanceolate points during the early part of the Late Paleoindian period to side-notched forms by the end of this subperiod may relate to technological shifts such as the introduction of the atlatl (Jennings 2008). The shift in hafting technology, from basally-thinned to side-notched, along with inferred changes in patterns of settlement and mobility, have suggested to some researchers a greater cultural continuity with the Early Archaic period than with the preceding Paleoindian subperiods (Anderson and Smith 2003).

Archaic (8000 to 1250 B.C.)

The Archaic period represents an era of human adaptation to the warmer conditions brought on at the onset of the Holocene epoch in North America. This period is subdivided into the Early Archaic (8000–6000 B.C.), Middle Archaic (6000–2000 B.C.), and Late Archaic (2000–1200 B.C.). These subperiods are defined by changes in hafted bifaces and

other non-perishable technology, which are believed to relate to changes in resource exploitation, ultimately corresponding with transitions in settlement and mobility strategies and social organization.

Early Archaic

The Early Archaic period spans from the end of the Younger Dryas to the beginning of the Hypsithermal episode, which was a warming climatic trend in the Middle Holocene. Projectile point styles associated with this period in the greater Southeast follow a sequence from side-notched to corner-notched and finally bifurcated forms during the end of the Early Archaic period. In northern Louisiana, San Patrice, vars. Keithville, Dixon and Leaf River and Big Sandy points represent the side-notched tradition. Corner-notched varieties include the Palmer and Kirk types, which are found throughout the Southeast, as well as Angostura and Scottsbluff points found on the Great Plains. Bifurcated points, which are found during the terminal Early Archaic period in the South Appalachian area, have not been reported from sites in Louisiana. These forms show a decreasing frequency gradient away from the mountains of North Carolina, where they were first identified (Claggett and Cable 1982:434), and seem to have a much narrower distribution than the preceding side- and corner-notched types. Sinner points may have originated during the terminal Early Archaic period in Louisiana (Anderson and Smith 2003).

The Early Archaic period also heralded new innovations in stone tool technology, as ground and pecked implements first make their appearance on sites dating to this period. Grinding stones that were presumably used for processing vegetal food items include mortars and pestles, and these may indicate increasing use of flora for subsistence during this period.

Middle Archaic

The Middle Archaic period is believed to represent human adaptation to the Hypsithermal climatic episode. During this episode, a warmer and dryer climate resulted

in decreased water levels and is believed to have led to increased habitation near permanent bodies of water. This period marks the beginnings of earthen architecture in northeast Louisiana, which is the earliest known monumental architecture in North America. Research conducted at Watson Brake and other Middle Archaic mound complexes in northeast Louisiana has provided a baseline for identifying and understanding Middle Archaic components elsewhere, although these patterns have not been well established in northwest Louisiana. Mound construction during this period may generally be regarded as signaling greater population densities and increased sedentism, and there appears to have been increased interaction among Middle Archaic groups compared with earlier periods. Increased competition and warfare among groups was likely a response to more restricted access to resources as a result of population increase (Anderson and Smith 2003).

Hafted bifaces used during the Middle Archaic in Louisiana include Evans, Sinner, Bulverde, and Yarbrough types. Evans type hafted bifaces are the primary diagnostic of this period and date from around 2500 B.C. into the Late Archaic period. Evans points are corner-notched forms that are distinguished by a set of notches along the blade (Webb 2000; Anderson and Smith 2003). While they are often associated with the Middle Archaic mounds of northeast Louisiana, Evans point distribution stretches from the west side of the Mississippi River as far south as the Catahoula Lake area in central Louisiana and into southern Arkansas and northeast Texas (Anderson and Smith 2003; Saunders 2010), and similar notched blade Tangipahoa points are found to the east in Mississippi (McGahey 2000). Sinner points are generally similar in form to Evans, but Webb (2000) describes them as typically having two or more notches on the edges of the body and being smaller and more poorly made than Evans points (Webb 2000). Sinner points are common in northwest Louisiana along Red Chute Bayou and Lake Bistineau, as well as on Caddo and Cross Lakes (Webb 2000). The point is

diagnostic of a poorly-defined Kisatchie phase, which has been proposed for the terminal Early Archaic and early Middle Archaic periods (approximately 7500–6600 B.C.) at Fort Polk in western Louisiana (Thomas et al. 1997). Bulverde points date to the late Middle Archaic to early Late Archaic periods in Texas, from approximately 3800 to 3150 B.C. (Turner and Hester 1993), and typically have a more western distribution than the Evans point type. Evans and Bulverde points have been found in context with one another where their range overlaps in southern Arkansas and northern Louisiana (Anderson and Smith 2003). Bulverde points have a square stem with squared to deeply barbed shoulders and excurvate blade margins (Suhm and Krieger 1954). Yarbrough points are similar in form to Bulverde points, but have a narrower blade and shoulders that are not barbed and appear inversely tapered in some instances (Suhm and Krieger 1954). In eastern Texas, Yarbrough points are common and denote a Middle or Late Archaic temporal component (Turner and Hester 1993).

Other point styles, for which formal type designations have not been assigned, were also in use during the Middle Archaic period in northern Louisiana, as has been demonstrated during excavations at the Conly site, from which radiocarbon dates of 6050 to 5550 B.C. were secured (Girard 2000). This site also yielded Johnson points, which are diagnostic of the Tom's Brook phase in southwest Arkansas (Schambach 1998).

Late Archaic

The Late Archaic is believed to mark a period of increased regional population densities as environmental conditions began to display more modern characteristics. Based on the increased occurrence of plant-processing artifacts on sites dating to this period, such as sandstone manos and metates, it is inferred that there was an increase in plant processing, although it was still probably not extensive (Anderson and Smith 2003). As just previously noted, Bulverde, Evans, and Yarbrough point styles persisted into the Late Archaic, and they have been found in context

with Williams points in northwest Louisiana (Kelley et al. 1988). Williams points are large, leaf-shaped dart points with pronounced barbed shoulders and expanded bases (Webb 2000).

In northeast Louisiana, large-scale mound construction, long distance trade, and warfare increased during this period. The well-known Poverty Point site in northeast Louisiana represents a pinnacle of earthwork construction during the Late Archaic period, between 1730 and 1250 B.C. (Gibson 2010). From sites in the Poverty Point complex, archaeologists have recovered zoomorphic and otherwise intricate stone beads and pendants, carved steatite vessels, and a myriad of shapes and styles of baked clay objects that were presumably used as boiling stones in a stone-poor region. A number of microlithic tools found on these sites are suggestive of the beginnings of a lapidary industry, although Gibson (2010:92–93) doubts there existed any craft specialization based on the variation seen in stone owl beads manufactured during this period. Exotic materials constitute a significant portion of the material culture at Poverty Point sites, with materials originating as far away as the Upper Mississippi region, the Great Lakes, the southern Appalachian Mountains, and the Rocky Mountains (Gibson 2010:81). Increased social complexity in the Poverty Point complex and surrounding region during this period has prompted some researchers to consider the Late Archaic period to have ended earlier in the Lower Mississippi Valley than elsewhere (Earth Tech, Inc. 2002), although we have elected to include it in the Late Archaic period in our discussion for simplification.

On sites in the Great Bend region, including northwest Louisiana, trade items thought to represent sumptuary goods associated with the Poverty Point culture have been found, although more utilitarian items such as baked clay objects seem to be absent (Earth Tech, Inc. 2002). Projectile point types that are associated with Poverty Point culture in Louisiana include the Motley, Hale, Delhi, Epps, Macon, and Pontchartrain types (Webb 2000), although the Gary type predominates at

the Poverty Point site (Gibson 2010). These are all large, stemmed dart points with long blades that exhibit parallel or slightly divergent blade margins. Gary points are not unique to the Late Archaic period but have a broad temporal range, and they are distinguished by their contracting stem and pointed or rounded base (Webb 2000). Delhi, Pontchartrain, and Macon types all exhibit square stems, but they differ in dimensions and quality of manufacture; Delhi points usually have barbed shoulders, whereas Macon points are unbarbed, and Pontchartrain points are usually serrated (Webb 2000). Like Gary points, Pontchartrain appear to have a long temporal span. Motley and Epps types are characterized by expanded bases, but Motley points tend to have barbed shoulders, whereas Epps points have squared shoulders (Webb 2000). Hale points are the largest of the Late Archaic dart points in the region, suggesting they may have been used more as knives than projectiles, and they typically have squared or slightly barbed shoulders (Webb 2000).

In northern Louisiana, no Late Archaic phases have been identified to date. The Birds Creek and Leander phases have been identified at Fort Polk in western Louisiana. The Leander phase is identified by the presence of Motley, Epps, Delhi, and Calcasieu point types and is strongly associated with the Poverty Point Culture. The Birds Creek phase is identified by the presence of Epps and Ensor point types, both of which are common at Fort Polk (Anderson and Smith 2003). In addition, baked clay objects have been found on both Birds Creek and Leander phase sites and are indistinguishable from baked clay objects found at the Poverty Point site (Anderson and Smith 2003). Fiber-tempered pottery also made its appearance during this time period and has been found at sites throughout Louisiana.

Woodland (1250 B.C. to A.D. 900)

Like the preceding periods, the Woodland period is divided into Early (1250 B.C.–A.D. 1), Middle (A.D. 1–400), and Late (A.D. 400–900) subperiods in the Southeast. The

beginning of the Woodland period is arbitrarily set at the widespread adoption of ceramic vessels. In addition to changes to projectile point morphology, the shifts in material culture that archaeologists use to denote Woodland subperiods include stylistic changes to pottery. Other innovations that are thought to have affected subsistence practices during the Woodland period include broad implementation of the bow and arrow and the adoption of horticulture (Anderson and Smith 2003).

Early Woodland/Tchefuncte

The Early Woodland period, referred to in the lower Mississippi Alluvial Valley as the Tchula period, began at approximately 1250 B.C. The best known Early Woodland culture in Louisiana is Tchefuncte, which is believed to have existed between 800 B.C. and A.D. 1 (Hays and Weinstein 2010). During the first several centuries of the Early Woodland period, fluctuating climatic conditions resulted in cooler temperatures, and two short-term cold events are likely to have had a pronounced effect on native populations in the region. The widespread adoption of pottery manufacture signals the onset of the Early Woodland period, and the end of Poverty Point culture in Louisiana also corresponds to this subperiod.

Although information pertaining to Early Woodland settlement is limited, based on the presence of well-defined structures, large subterranean storage pits, and dense occupational middens at some sites, Early Woodland groups are believed to have experienced increased sedentism, with some groups inhabiting specific settlement locations year-round. Though this may be true at some locations, Anderson and Mainfort (2002) indicate that sites in the Central Mississippi Valley are typically small, having a few structures and probably no more than 50–60 people. With group mobility still a prominent characteristic of many indigenous groups, social organization appears to have been based on unranked or minimally ranked lineages and clans (Anderson and Mainfort 2002:45).

The Early Woodland period in the Southeast saw the cultivation of native plant species like goosefoot, sumpweed, sunflower, knotweed, squash/gourd, and maygrass, though the level of dependence upon such crops is unknown. The use of cultigens during this period likely varied regionally (Anderson and Mainfort 2002).

Tchefuncte culture appears to have been centered on eastern Louisiana and along the Gulf Coast, where small groups occupied sedentary and autonomous hamlets along slow-moving streams (Hays and Weinstein 2010). In the northwestern and central portions of Louisiana, Tchefuncte period sites are rare. The most prominent assemblages in this area include a collection of eight sherds from a site along Peason Ridge at Fort Polk in west-central Louisiana, illustrating the scarcity of this cultural material in the region (Anderson and Smith 2003). A few possible Tchefuncte sites have been reported from Lake Rodemacher also in central Louisiana (House 1972) and in a cluster around southern Natchitoches Parish and northern Rapides Parish (Gregory and Curry 1978). These latter sites have been assigned to a Lena phase and have produced Lake Borgne Incised and Orleans Punctate pottery, with Pontchartrain hafted bifaces and tubular clay pipes (Gregory and Curry 1978).

Middle Woodland/ Marksville and Troyville

Throughout much of the Eastern Woodlands during the Middle Woodland period, Hopewell culture thrived and culminated in the construction of massive earthen ceremonial centers and the implementation of an extensive trade network throughout much of the South Atlantic Slope and the Southeast. The Middle Woodland period in Louisiana is associated with the Marksville culture, which existed from circa A.D. 1 to 400 (McGimsey 2010), and the Troyville culture, which existed from circa A.D. 300 to 900 (Lee 2010).

Marksville culture has traditionally been viewed as a regional variation of the Hopewell

culture due to the presence of large earthen mounds, an elaborate mortuary complex, and intricately designed ceramics with similar iconographic themes to Hopewell ceramics at the earliest Marksville sites discovered and studied. Although contemporaneous with Hopewell, many of the defining traits of this culture are not universally present at Marksville sites in Louisiana, and most sites are relatively small. For example, the evidence of widespread, long-distance trade is not found on Marksville sites, or is at least not as extensive as on Hopewell sites. Only relatively few examples of non-local materials, such as galena or copper have been found in burial contexts at Marksville sites, although abundant extra-local chert seems to have been acquired through trade. The archaeological patterns found among Marksville sites and cemeteries also do not indicate that a hierarchical social organization was embedded in the culture, but rather that it was largely egalitarian (McGimsey 2010).

Troyville culture is usually associated with the Baytown period (A.D.400–700) (Lee 2010). Although it has been described as a period of cultural decline between the earlier Marksville and later Coles Creek cultures, the Baytown period is presently thought to represent a time that increased regional differentiation set the stage for the later, more complex societies (Lee 2010). Cultural continuities with earlier cultures include some evidence of long-distance trade and mound construction for public ceremonies and interment, while innovations during this period likely include the introduction of the bow and arrow sometime around A.D. 600–700. Like the preceding Marksville culture, there does not appear to be a great deal of status differentiation among individuals at Troyville sites (Lee 2010).

Subsistence patterns compiled using data from Middle Woodland sites in Louisiana indicate that there is little change from the patterns of the preceding Tchefuncte culture. An emphasis on gathering and hunting of locally available flora and fauna is inferred from the dietary remains at these sites, and there is little indication that Marksville or

Troyville populations participated in the cultivation of domesticated seed plants used by Hopewell populations during this period (Lee 2010; McGimsey 2010).

Marksville sites are identified by the presence of incised and zoned rocker-stamped Marksville ceramics (McGimsey 2010), while the later Baytown/Troyville ceramics are recognized by Baytown Plain and newly-introduced bi-chrome and polychrome painted ceramics (Lee 2010). Hafted bifaces are not generally considered diagnostic for the Middle Woodland period due to the long temporal range of points found in contexts dating to this period.

Marksville sites at Fort Polk in west-central Louisiana have been assigned to the Whiskey Chitto phase (Campbell et al. 1987). These sites are typically identified by the presence of Marksville stamped and Marksville incised pottery types, which exhibit rim forms and motifs like those of the Marksville in the Lower Mississippi Valley. Grog temper appears to be predominant in these specimens, though there are hints of bone and/or sandy paste in some. Dooley Branch, Ellis, Gary, Kent, the Williams cluster, and similar points occur at Whiskey Chitto sites, though as mentioned before they are not diagnostic of this specific time period due to their temporal range (Anderson and Smith 2003). There are no complex ceremonial centers dating to this period known to exist in the vicinity of the project area, but several Marksville sites have been recorded to the east and southeast of Alexandria (Wessel et al. 1993). Marksville ceramics were also present at the Coral Snake Mound along the Sabine River to the west, Bellevue Mound in northwest Louisiana, and the Fredericks site near Natchitoches (Anderson and Smith 2003). Other cultures that potentially influenced developments in northern Louisiana during the Middle Woodland include the Mossy Grove culture from eastern Texas and the Fourche Maline in northwest Louisiana and beyond.

No phases for Troyville culture have been identified in northwestern or central

Louisiana, and these components seem to be rare in general. The rarity of Mulberry Creek Cord Marked, which is the primary defining type for this period in the region, has been noted throughout western Louisiana (Anderson and Smith 2003). Several sites dating to the Baytown period have been recorded to the east of Alexandria near Catahoula Lake and in the Black River and Little River watersheds (Wessel et al. 1993).

Late Woodland/Coles Creek

The Late Woodland subperiod (circa A.D. 400–900) experienced a slight fluctuation in climate, with temperatures mildly dropping circa A.D. 400–800, but warming again to a point beneficial for agriculture in the east (Anderson and Smith 2003). At this time, a continuation of the Troyville culture is believed to have occurred along the Red River, with the emergence of the Coles Creek culture at approximately A.D. 700 (Roe and Schilling 2010). In southwest Arkansas and southeast Oklahoma, a similar cultural expression that developed coterminous with Coles Creek is known as Fourche Maline, while in east Texas it has been termed pre-Caddoan.

The Coles Creek period is believed to represent an important shift toward hierarchical social organization from the egalitarian order of earlier periods. This is reflected in the changing role of earthen architecture from primarily serving a mortuary function to providing a platform for structures and ceremonies for community functions or possibly related to a chiefly elite. Although formalization of a mound and plaza ceremonial center appears to have occurred at Coles Creek sites, the differentiation of hierarchical groups is difficult to see through mortuary and other archaeological remains (Roe and Schilling 2010).

Like the preceding Marksville and Troyville cultures, Coles Creek and Fourche Maline populations seem to have relied primarily upon local wild plants and animals for subsistence, although domesticated versions of native grasses including maygrass, chenopod, and knotweed were identified at

some Coles Creek sites. Since other sites from which subsistence data have been obtained lack evidence of domesticated cultigens, the use of cultigens is not believed to have been widespread. At the end of the Coles Creek period, the use of starchy seeds seems to have increased, with maize playing a minor role (Roe and Schilling 2010).

A variety of Late Woodland ceramics comprise Coles Creek assemblages and consist primarily of grog-tempered or grog-and-sand-tempered Chevalier Stamped, Coles Creek Incised, Evansville Punctuated, French Fork Incised, Mazique Incised, and Pontchartrain Check Stamped ceramics. Williams Plain is a generic ceramic type similar to Baytown Plain that is frequently recovered from Fourche Maline and Coles Creek sites in the Great Bend region of the Red River (Schambach 1982, cited in Earth Tech, Inc. 2002). Use of the bow and arrow flourished during the Late Woodland, reflected in the abundance of small arrow point types dating to this period. Alba, Catahoula, Hayes, Friley, Scallorn, and possibly Colbert points are associated with the Coles Creek and Caddo cultures (Anderson and Smith 2003).

In northwest Louisiana, a local expression of Coles Creek culture known as Bellevue has been defined based on Bellevue and other mounds in Bossier Parish. Bellevue is a conical, flat-topped mound that is among the earliest known examples of earthen architecture in northwest Louisiana. This mound contained multiple burials and yielded ceramics similar to those of Marksville sites, but with characteristic bone tempering associated with the later Caddo culture (Neuman 1984:217). The Bellevue and contemporary sites in northwest Louisiana are seen as showing more affinities with the Fourche Maline culture as represented in southwest Arkansas (Webb and Gregory 1978). Bellevue and other mound and non-mound sites in northwestern Louisiana have primarily yielded plain ceramics and a few Marksville-Issaquena-Troyville types along with Gary and Ellis points (Webb 1982).

Late Prehistoric (A.D. 900 to 1700)

The end of the Late Woodland period between A.D. 900 and 1100 marked the emergence of Caddo and Mississippian cultures across much of Louisiana (Anderson and Smith 2003). During the early part of this period, from A.D. 800 to 1300, a favorable climate for agriculture is thought to have prevailed, with temperatures approaching near those of the present. At circa A.D. 1300 the Little Ice Age is thought to have reversed these favorable conditions (Anderson and Smith 2003).

Caddo

Although its origins are unsettled, Caddo culture is thought to have developed along the Red River and its tributaries in areas extending into northwest Louisiana at approximately A.D. 900 (Girard 2010). Along the lower Mississippi, Arkansas, and Red River valleys, the Coles Creek and affiliated peoples had previously been the primary cultural systems. Webb saw the Caddo culture as a direct descendant of Coles Creek culture, first emerging in the Great Bend region of the Red River (Webb and McKinney 1975; Webb and Gregory 1978). Similarly, Anderson and Smith (2003:392) believe that Caddo cultures emerged directly from the preceding Coles Creek culture along the middle course of the Red River and within areas situated between the Red, Sabine, and Trinity Rivers. In contrast, Schambach (1982) has suggested that Caddo culture emerged in the Great Bend region from the Fourche Maline culture of southwest Arkansas.

In Louisiana, the Caddo culture is generally confined to the northwestern portion of the state, extending only as far south as Natchitoches. A refined ceramic tradition developed during the Caddo period, and ceramic styles have been used to divide this period into two major aspects (Gibson and Fulton) that are further divided into several foci (Alto/Alto-Gahagan, Haley, Bossier, and Belcher).

Early Caddoan ceremonial centers have been found along the Red River, namely those at Mounds Plantation, Crenshaw, and Gahagan, though monumental construction at these sites is believed to have occurred after A.D. 1000 (Anderson and Smith 2003). Alto, or Alto-Gahagan, is the earliest Caddo focus and shows a strong Coles Creek influence. A number of innovations in material culture characterize the Alto phase, including the use of carinated bowls and bottle forms with engraved and pigment-filled designs. The ceramic assemblage used to recognize this phase includes Crockett Curvilinear Incised, Pennington Punctuated-Incised, Holly Fine Engraved, Spiro Engraved, Wilkinson Punctuated, Holyknowe Ridge-Pinched, Williams Plain, and LeFlore Plain (Kelley et al. 1988).

During these initial expressions of Caddo culture, there was more extensive use of floodplains along the Red River than during preceding cultures, and large earthen mound complexes were constructed and apparently supported significant populations during ceremonial events. In addition to the mound complexes, these initial Caddoan settlements are assumed to have been similar to later ones, with small villages on tributary streams or along lakes or possibly scattered villages situated in floodplains (Anderson and Smith 2003).

A shift in mortuary customs is represented during the Alto focus by the addition of shaft burials into mounds as opposed to the pre-mound burials that characterized Coles Creek sites, and burials were more elaborately furnished (Schambach and Early 1982). Mounds Plantation (16CD12) is among the most notable Alto focus mound site investigated in northwest Louisiana and is the basis for its definition. This site contained seven mounds around a central plaza with additional mounds on the peripheries. Burial data suggest that the early Caddo culture was hierarchical, with finely constructed and decorated ceramics in the graves of apparent community leaders (Girard 2010), and mound centers in northwest Louisiana contained residential areas for these leaders who would

have held political control over outlying settlements. At one early Caddo mound site in northwest Louisiana, the Gahagan site (16RR1), burial items were manufactured from stone that originated in southwestern Illinois, showing that these early Caddo cultures may have had contact with such far away Mississippian polities as Cahokia near present-day St. Louis, Missouri (Girard 2010).

The Haley focus represents the earlier part of the Middle Caddo period in northwest Louisiana and is followed by the Bossier focus. The Haley focus is better represented in Arkansas, although northwestern Louisiana is within the peripheries of the cultural area. This focus is represented by Haley Engraved, Handy Engraved, Hickory Engraved, Haley Complicated-Incised, Pease Brushed-Incised, and Sinner Linear Punctuated ceramics. Burial customs became more elaborate than the preceding Alto focus, and temple mounds may have first appeared in the Great Bend region during this focus (Schambach and Early 1982). The Bossier focus is recognized by the presence of Pease Brushed-Incised, Belcher Ridged, Dunkin Incised, Sinner Linear Punctuated, and Maddox Engraved ceramics. The Bossier focus may have seen a decline in mound construction, although artifacts recovered from mound sites indicate extensive trade and continued elaborate ceremonialism (Earth Tech, Inc. 2002).

At the onset of the Middle Caddo period, sometime after approximately A.D. 1200, Caddo communities largely abandoned their ceremonial centers along the Red River and instead occupied upland areas and the banks of smaller tributary streams. Dispersed floodplain villages along these tributaries became the norm, replacing what were likely more compact villages along the Red River during the earlier Caddo period. Jeff Girard has documented a Middle Caddo dispersed floodplain village site in northwest Louisiana. The Willow Chute Bayou locality consists of a series of sites stretching along a 12 km (7 mi) length of the bayou, most of which are small in size and light in density and seem to represent hamlets, although at least three mounds are also present (Girard 2010, 2012).

The late Caddo period began around A.D. 1500 and is represented by the Belcher focus, which is primarily modeled from Webb's (1959) work at the Belcher site in northwest Louisiana. This culture appears to have centered on the Great Bend region in Arkansas, but is well represented in northwest Louisiana. The ceramics that represent this focus include Belcher Engraved, Hodges Engraved, Glassell Engraved, Foster Trilled-Incised, Belcher Ridged, and Karnack Brushed-Incised. A high degree of ceremonialism during the Belcher focus is interpreted from mass burials in shafts within mounds that are believed to represent retainer sacrifice and the inclusion of a wide variety of grave goods within the burials of some children thought to signify ascribed social ranking (Webb and Gregory 1978). Dispersed villages of hamlets and farmsteads continued to occupy the banks of upland tributary streams. There are some indications that trade interaction shifted during this focus from being predominately associated with groups in the Lower Mississippi Valley to groups in the Southern Plains (Earth Tech, Inc. 2002). The Belcher focus represents the final prehistoric manifestation of Caddo culture, and the dispersed villages in northwest Louisiana would be the same settlement type depicted on a map produced during the 1691–1692 Domingo Teran de los Rios expedition (Girard 2010).

Mississippian and Plaquemine

The Mississippian period comprises the last 500 years of Southeastern prehistory, prior to European contact. The period is generally regarded to have begun in the southern Lower Mississippi Valley at A.D. 1200 and to have lasted until the establishment of European settlements around A.D. 1700, whereas in the broader Southeast, the Mississippian period is generally regarded as the period from A.D. 1000 to 1500 (Rees 2010c). Plaquemine culture is a regionalized expression of Mississippian culture, with sites occurring in southern and eastern areas of Louisiana that are differentiated from Mississippian sites by distinctive ceramic types (Rees 2010c).

Mississippian subsistence patterns were of two varieties: riverine—the use of crop rotation in which plants, especially maize, were cultivated and supplemented by the collection of wild foods; and coastal—farming played a smaller role, while hunting, gathering, and fishing were emphasized (Bense 1994). This dichotomy in subsistence also seems to have characterized Plaquemine groups, with inland communities relying on the use of cultivars and decreased dependence upon aquatic resources in contrast to coastal communities, which were more reliant upon a subsistence economy based on marsh, back swamp, and estuarine resources (Rees 2010c).

The political organization of groups into chiefdoms stands as a defining characteristic of Mississippian culture, along with widespread trade, shared regional iconographic symbols, and the expansion of platform mound centers (Bense 1994). These traits also characterized Plaquemine culture, although many of the regional mound centers found in Louisiana are generally smaller than the immense centers that characterize the Mississippian sphere at sites such as Cahokia and Moundville (Rees 2010c). Such large Mississippian regional centers also seem to be absent in Louisiana, and in general, Mississippian sites seem less well-represented than in neighboring states, suggesting that they may in fact be invasive cultural elements (Rees 2010c).

Mississippian chiefdoms were either simple or complex in organization. Simple chiefdoms were typically comprised of several communities under the control of a single ruler. Complex chiefdoms consisted of several simple chiefdoms controlled by the ruling elite of a paramount center, having a paramount chief. The main themes in Mississippian society were ancestor worship, war, and fertility. Status differentiation was expressed through the acquisition of ritual items and the ritual use of space (i.e. mound construction), and these served as the major mechanisms for political control (Bense 1994).

Mississippian culture in the greater Southeast seems to have flourished at

approximately A.D. 1200, and this was accompanied by increased warfare. The end of this period saw political turmoil and population relocations. Instability and violence encountered in some areas is thought to have resulted from environmental problems, possibly related to the changing climatic conditions known as the Little Ice Age, as well as political problems. Though mound building began to wane in some areas during this interval, it continued in others (Bense 1994).

Historic Native Americans

Beginning with the exploration of the Mississippi and Red River valleys by Europeans in the late seventeenth century, a dynamic interval ensued for Native Americans in Louisiana. Northwest Louisiana was inhabited by a number of historic Caddoan speaking groups that are presumed to have descended from the Caddo period inhabitants of the region. These included the Yatasi, the Petit Caddo, the Isadohadocho, the Natchitoches, and the Adai. To the north, in southern Arkansas, were the Kadohodacho and Ouachita Caddo groups (Swanton 1946). The Yatasi were reportedly 64 km (40 mi) north of Natchitoches in 1690 (Swanton 1946; Fields et al. 1989), but split in the late seventeenth century due to pressure from Chickasaw groups. Some of the Yatasi joined the Kadohodacho confederacy, which was located in the Great Bend region of the Red River to the north, while the remainder moved south to join the Natchitoches (Swanton 1946). The Kadohodacho were forced southward during the late seventeenth century as a result of attacks from the Osage, and they settled on Caddo Lake with the Petit Caddo northwest of Shreveport (Williams 1974), where the Freeman and Custis expedition up the Red River in 1806 documented them (Flores 1984, cited in Earth Tech, Inc. 2002). The Natchitoches Caddo were on the Red River near the present-day city of Natchitoches in 1690, and had by this time, been joined by a group of Ouachita Caddo (Lange 1974, cited in Earth Tech, Inc. 2002). The Adai were found to the west of the Natchitoches near present-day Robeline along

Bayou Pierre and a seasonal lake known historically as Spanish Lake. By the early nineteenth century, both the Natchitoches and Adai were greatly reduced in number (Lange 1974 and Swanton 1946, cited in Earth Tech, Inc. 2002). A treaty with the Caddo by the United States government would eventually lead to the relocation of the remaining groups into Texas in 1835 (Swanton 1946).

In addition to the Caddo, a number of immigrant groups relocated into northern Louisiana during the historic period. A group of Koasati settled north of Shreveport on the Red River, where they were visited by Freeman and Custis in 1806. A Choctaw group moved into the area by 1763 and had formed several villages by 1820. Like the Caddo, these groups were all forced out of the United States in 1835 (Swanton 1946 and Flores 1984, in Earth Tech, Inc. 2002).

French Colonial (A.D. 1682 to 1763)

The beginning of the French Colonial Period in Louisiana is heralded by a journey by René Robert Cavelier, sieur de La Salle, to the mouth of the Mississippi River and the Gulf of Mexico in 1682. A decade earlier in 1672 Joliet and Marquette had explored the headwaters of the Mississippi River from French Canada, documenting its course to the south toward the Gulf of Mexico (Wall 2002:19). La Salle, his lieutenant Henri de Tonti, and a party of French men and Native Americans followed the Mississippi River during a two month journey to chart the new route to the Gulf of Mexico. At the mouth of the Mississippi, La Salle and his men erected a large cross, proclaiming possession of the country by France. After returning to France to report his claim, La Salle organized a second expedition to the Mississippi River with the intention of colonization, but instead overshot the mouth of the river and landed in what is now south Texas. The expedition ended in peril as La Salle's party became mutinous, murdering their leader, and eventually succumbed to starvation, exposure,

and hostility, first by native groups and ultimately by the Spanish (Wall 2002).

It would not be until a second voyage to the Basse Louisiane, or South Louisiana territory, in 1699 that French presence would be sufficient to result in archaeologically identifiable manifestations of material culture (Mann 2010). The expedition was led by Pierre Le Moyne d'Iberville, who was accompanied by his younger brother and lieutenant, Jean Baptiste Le Moyne, sieur de Bienville, along with 200 prospective colonists and two companies of royal marines. Iberville and Bienville sailed from La Rochelle, France, first to St. Domingue and then to Mobile Bay, where they erected a temporary encampment near present-day Biloxi. Upon exploring the region, Iberville was informed by native groups of a great river to the west, convincing him that they were near the Mississippi River. A small party was assembled to scout the coast to the west and successfully located the mouth of the Mississippi on Mardi Gras day in 1699. The party navigated upriver as far as the present location of Pointe Coupee and spent several days at a large Houma village before returning to the temporary encampment near Mobile Bay (Wall 2002).

Before returning to France that same year, Iberville established the permanent settlement of Fort Maurepas to defend the mouth of the river, near present-day Biloxi Bay, and left it under the command of Ensign de Sauvole. Shortly thereafter, while on a return journey into the Mississippi River, Bienville and a small contingency encountered a British ship south of present-day New Orleans that was reconnoitering a site for settlement. Bienville informed the English ship's captain that they were in French territory and bluffed them, successfully convincing them that French reinforcements were available to combat the ship if it did not retreat. The site of this encounter is known as the English Turn to this day, and this event is significant in that the British never returned to make a claim on Louisiana (Wall 2002).

The encounter with the English convinced Bienville of the need for a fort on the Mississippi River to properly defend the new French territory. Upon Iberville's return from France in 1700, Fort de la Boulaye, later known as Fort de la Boudry, was constructed about 80 km (50 mi) upriver from the head of passes, in what is now Plaquemines Parish. The site of the fort proved to flood frequently, and it ultimately served primarily as a stopover and staging ground for the French during expeditions against native groups. In 1707, Iberville ordered the abandonment of Fort de la Boudry (Mann 2010).

The French settlement of Fort Louis de Louisiane, or La Mobile as it came to be known, was established on the Mobile River in 1702 and would serve as the headquarters for French activities in the area until 1711. The French also consolidated their claims on interior areas of their territory by establishing Fort Rosalie near present-day Natchez, Mississippi, and Fort St. Jean Baptiste in Natchitoches in 1714 (Mann 2010; Wall 2002). Fort St. Jean Baptiste was established by Louis Juchereau de St. Denis at the site of the Natchitoches Caddo Indians to facilitate trade with the Caddo tribes of northwest Louisiana. Given the interior location of the newly established fort, St. Denis saw great potential for trade with the Spaniards of Mexico and appealed to the viceroy of Spain, despite Spanish and French laws forbidding trade with foreign nations. Upon realizing the position of the French fort, the Spanish soon after established four forts of their own to form the boundary between their territories. Ironically, St. Denis had managed to marry the daughter of a Spanish commandant, Don Diego Ramón, and was assigned as a co-commander to establish these forts along with Ramón in 1716. This heralded a period of clandestine trade between the French at Natchitoches and the Spanish, which proved profitable for St. Denis (Wall 2002).

New Orleans was founded in 1718 and was named the capital of Louisiana in 1721. The early years of occupation in New Orleans proved difficult for the colonists because of frequent flooding and a hurricane that

destroyed two-thirds of the buildings in 1722 (Wall 2002).

Areas upriver and downriver from New Orleans began receiving small farms by the 1730s. Along the Red River there existed two major obstructions to navigation. In central Louisiana, due to a set of large siltstone shoals along the Red River, Frenchmen travelling toward Natchitoches from New Orleans had to portage the rapids. This area, which came to be known as Rapide by the French and eventually contributed to the name of Rapides Parish, remained a wilderness to Europeans during the French Colonial period. Along the Red River near present-day Shreveport, a logjam known as the Great Raft rendered navigation along the river's channel impossible and forced navigation through adjacent tributary streams. The Great Raft also slowed the flow of water in this area of the river and caused widespread flooding, generally preventing habitation of the area by Europeans.

Spanish Rule (A.D. 1763 to 1800)

In 1763, France ceded all of the land of Louisiana west of the Mississippi River to Spanish rule as a result of the Treaty of Paris, drafted at the close of the Seven Years' War. While news of the transfer caused an immediate reaction among the residents of Louisiana, it would have little effect on the lives of the inhabitants until the arrival of Governor Antonio de Ulloa to Balize at the mouth of the Mississippi River in 1767. As a result of the resentment over Spanish rule and tempered by Spain's poorly funded and understaffed attempt at governance, the residents of New Orleans mounted an insurrection in October of 1768 and demanded that Ulloa depart Louisiana. Less than one year later, General Alejandro O'Reilly returned to New Orleans with a large contingent of soldiers to investigate the insurrection, and he named 13 individuals as leaders of the insurrection and charged them with treason. Six of these individuals were convicted and put to death by a firing squad (Wall 2002).

French lands to the east of the Mississippi River had been ceded to England as a provision of the Treaty of Paris, and the British rapidly began to occupy their new territory. During Spanish rule the population in Louisiana increased more rapidly than it had under French rule, receiving immigrants from French Canada, the Caribbean, and Africa, in addition to Europe. The colonization of the southeastern United States by Europeans and others during the seventeenth and eighteenth centuries had a lasting effect on native tribes. Many groups occupying areas that would become Mississippi, Alabama, and Tennessee moved into unoccupied areas of Louisiana to escape British and French intrusion. The Apalachee came from Florida to the banks of the Red River north of present-day Alexandria in 1763. Other groups, including the Alabama, Pascagoula, Biloxi, Chacato, and some Choctaws, moved into north and central Louisiana. The Koasati also moved into central and north Louisiana along the Red River in the late eighteenth century, which was welcomed by the Spanish, who hoped that the native group would form a buffer with the British to the east (Wall 2002).

Due to the persistence of the logjam that occupied the Red River near Shreveport, broad-scale Anglo occupation of the area would not begin to flourish until the nineteenth century. Exploration of the area likely began as early as the seventeenth century, but the area would remain unmapped until the nineteenth century.

Antebellum and Late Nineteenth Century (A.D. 1800 to 1899)

The Louisiana territory was retroceded to France by Spain in 1800 and then purchased from France by the United States in 1803. In 1812, the first map of the area near present-day Shreveport showed a number of Native-American trails connecting a Koasati, or Coushatta village, with Lake Bistineau and to the hot springs near the Ouachita River in Arkansas (Southern Publishing Company 1890).

The number of plantations in the South increased during the 1820s as a result of innovations in cotton production and transport. The introduction of the cotton gin and steam engines on boats made the separation of seeds from the cotton fiber more efficient and allowed relatively cheap transport of the ginned cotton. Although navigation along the tributaries to the east of the Red River were sufficient for transporting commodities such as cotton from the plantations established in the 1820s to the north of Minden, the removal of the Great Raft by Captain Henry Miller Shreve between 1833 and 1838 would open the area for habitation by Euro-Americans and would result in a population boom (Wall 2002). The area was also opened by the U.S. Government for homesteading, and prior to the Civil War a number of plantations up to 405 ha (1,000 acres) in size and smaller farms ranging in size from 16–65 ha (40–160 acres) occupied the area.

The introduction of slave labor into the area increased cotton production and sales between 1840 and 1860. As the number of slaves on plantations in Louisiana increased in the nineteenth century, so did fear of the threat of a slave revolt, especially since a large number of slaves were brought from the island of St. Domingue, where a successful revolt was carried out and formed the nation of Haiti. In 1811, a slave revolt did take place and a group of as many as 500 poorly armed individuals stormed New Orleans only to be defeated by residents and a detachment of U.S. troops. The fear of insurrection continued to plague slaveholders throughout Louisiana, although none as large as the 1811 uprising would occur again (Wall 2002).

In 1861, Louisiana seceded from the Union and joined the Confederate States of America. After the siege of New Orleans in 1862, the only Confederate strongholds remaining along the Mississippi River were at Vicksburg and Port Hudson. In an attempt to divide the Confederacy, Federal forces put their sights on the capture of Shreveport to stop the flow of supplies from Texas. In May 1863, a coordinated attack by a fleet of gunboats and army forces successfully forced

the retreat of Confederate troops from Fort De Russey south of Alexandria, but was not, however, successful at capturing Shreveport, so a second attempt was launched in spring of 1864. Confederate troops had been able to remove most of their supplies from Fort De Russey prior to the earlier attack and fought with greater resistance upon the return of Union forces (Wessel et al. 1993). The successful capture of Alexandria, along with Vermillionville and Opelousas to the south, put all of southwestern Louisiana under Federal control (Wall 2002).

Union forces proceeded toward Shreveport after ascending the river from Alexandria, but fell short of capturing the city due to a heated battle with Confederate troops from Mansfield that routed the Union's army positions and resulted in a shortage of support for the Union gunboats. On their retreat downriver, the Union boats were stranded at the shoals near Alexandria due to a low water level in the Red River. A Union engineer put the forces to work constructing a set of dams downriver from the falls that allowed the gunboats to safely pass over the shoals, but during their retreat through Alexandria the city was burned. Although Confederate troops quickly reoccupied the area after Union forces left, the end of the war soon followed (Wessel et al. 1993).

The Civil War would lead to a restructuring of the system of agricultural production in Louisiana, as farms struggled to meet higher labor costs after the emancipation of slaves. The plantations along the Red River were particularly impoverished as the infrastructure for processing sugar and cotton had been largely demolished during the war. After Reconstruction, tenant farming and sharecropping became the primary forms of agricultural production in the state (Wessel et al. 1993).

Richland Parish was created by the Louisiana Legislature in 1868, with its land area being consolidated out of portions taken from the preexisting Ouachita, Carroll, Franklin, and Morehouse Parishes. The name of the parish derives from the "rich land" of

the area, the fertility of which formed the backbone of the region's agricultural livelihood. Initially, the steamboat trade provided the primary means of access to and transport within the parish, with the Boeuf River providing a convenient access point to the interior of the parish. Though an east-west railroad had been chartered as early as 1836, trains did not begin running in the parish until 1861. Following the Civil War, an era of cotton production began anew in the 1880s, with areas near the railroad cleared and cultivated in cotton (Allen 1993).

Twentieth Century (A.D. 1900 to 1999)

With the development of the railroad system in northern Louisiana in the late nineteenth century, new avenues for commerce had been established by the early twentieth century. Like most of Louisiana, however, the area would never regain the wealth of the antebellum years. Small towns in the region would become centers for commerce, and the establishment of sawmills would bring some industry. However, road development was made more difficult by the extensive backswamps found in Richland Parish, and it was not until the widespread adoption of the automobile in the twentieth century that an improved road network was developed (Allen 1993).

A much improved drainage system was constructed by the Louisiana Department of Public Works beginning in the 1950s, allowing much more land in Richland Parish to be drained for farming. Agriculture remains the dominant land use in the parish in the modern era, with cotton and soybeans serving as the main crops. Though not as important as agriculture, oil and gas production also plays a role in the modern Richland Parish economy (Allen 1993).

Chapter 4. Methods

The project area was systematically investigated by pedestrian survey and shovel testing. High probability zones (HPZs) were defined as those areas within 200 m (656 ft) of a mapped perennial water source; these areas were sampled with shovel tests at 30 m (98 ft) intervals along transects that were also spaced at 30 m (98 ft) intervals. The remainder of the project area was considered to have a low probability for encountering archaeological material and was shovel tested at a 50 m (164 ft) interval along transects also spaced at 50 m (164 ft) intervals. All shovel tests measured 30.0-x-30.0 cm (11.8-x-11.8 in) and extended well into the subsoil. All fill removed from the tests was screened through .64 cm (.25 in) mesh hardware cloth, and the sidewalls and bottoms were examined for cultural material and features.

Surface visibility was generally excellent throughout the survey area. The majority of the project area consisted of open agricultural fields with excellent visibility. However, in those small portions of the survey area vegetated with secondary forest, surface visibility was generally moderate to poor due to understory vegetation, grass cover, and/or leaf litter.

The survey of the project area was conducted during the period extending from February 18 to April 17, 2015. The tract was surveyed with a total of 58 transects. These included four high probability transects spaced 30 m (98 ft) apart with 30 m (98 ft) interval shovel tests, and 54 low probability transects spaced 50 m (164 ft) apart with 50 m (164 ft) interval shovel tests. The high probability transects were oriented north-south and the low probability transects were oriented west-east. A total of 519 shovel tests were excavated along transects in the project area. Figure 1.3 shows the distribution and locations of all transects in the survey area. In addition to shovel testing, the entire project area was visually inspected for cultural material during the excavation of the shovel tests. Standing

structures were photographically documented and their architectural style and structural characteristics were recorded.

Positive transect shovel tests were delineated to define site boundaries and investigate site context. Site boundary recordation began with the assignment of a positive shovel test as the site datum, which was arbitrarily assigned a grid coordinate of N1000 E1000. All other shovel tests excavated for site boundary delineation were also assigned coordinates in relationship to the site datum. Surrounding each positive shovel test, delineation shovel tests were placed at 10 m (33 ft) or 20 m (66 ft) intervals. All site delineations began at a 10 m (33 ft) interval, but per SHPO guidelines, in those cases where three consecutive positive shovel tests were encountered at 10 m (33 ft) intervals the delineation interval was expanded to 20 m (66 ft). In either event, delineation proceeded in cardinal directions until two negative shovel tests were excavated in each cardinal direction. A total of 390 shovel tests were excavated during site delineation. Universal Transverse Mercator (UTM) coordinates were recorded with a Geo XT 3000 series global positioning system (GPS) unit manufactured by Trimble to verify locations within the project area. This unit is capable of accuracy to within 3.0 m (9.8 ft).

All artifacts collected during the fieldwork were washed by CRA laboratory personnel and placed into racks to air-dry prior to further processing and analysis. Artifacts were classified according to regional typologies and were then documented and cataloged following SHPO guidelines. Recovered materials and notes will be curated with the Louisiana Office of Cultural Development, Division of Archaeology.

Chapter 5. Recovered Materials

Historic materials were recovered during the current survey from nine sites (16RI305 and 16RI313–16RI320) and nine isolated finds (IF 12–20), while prehistoric materials were recovered from one site (16RI313) and one isolated find (IF 1). Recovered prehistoric and historic artifacts are discussed in separate sections in this chapter, and a photograph of representative prehistoric and historic artifacts recovered during the project is presented in Figure 5.1. The assemblage from individual sites is discussed in summary below and in relation to intrasite provenience in the *Results* in Chapter 6. A complete inventory of all historic artifacts can be found in Appendix A.

Prehistoric Artifacts

Prehistoric artifacts were recovered during the current survey from one newly recorded archaeological site (16RI313), as well as one newly recorded isolated find locality (IF 1). One prehistoric artifact was recovered from each resource, and both were of lithic manufacture. The methods used during the laboratory analysis are presented along with the results of the analysis in the following sections.

Raw Material Categories

The lithic artifacts were sorted into two separate raw material categories during artifact analysis, and each raw material was assigned a raw material number (RM 1 and RM 4). Attempts were made to correlate these materials with regional stone sources where possible.

Each raw material was initially described by color and texture (very fine to coarse), or groundmass if visible. Fractured surfaces were then examined under a hand loupe that provided 10x magnification to look for any characteristics that may provide data on the origins of each material. When present, cortical surfaces were also described to provide information on possible origins and

package size. Evidence for thermal alteration was also documented when present.

RM1

RM1 is a very light to dark brown and tan chert. It exhibits some opaque, low to medium luster. Some flakes of this material type have light- or dark-colored fossiliferous shapes, and a few have quartz-like sand suspended in their matrix (smooth and chert-like otherwise). Some examples exhibit a water-worn cobble cortex. This material seems to represent Citronelle chert gravels that outcrop in Pliocene and Pleistocene aged strata throughout much of northern and western Louisiana. These materials are likely to be locally available and occur in small packages, as is evidenced by the high incidence of cortical surfaces among the raw materials in the region.

RM4

RM4 is a gray chert which has marbled/mottled appearance. It is opaque, with a medium luster. The single example has black surfaces that appear to be more lustrous and seems to be the result of thermal alteration, which is also evidenced by pot-lidding. The source of this material is not clear, although similar materials occur as locally available cobbles in area streams and in similar outcrops to RM1.

Bifacial Implements

For this analysis, biface reduction is viewed as a continuous process. A biface may have been taken out of the reduction sequence at any stage and used for a specific task. After use, it may have reentered the continuum and been further reduced. Bifacial reduction usually started with hard hammer percussion followed by soft hammer percussion. Pressure flaking was generally used for final shaping and haft modification (Johnson 1981) and to prepare striking platforms for the removal of large flakes during biface thinning.



Figure 5.1. Representative prehistoric and historic artifacts recovered from the project area. From left to right: First row, prehistoric Archaic dart point; second row, stoneware water pipe fragment, blue transfer print whiteware rim sherd, green transfer print whiteware sherd, green chromatic glaze whiteware rim sherd; third row, cobalt glass Phillips' Milk of Magnesia bottle base fragment formed in an Owens automatic bottling machine, vinyl record fragment; fourth row, railroad spike, wire nail fragment.

The terms hard and soft hammer percussion are used in this analysis to reflect the form of flake scars present and not necessarily to identify the type of percussor used to detach the flake. Hard hammer scars are relatively narrow and deep, and they exhibit prominent negative bulbs of percussion. A biface shaped by hard hammer percussion exhibits high intersecting ridges between flake scars and an irregular bifacial margin. Soft hammer scars are relatively

shallow and broad with small negative bulbs of percussion, and they often leave ripple marks in the flake scar. A biface with mostly soft hammer scars usually has a regular bifacial margin, and the ridges between flake scars are not as pronounced as ridges on bifaces with hard hammer scars only. Pressure flake scars are usually small and shallow with small negative bulbs of percussion, and they are often restricted to the edge of the implement. Hard hammer flakes are associated

with early-stage reduction. Soft hammer flakes and pressure flakes are associated with late stage reduction. Note that in some cases, bifaces may have been used as cores (e.g., Kelly 1988).

Results of Analysis

Both of the prehistoric artifacts recovered from the Holly Ridge Northwest tract were identified as bifaces. The example from IF 1 was a large spear or dart point that was well-made from RM1, which is described above. The biface consists of a medial section with the shoulders intact, which are barbed and suggestive of a corner-notched morphology. The lateral blade margins are parallel and converge toward the distal end, which is broken off. The biface appears to have been manufactured through soft hammer flaking in a random pattern, with subsequent blade shaping carefully executed through pressure flaking. This large biface fragment likely represents a portion of an Archaic-age dart point, although the present portion does not provide any more specific temporal data and the fragmentary condition precludes typing of the specimen.

The biface recovered from Site 16RI313 consists of a thermally-altered fragment of what appears to have been a dart point manufactured from RM4. This specimen is too fragmentary even to determine which portion is present, and it provides no temporal data.

Historic Artifacts

The historic assemblage includes artifacts classified and grouped according to a scheme originally developed by Stanley South (1977). South believed that his classification scheme would present patterns in historic site artifact assemblages that would provide cultural insights. Questions of historic site function, the cultural background of a site's occupants, and regional behavior patterns were topics to be addressed using this system.

South's system was widely accepted and adopted by historical archaeologists. However, some have criticized South's model on theoretical and organizational grounds (Orser

1988; Wesler 1984). One criticism is that the organization of artifacts is too simplistic. Swann (2002) observed that South's groups have the potential to be insufficiently detailed. She suggested the use of sub-groups to distinguish between, for example, candleholders used for religious purposes and those used for general lighting. Others, such as Sprague (1981), have criticized South's classification scheme for its limited usefulness on late nineteenth and early twentieth century sites, sites which include an array of material culture—such as automobile parts—not considered by South. Despite its shortcomings, most archaeologists recognize the usefulness of South's classification system to present data.

Stewart-Abernathy (1986), Orser (1988), and Wagner and McCorvie (1992) have subsequently revised this classification scheme. In this report, artifacts were grouped into the following categories: architecture, arms, clothing, communication and education, domestic, faunal/floral, furnishings, maintenance and subsistence, personal, transportation, and unidentified. Not all of these groups were populated. The historic artifacts recovered during this project are summarized in Table 5.1.

Grouping artifacts into these specific categories makes it more efficient to associate artifact assemblages with historic activities or site types. One primary change associated with the refinement of these categories is reassigning artifacts associated with the "Miscellaneous Activities" group under South's (1977) original system. Considering the potential variety of historic occupations and activities within the project area, a refinement of the artifact groupings was considered important to perhaps observe whether the distribution of specific artifact groups would produce interpretable patterns related to activity areas or structure types. Each one of these groups and associated artifacts is discussed in turn.

Usually, an artifact has specific attributes that represent a technological change, an invention in the manufacturing process, or

Table 5.1. Historic Artifacts Recovered According to Functional Group.

Site	Architecture	Domestic	Furnishings	Personal	Maintenance and Subsistence	Unidentified	Total
16RI305	11	48		1		3	63
16RI313	8	51	1			7	67
16RI314	1	18				2	21
16RI315	1	4					5
16RI316	2	29				2	33
16RI317	22	51				9	82
16RI318		3				1	4
16RI319	3	13				2	18
16RI320	3	4					7
IF 12		1					1
IF 13	1	1					2
IF 14		1				1	2
IF 15		1					1
IF 16		3					3
IF 17						1	1
IF 18					1		1
IF 19	2	1					3
IF 20						2	2
Total	54	229	1	1	1	30	316

simple stylistic changes in decoration. These attribute changes usually have associated dates derived from historical and archaeological research. For example, bottles may have seams that indicate a specific manufacturing process patented in a certain year. The bottle then can be assigned a “beginning” date for the same year of the patent. New technology may eliminate the need for the same patent and the bottle would no longer be produced. The “ending” date will be the approximate time when the new technology took hold and the older manufacturing processes are no longer in use.

Specific styles in ceramic decorations are also known to have changed. Archaeological and archival researchers have defined time periods when specific ceramic decorations were manufactured and subsequently went out of favor (e.g., Lofstrom et al. 1982; Majewski and O’Brien 1987). South’s (1977) mean ceramic dating technique uses this information. The dates presented here should not be considered absolute, but rather the best

estimates of an artifact’s age available at this time. A blank space indicates that the artifact could not be dated or, alternately, that the period of manufacture was so prolonged that the artifact was being manufactured before America was colonized. An open-ended terminal date was assigned for artifacts that may be acquired today. The rationale for presenting dates for the artifacts recovered is to allow a more precise estimate of the time span the site was occupied, rather than the mean occupation date of a site.

A summary of the artifacts recovered follows. Information on the age of artifacts as described in the artifact analysis is derived from a variety of sources cited in the discussion. Beginning and end dates for some artifacts were approximated. A complete inventory of the historic artifacts can be found in Appendix A.

Architecture Group

The architecture group is comprised of artifacts directly related to buildings, as well as those artifacts used to enhance the interior or exterior of buildings. Artifacts from this group recovered during the current project consisted of construction materials, fittings and hardware, flat glass, and nails (Table 5.2).

Table 5.2. Summary of Architecture Group Artifacts Recovered from the Project Area.

Site/IF	Construction Material	Fittings and Hardware	Flat Glass	Nails	Total
16RI305	1		9	1	11
16RI313			7	1	8
16RI314			1		1
16RI315				1	1
16RI316			1	1	2
16RI317	4	5	10	3	22
16RI319			3		3
16RI320				3	3
IF 13			1		1
IF 19			2		2
Total	5	5	34	10	54

Construction Materials

Construction materials refer to all elements of building construction. Five artifacts identified as construction materials were collected during this project, including one ceramic tile, one asbestos roofing/siding fragment, two brick fragments, and one piece of mortar.

Fittings and Hardware

This class of artifacts includes fittings for structures, such as plumbing pipes and other architectural hardware. These items are decorative and functional items used in architectural construction that are fixed but not built in. The items recovered from this category during the current project consisted of five fragments of stoneware water pipe.

Flat Glass

Cylinder glass was developed in the late eighteenth century to enable the inexpensive production of window glass. With this method, glass was blown into a cylinder and then cut flat (Roenke 1978:7). This method of producing window glass replaced that of crown glass production, which dates back to the medieval period and was capable of fabricating only very small, usually diamond-shaped panes (Roenke 1978:5). Cylinder glass was the primary method of window glass production from the late eighteenth century through the early twentieth century, at which time cylinder glass windows were slowly replaced by plate glass windows. Plate glass window production became mechanized after 1900, but did not become a commercial success in the United States until around 1917 (Roenke 1978:11).

Cylinder window glass has been shown to gradually increase in thickness through time and can be a useful tool for dating historic sites. Several dating schemes and formulas have been devised that use average glass thickness to calculate building construction or modification dates. These formulas include those of Ball (1984), Roenke (1978), and Chance and Chance (1976), to name a few. Like previously derived formulas, Moir (1987)

developed a window glass dating formula to estimate the initial construction dates for structures built primarily during the nineteenth century. Although Moir (1987:80) warns that analysis on structures built prior to 1810 or later than 1915 have shown poor results, most research in this area shows the regression line extending back beyond 1810 (Moir 1977; Roenke 1978), hence, dates calculated back to 1785 were considered plausible. Sample size is also a consideration when using the Moir window glass regression formula. According to Moir (1987:78), sample sizes need to be “reasonable” in order to accurately date the construction of a building. For the purposes of this investigation, a “reasonable” sample size is considered to be 25 window glass fragments.

In addition to providing a recommendation for a “reasonable” sample size, Moir also determined that the best results of this dating method were achieved when glass fragments were collected from more than one or two locations at a site, when structural additions were sampled separately from the main building, and when the length of occupation of the site was less than sixty years (Moir 1987). These restrictions were the result of Moir’s formula being designed to derive a single manufacturing date from the mean thickness of all recovered window glass fragments. Under these circumstances, sampling a structural addition built significantly later than the primary building or a structure that had been occupied for a long period could be expected to skew the derived date for the assemblage.

A total of 34 pieces of flat glass were recovered from six sites and two isolated finds during the current project (see Table 5.2). These included 2 pieces of indeterminate flat glass, 2 pieces of laminated glass, and a total of 30 pieces of window glass. Each fragment of window glass was measured for thickness and recorded to the nearest hundredth of a millimeter using digital calipers. The differences between cylinder window glass, mirror glass, and plate glass were in part determined by the thickness and wear of each flat glass fragment. Although Moir (1987:80)

states that dating window glass after 1915 is not as reliable for dating sites, for the purposes of this study, window glass that measured 2.41 mm in thickness is assumed to date to 1916 and was included in the calculations, because according to Roenke (1978:11), plate glass did not become widely or successfully produced in the United States until 1917.

Six of the 30 recovered window glass fragments measured greater than 2.41 mm in thickness, and were therefore not subjected to analysis. Of the remaining pieces, measurements of only 24 fragments were possible. While this total is only slightly below the reasonable sample size to accurately date construction of buildings using the Moir formula, the fragments were recovered from eight separate locations. The result of the formula was therefore not reliable and is not presented here.

Nails

There are three stages recognized in the technological chronology of nails. The first stage is represented by the wrought nail, the primary type of construction fastener in the eighteenth and early nineteenth centuries. This nail type was followed by the machine-cut nail and the wire-drawn nail. The use of wrought nails ended around 1810 with the proliferation of square cut or machine-cut nail use (Genheimer 1987:91; Nelson 1968:8).

Jacob Perkins developed his first nail-cutting machine sometime between 1790 and 1792; however, it was much later when these machines were utilized in the nail industry (Phillips 1996). The cut nail, introduced in approximately 1800, originally had a machine-cut body with a hand-made head. Around 1815, crude machine-made heads replaced hand-made heads on cut nails, and overall, cut nails replaced wrought nails in the construction industry. Early fully machine-cut nails exhibit a “rounded shank under the head,” and therefore, often appear pinched below the head of the nail (Nelson 1968:8). By the late 1830s, these “early” fully machine-cut nails were replaced with “late” fully, or modern, machine-cut nails.

The first wire-drawn nails were introduced into the United States from Europe by the mid-nineteenth century. These early wire nails were primarily used for box construction and were not well adapted for the building industry until the 1870s. Wire nails required the use of Bessemer steel, and until 1879, when an American firm began fabricating this steel type, the steel was imported from Norway. By 1886, the wire nail industry was able to produce a wide variety of pennyweights to compete with the cut nail companies (Davidson 2006:116). Although the cut nail can still be purchased today, the wire nail nearly universally replaced it by the turn of the twentieth century (Nelson 1968:8). Wire nails suitable for the construction of buildings were not present in North America until circa 1880. By the end of the nineteenth century, the production of wire nails in the United States greatly exceeded that of cut nails (Priess 1973). By the 1890s, the cut nail had been virtually replaced by the wire nail in the building construction industry (Davidson 2006:118).

Ten nails were recovered during the project from six different locations. Of these, one was an indeterminate cut/wrought nail, one was a cut nail, three were wire nails, and five were indeterminate nails or nail fragments that were heavily corroded and were of indeterminate manufacturing method. The nails recovered suggest activity in the area dated to the nineteenth to twentieth century with the latter end best represented.

Domestic Group

Recovered artifacts included in the domestic group consisted of ceramics, container glass, glass tableware, and other tableware (Table 5.3).

Ceramics

The ceramic inventory consisted of a variety of refined and utilitarian wares dating from the nineteenth century through the twentieth century. A total of 37 ceramic sherds were recovered during the current project. The recovered ceramics were grouped into three major ware types: whiteware, ironstone, and

porcelain. Ceramics within each of these ware groups were separated into decorative types that have temporal significance. Each of these ware groups is reviewed below, followed by discussions of associated decorative types.

Table 5.3. Summary of Domestic Group Artifacts Recovered from the Project Area.

Site/IF	Ceramics	Container Glass	Glass Tableware	Other Tableware	Total
16RI305	7	40		1	48
16RI313	15	34	2		51
16RI314	3	15			18
16RI315	1	3			4
16RI316	6	22	1		29
16RI317	1	50			51
16RI318		3			3
16RI319	2	11			13
16RI320		4			4
IF 12		1			1
IF 13		1			1
IF 14	1				1
IF 15	1				1
IF 16		3			3
IF 19		1			1
Total	37	188	3	1	229

Whiteware

As a ware type, whiteware includes all refined earthenware that possesses a relatively nonvitreous, white to grayish white clay body. Undecorated areas on dishes exhibit a nearly pure white finish under clear glaze. This glaze is usually a variant combination of feldspar, borax, sand, nitre, soda, and china clay (Wetherbee 1980:32). Small amounts of cobalt were added to some glazes, particularly during the period of transition from the earlier pearlware to whiteware and during early ironstone manufacture. Some areas of thick glaze on whiteware may, therefore, exhibit bluish or greenish blue tinting. Weathered paste surfaces are often buff or off-white and vary considerably in color from freshly exposed paste (Majewski and O'Brien 1987).

Most whiteware produced before 1840 had some type of colored decoration. These decorations are often used to designate ware groups (i.e., edgeware, polychrome, and

colored transfer print). Most of the decorative types are not, however, confined to whiteware. Therefore, decoration alone is not a particularly accurate temporal indicator or actual ware group designator (Price 1981).

The most frequently used name for undecorated whiteware is the generic "ironstone," which derives from "Ironstone China" patented by Charles Mason in 1813 (Mankowitz and Haggart 1957). For purposes of clarification, ironstone will not be used when referring to whiteware. Ironstone is theoretically harder and denser than whiteware produced prior to circa 1840. Manufacturer variability is, however, considerable and precludes using paste as a definite ironstone identifier or as a temporal indicator. Consequently, without independent temporal control, whiteware that is not ironstone is difficult to identify, as is early versus later ironstone. For this analysis, the primary determining factor in classification of a sherd as whiteware was the hardness and porosity of the ceramic paste.

Whiteware sherds represented the majority of the recovered ceramic assemblage, with 33 examples being collected. Decorative types observed on the whiteware sherds in this assemblage are summarized and defined in the following discussions.

Plain

This type includes vessels with no decoration. While some researchers, such as Lofstrom et al. (1982:10) and Wetherbee (1980), include molded designs with "plain" whiteware, for this analysis Majewski and O'Brien's (1987:153) recommendations are followed, meaning that molded vessels should be grouped on their own. Plain whiteware vessels became very popular following the Civil War and continued to increase in popularity throughout the late nineteenth and early twentieth centuries (Faulkner 2000). Bacteriological research emerged after the Civil War, and it was not long before it became widely known that there is a link between bacteria and disease (Duffy 1978:395). Since bacteria could not be seen with the naked eye, it was commonly thought

that plain, undecorated wares were best suited for maintaining and serving clean, bacteria-free food. Hence, bacteriological research helped spur the rise in popularity of undecorated vessels, which resulted in increasing competition between whiteware and ironstone manufacturers.

Purity crusades also indirectly helped increase the popularity of plain white vessels in the late nineteenth and early twentieth centuries, as social reformers—many of whom were white and middle class—focused on cleaning up city streets, improving sanitation, and ridding cities of disease epidemics. Part of this crusade was the public promotion of purity at the dinner table. Unfortunately, many of these white public health reformers were also motivated by Social Darwinist ideas, and sanitation problems and disease epidemics were often blamed on African Americans and East-European immigrants, who were stereotyped as being the harbingers of disease and social decay (Friedman 1970:123).

Plain whiteware sherds date from 1830 to the present (Majewski and O'Brien 1987:119). While many of these sherds may have come from plain vessels, it should be noted that many of these sherds may also be undecorated parts of decorated vessels. Of the whiteware fragments collected during the current project, 24 were plain whiteware.

Embossed/Molded Design

As transfer printing became popular on pearlware, molded designs had been simplified. Molded designs were revived with the introduction of whiteware in the late 1830s, but they did not attain the elaborateness of previous forms. Specialized moldings for whiteware were common in the 1840s, when the ware had a more limited and generally more affluent market (Wetherbee 1980).

During the 1860s, embossing tended to become softer in relief than the angular and sculpted forms of the 1840s and 1850s (Wetherbee 1980). During the 1870s and 1880s, molded decorations occupied smaller areas on dishes, and elaboration was confined to handles and lids. British stylistic trends

dominated the embossed and molded whiteware industry throughout most of the nineteenth century (Wetherbee 1980). Since a distinction between mold types was not made, the date for embossed/molded design wares recovered was defined as 1860 to the present. One embossed/molded whiteware sherd was recovered. This example incorporates a molded rim and molded line decoration on the surface.

Transfer Print

By the late 1780s, transfer printing was being developed in the potteries of Staffordshire, England, as a fast and inexpensive method of mass producing decorated pearlware and whiteware. It was originally perfected circa 1756 for use on porcelains and was not used on earthenwares until Thomas Minton designed his blue willow pattern in 1780, which initiated a wider commercial use (Little 1969:15–17; Norman-Wilcox 1978). This process revolutionized the Staffordshire ceramic industry and allowed for the first time a set of tableware to be produced with design uniformity (Samford 1997:1).

When transfer printing, the required pattern is first engraved by hand on a copper plate, from which a tissue-paper print called a “pull” or “proof” is taken. Then, by pressing the tissue against a piece of undecorated ware, the design is deposited or transferred to the surface of the vessel. On early ceramic vessels these prints were added after the final glazing process had been completed. This was often referred to as bat printing, cold printing, or overglaze printing. These early designs were often found in black, red, brown, and purple. Transfer prints applied underneath the glaze were first attempted circa 1780 (Samford 1997:2–3). Early underglaze prints were often blue, since cobalt was the only coloring agent that could withstand the heat of the firing process at this time (Samford 1997:21). As technology improved and glazes became clearer, other colors began to be used.

According to Hughes and Hughes (1968:150) and others, such as Godden (1964), blue was the dominant color of transfer-printed wares prior to the 1830s. With

advances in ceramic technology, brown and black prints appeared after 1825, and by 1830, green, red, pink, mulberry, and light blue were also being produced (Bemrose 1952:23; Little 1969:13–22; Wetherbee 1980:15). By the late 1840s, a technique for transferring more than one primary color to a vessel was perfected (Godden 1964; Samford 1997:22). Green transfer-printed wares were generally no longer produced after 1859 (Samford 1997:20).

Early patterns include the willow pattern and other Chinese design motifs. Although some Chinese-style motifs were still being used, the use of classical and romantic scenic themes became popular in the early nineteenth century. These patterns included country scenes, floral motifs, and travel scenes. Patterns depicting American buildings and scenery were popular after 1812 (Snyder 2000:5). Since whiteware was not generally available to the consumer market until 1830, this date was used as the beginning date of manufacture for most transfer-printed whiteware recovered, while the maximum date was based on the color.

One distinguishing characteristic of these late transfer prints is a poor quality transfer print. For the most part, these can be identified by uneven patterning and overlapping seams in the transfer pattern. These late transfer prints were often reproductions of earlier transfer printed designs and were found in many different colors. Some of the patterns began to be litho-printed by machine instead of being engraved by hand, as had been conducted in the past. This allowed for mass production (Neale 2005:17). Five transfer printed whiteware sherds were identified in the current assemblage, with two displaying an unidentified dark blue pattern, two incorporating green floral prints, and one being gray with a scroll-like print.

Slip decorated

Slip decorating, variously termed dipped, annular, or banded, refers to a technique used to apply bands or stripes horizontally to hollow vessel forms such as mugs, bowls, cups, and covered dishes (Majewski and

O'Brien 1984:163). The bands or stripes applied to the particular vessel, unlike hand-painted flat decorations, will have slight relief. Various colors can be found on slip-decorated wares. Over time, the bands became wide, and the colors changed from earthen browns, greens, yellows, blues, and black to bolder colors, such as bright blues, yellows, and white. Very narrow bands of white or black were often found on the later, brightly colored vessels. Slip-decorated vessels may be further enhanced with one or more of the following decorative types: rouletted or engine-turned decoration, hand-painted swirls, marbled motifs, and mocha designs.

Rouletted decoration is produced when a shaped instrument is pressed onto a still damp slipped vessel as it is turned on a potter's wheel, thereby exposing the contrasting paste color beneath (Godden 1963:105). Hand-painted decorations were often used on annular wares as accents between bands. These designs were often swirled, resembling finger painting or black-and-white "cat's eyes." In addition to these hand-painted motifs, zigzag and other abstract-shaped concentric lines were often applied between bands (Majewski and O'Brien 1984:163). Mocha decoration is produced when an acidic mixture (usually consisting of various combinations of tobacco juice, hops, urine, dry printer's black, turpentine, citric acid, and water) is dripped onto the colored slip, where it spreads into forms resembling trees, seaweed, or fronds, among other things (Majewski and O'Brien 1984:163).

Slip decorations were incorporated into the production of a wide range of earthenwares beginning in the second half of the eighteenth century. This decorative type was found on expensive creamware vessels as well as low-end utilitarian earthenwares (Carpentier and Rickard 2001:115). One of the earliest forms of slip decoration was made using an engine-turning lathe circa 1760. This type of decoration is also referred to as rouletted and is most often found in its earliest form on refined redware. By 1780, it was used on both creamware and pearlware vessels (Carpentier and Rickard 2001:116–118). Most

annular-decorated nonvitreous earthenware was produced in England from circa 1790 through the early twentieth century (Majewski and O'Brien 1984:163). These wares were produced for both local use and export. Some annular wares were produced in the United States around 1850 (Majewski and O'Brien 1984:164). Mocha decorations appeared as early as 1790 (Carpentier and Rickard 2001:122). Dendritic mocha decorations were seen as late as 1939 (Carpentier and Rickard 2001:125). Worm, cable, twig, and "cat's eye" decorations were implemented in the last decade of the eighteenth century (Carpentier and Rickard 2001:128). A wide variety of decoration on vessels of similar size and form can be found on many types of slip-decorated earthenwares.

Slip-decorated whiteware began to be produced around 1830, when the production of pearlware ceased, and continued to be made until the end of the nineteenth century (Carpentier and Rickard 2001:132; Price 1981:18). By the late nineteenth century, utilitarian vessel forms, as well as mugs, were the most commonly found slip-decorated items.

Two fragments of whiteware recovered from the project area displayed slip decoration, with one having a teal slip on the interior and exterior and the other having a pink slip on the upper portion and a colorless glaze on the lower portion.

Chromatic Glaze

Solid colored, or chromatic, glazed ceramics became popular during the second quarter of the twentieth century (Majewski and O'Brien 1987:164). As chain stores dealing in five- and ten-cent merchandise, groceries, drugs, and clothing sought to provide an increased array of cheap merchandise for consumers, pottery companies expanded their production efforts with the use of tunnel kilns. These kilns, which contained continuous flow ovens, allowed pottery manufacturers to significantly increase the output of cheap dishes available to chain stores and, ultimately, consumers (Blaszczyk 2000:120–121).

One of the first well known and popular styles to be produced in the 1920s had a yellow or ivory glaze with or without decals (Blaszczyk 2000:121). By the 1930s, other chromatic glazes in colors such as red, cobalt blue, and green also became popular, as exemplified by the excitement surrounding Homer-Laughlin's introduction of Fiesta tableware to the consumer market in 1936 (Gonzalez 2000). Over time, other colors were added to the chromatic-glazed tablewares available to consumers, and although chromatic-glazed vessels are still available today, the height of their popularity was seen between the 1920s and 1960s.

It should be noted that sherds identified as having solid color glazing can date to the nineteenth century. However, these sherds are usually fragments from dip-glazed vessels (such as annular and mocha-decorated wares) and should be noted as such.

One piece of whiteware with a green monochromatic glaze was identified. This piece appears to be a bowl fragment.

Ironstone

Ironstone is a white or gray-bodied, refined stoneware with a clear glaze. It is often indistinguishable from whiteware. Ironstone differs from whiteware in that the body is more vitreous and dense. In addition, a bluish tinge or a pale blue-gray cast often covers the body. In some cases, a fine crackle can be seen in the glaze; however, this condition is not as common as it is in whiteware (Denker and Denker 1982:138).

Confusion in the classification of white-bodied wares is further compounded by the use of the term as a ware type or trade name in advertising of the nineteenth century. Both ironstones and whitewares were marketed with names such as "Patent Stone China," "Pearl Stone China," "White English Stone," "Royal Ironstone," "Imperial Ironstone," "Genuine Ironstone," "White Granite," and "Granite Ware" (Cameron 1986:170; Gates and Ormerod 1982:8). These names do not imply that true ironstone was being manufactured. Some investigators avoid the distinctions

entirely by including ironstones as a variety of whiteware. Others, however, such as Wetherbee (1980), refer to all nineteenth-century white-bodied wares as ironstone. For this analysis, the primary determining factor in classification of a sherd as ironstone was the hardness and porosity of the ceramic paste. Sherds with a hard, vitreous paste were classified as ironstone.

Charles James Mason is usually credited with the introduction of ironstone (referred to as Mason's Ironstone China) in 1813 (Dodd 1964:176). Others, including the Turners and Josiah Spode, produced similar wares as early as 1800 (Godden 1964). As a competitive response to the highly popular porcelain from east Asian sources, British potters initiated this early phase of ironstone production. The ironstone of this early phase bears a faint blue-gray tint and oriental motifs, much like Chinese porcelain. The early ironstone, available commercially in the United States circa 1830, had a finer, denser paste (Majewski and O'Brien 1987:120). A second phase of ironstone began after 1850 in response to the popularity of hard paste porcelains produced in France. This variety of ironstone had a heavier, harder paste and reflected the gray-white color of French porcelains. It was also less expensive (Majewski and O'Brien 1987:120).

While some ironstones continued to use oriental design motifs after 1850, the general trend was toward undecorated or molded ironstones (Collard 1967:125–130; Lofstrom et al. 1982:10). Ironstone continued to be produced in England, and after 1870, it was also manufactured by numerous American companies. For many years, classic ironstone—the heavy, often undecorated ware—had been frequently advertised as being affordable and suitable for “country trade” (Majewski and O'Brien 1987:121). By the late 1800s, these thick, heavy ironstones began losing popularity and were often equated with lower socioeconomic status (Collard 1967:13). At the same time, ironstone manufacturers began shifting to thinner, lighter weight ironstones. As a result, this type of ironstone became popular tableware in American homes

during most of the twentieth century (Majewski and O'Brien 1987:124–125). In spite of the shift towards thinner and lighter ironstones, heavy ironstone remained on the market and continues to be contemporarily popular in hotel/restaurant service (hence, this heavy, twentieth-century ironstone is sometimes called “hotelware”). Its production for home use essentially ceased by the second decade of the twentieth century (Lehner 1980:11).

Two ironstone sherds were identified in the assemblage. Both of these were plain sherds.

Porcelain

Porcelain is the name given to high-temperature fired, translucent ware. This ware type was first developed by the Chinese. Chinese, or hard paste, porcelain was introduced to Europe by Portuguese sailors that had traveled to China during the sixteenth century. The formula for true, or feldspathic, porcelain was not discovered in Europe until 1708 and not marketed until 1713 (Boger 1971:266). The production of true porcelain was limited to three factories in England. All other products were softer porcelains made with glass, bone ash, or soapstone. Porcelain made with bone ash, often called “bone china,” became the preferred product after 1800, since the paste was harder and the ware was cheaper to produce with bone than with glass or soapstone (Mankowitz and Haggart 1957:179). Among the more affluent households in Europe and North America, porcelain was a common tableware used during the eighteenth and nineteenth centuries (Fay 1986:69). Porcelain production in America was not successful until 1826, and the number of porcelain factories in the United States remained small throughout the nineteenth century.

In the laboratory, bone china can be differentiated from hard paste porcelain by placing it under ultraviolet light. Bone china fluoresces blue-white, whereas hard paste porcelain fluoresces magenta (Majewski and O'Brien 1987:128). Like pearlware, few undecorated porcelain vessels were

manufactured from the eighteenth through the nineteenth century, or in the previous centuries. However, plain porcelain was manufactured in large quantities in the twentieth century.

Two porcelain fragments were identified in the current assemblage. Both of these were undecorated body sherds.

Container Glass

A total of 188 pieces of container glass were recovered during the current investigations. Research by Baugher-Perlin (1982), Jones and Sullivan (1985), and Toulouse (1971) was used to date glass containers. Glass color was the only attribute that could be used for dating those fragments that were not identifiable as to type of manufacture.

The approximate date of manufacture for bottles and bottle fragments recovered from the project area was established by determining the manufacturing process associated with the bottle (i.e., creation of the base and lip of the container) and using any patent or company manufacturing dates embossed on the bottle.

The lip on a bottle can be informative. A lipping tool, patented in the United States in 1856, shapes the glass rim into a more uniform edge than a hand-smoothed lip or “laid-on ring.” Certain types or styles of lips were associated with specific contents; for example, medicines were often contained in bottles with prescription lips (Jones and Sullivan 1985). A “sheared,” or unfinished, bottle lip typically dates before 1880.

Lipping tools were used throughout the middle to the end of the nineteenth century, until the advent of the fully automatic bottle machine (ABM) in 1903. It should be noted, however, that as automated bottle manufacture became available after the turn of the twentieth century, tooled finishes continued to be produced—albeit in steadily decreasing numbers. That is, there is a lag time between tooled finishes and ABM finishes, and although ABM glass is given a beginning date of manufacture of 1903, most tooled-glass

vessel sherds will be given an ending date around the 1920s due to this lag time, unless other diagnostic characteristics are observed, enabling one to give it an earlier terminal date.

The manufacturing process can be roughly divided into three basic groups: free blown, blown in mold (BIM), and machine manufactured (ABM) vessels (Baugher-Perlin 1982:262–265). Only ABM and unidentified glass fragments were recovered during the current project.

Automatic Bottle Machine (ABM)

The Owens automatic bottle-making machine was patented in 1903 and creates suction scars and distinctive seams that run up the length of the bottle neck and onto the lip. This ABM mold provides a firm manufacturing date at the beginning of the twentieth century. Another automatic bottle machine called the Individual Section was also used in the commercial production of bottles.

The Individual Section machine was widely used starting in 1925 and by 1940 became the most widely used bottle manufacturing device (Jones and Sullivan 1985:39). This bottle machine was more cost effective than the Owens machine, which was no longer used after 1955. Valve marks are indicative of machine-made bottles formed by a press-and-blow type of machine. This mark was formed when the ejection valve rod pushed the partially expanded parison out of the blank mold. When the parison was placed in the second blow mold, the ejection mark was left behind. These marks are typically found on wide mouth ABM bottles, such as food bottles and jars, milk bottles, and canning jars. These marks are usually found on bottles and jars dating from the 1910s to circa 1950, but are most common on wide mouth bottles produced in the 1930s and 1940s (Lindsey 2008; Rock 1980:7). Cup and post molds continued to be used in the ABM industry throughout most of the twentieth century. These were still formed similarly to the earlier BIM method and were not assigned mold-specific manufacturing dates.

Body types manufactured by the ABM method were similar to those earlier manufactured by the BIM process. Enameled labels, also referred to as “applied color labels” or ACLs, represented a permanent label that eventually replaced embossing. Initially, pigments were pressed through printing screens onto the bottle’s surface. One color was applied at a time, and the bottles were then fired to create a permanent adhesion. Some of these early enameled label bottles also exhibit embossing. In the 1950s, an automatic printing machine was invented that would increase printing capacity. These machines used a thermoplastic wax that eliminated the need for drying time in between colors. This process also heated the medium as it was being added to the glass surface. Enameled labeling was popularized circa 1935 (Lindsey 2008). Paper labels were introduced to the bottle industry well before the creation of the automatic bottle machine; therefore, a specific date could not be applied to those bottles or glass sherds exhibiting this label type.

Finishes were formed differently on ABM bottles and jars than on BIM vessels. Unlike BIM vessels, where the finish is formed last, the finish on ABM bottles and jars is formed first. The automatic machines typically held the neck ring and finish before the bottle or jar was expanded to the desired size. The most obvious distinguishing characteristic on an ABM finish compared to a BIM finish is the ABM finishes exhibit machine mold seams that travel up the entire finish of the vessel. ABM vessels also exhibit a horizontal mold seam that circles the vessel neck just below the finish. Thirdly, ABM finishes contain another mold seam at the top of the finish, which encircles the vessel opening (Jones and Sullivan 1985; Lindsey 2008; Toulouse 1969).

Color

Several different glass colors were identified in the assemblage collected during the project. These included amber, amethyst, aqua, blue-green, light green, and colorless glass. Jones and Sullivan (1985) observed that chemicals color glass, either as natural

inclusions or additions by the manufacturer. Although glass color is a relatively obvious descriptive attribute of a historic bottle, it is of limited utility in dating or type casting a bottle.

Amber glass was created from the natural impurities in glass as well as from popular color additives, such as nickel, sulfur, and carbon. Amber glass, because of the many amber variations, dates throughout the nineteenth century; however, amber glass was not widely used until the mid-nineteenth century (Fike 1987:13; Lindsey 2008). According to Lockhart (2006), amethyst glass began to be manufactured around 1870, when manganese was being added to the glass recipe. Although initially colorless, the glass will turn a distinctive purplish color when exposed to sunlight over time. It was previously thought that amethyst glass production ceased by 1914 due to a shortage of manganese from Germany during World War I; however, the change was actually a result of technological advancements in the glass industry, mainly the conversion to the ABM (Lockhart 2006:53).

Although manganese was more difficult to obtain after World War I, and selenium was often less expensive, the improvement in technology was the major reason for the change. Selenium proved to be an inexpensive decolorant in glass production and ultimately displaced manganese as a decolorizer by 1920 (Lockhart 2006:53). Selenium glass exhibits a straw or amber tint in the thickest portions of the glass. This glass color was used in BIM bottles, typically those dating to the 1910s (Faulkner 2000; Lindsey 2008).

Aqua colored glass had many different variations. Aqua glass is a result of the iron impurities found in natural sand. Although sand was available in the eastern United States, some western-American glass factories were importing sand from Belgium. Because aqua glass is one of the most common glass colors in American made bottles, this glass color is not assigned a specific date of manufacture (Lindsey 2008). Light blue and cornflower blue are often grouped into the

aqua glass category. These glass colors are not typically assigned specific dates; however, cornflower blue glass was available as early as 1820 (Jones 2000:147).

Clear or colorless glass was difficult to produce because it required the use of nearly perfect materials. With the public's growing desire to see the contents of the bottles, clear glass came into demand and was popular beginning in the 1860s (Baugher-Perlin 1982:261). However, it should be noted that colorless glass was available to a limited degree before this time. Clear-flint, or leaded, glass was made with lead oxide. This glass color was available to the bottle industry as early as the early nineteenth century and was utilized until the end of the nineteenth century (Lindsey 2008; Pullin 1986:354–355).

Cobalt glass is produced with the addition of the coloring agent cobalt oxide to the glass batch (Lindsey 2008). The introduction of what Lindsey (2008) calls “true blue” glass began in 1840 with the production of soda, mineral water, and ink bottles. Opaque white glass, also referred to as milk glass, was produced with the addition of tin or zinc oxide and phosphates to the glass recipe. Opaque white glass was used for a variety of different bottle types, including most commonly cosmetic and toiletry bottles dating from 1870 to 1920. This glass type was noted as early as 1830 and continued to be used until circa 1960 (Husfloen 1992:163; Lindsey 2008).

Green glass is found in more shades than any other glass color. These colors include, but are not limited to, light green, olive green, blue-green, and yellow-green. Green glass was produced by using the coloring agents iron, chromium, and copper. Many shades of green glass do not have diagnostic dates, since they have been used for many centuries in glass production and continue in popularity today. Emerald green or bright glass was introduced in the mid-nineteenth century (Fike 1987:13; Lindsey 2008).

Seven fragments of ABM-manufactured glass were identified in the assemblage. Four of these fragments were manufactured of colorless glass. In addition, one amber, one

cobalt, and one green glass fragment were also recovered.

Undiagnostic Container Glass

When no other diagnostic features were present, the color of the glass was noted, although there is some subjectivity inherent in color classification. The concern for the current study was primarily to note the presence of datable glass. A total of 181 undiagnostic container glass fragments were identified in the assemblage. These included 16 amber, 2 amethyst, 1 blue-green, 147 colorless, 1 green, 7 light green, 1 olive green, and 6 opaque white fragments.

Glass Tableware

Press molding was first used (although on a very small scale) in England in the late seventeenth century to make small solid glass objects, such as watch faces and imitation precious stones (Buckley 1934). By the end of the eighteenth century, decanter stoppers and glass feet for objects were also being produced (Jones and Sullivan 1985). The production of complete hollowware glass objects did not become possible until there were innovations in press-molded techniques in the United States during the late 1820s (Watkins 1930). Mass production of press-molded glassware was well established by the 1830s (Watkins 1930).

Earlier press-molded glass objects were predominantly made of colorless lead glass (Jones and Sullivan 1985). William Leighton of the Hobbs-Brockunier Glass Works in Wheeling, West Virginia, invented lime glass. This type of glass looked like lead glass, had superior pressing attributes, and was much more inexpensive than lead glass (Revi 1964). Advancements in mold technology in the 1860s and 1870s led to the application of steam-powered mold operation. This in turn led to increased production and reduced costs (Revi 1964). Modern press molding is conducted entirely by machine (Jones and Sullivan 1985).

Press-molded table glass was made by dropping hot pieces of glass into a mold. A plunger was then forced into the mold,

pressing the hot glass against it. The outer surface of the glass took on the form of the mold, while the inner surface of the glass was shaped by the plunger. The plunger was withdrawn, and the glass object was removed from the mold. The surface of the glass was often fire polished to restore the brilliance of the glass surface that was disturbed by its contact with the mold (Jones and Sullivan 1985).

Press-molded glass may be recognized by several characteristics. Usually, the glass object must be open-topped in order for the plunger to be withdrawn from the mold. Narrow mouthed vessels were produced, but additional manipulation of the glass was necessary after the plunger was removed from the mold. Evidence of this manipulation should be present on the vessel (Jones and Sullivan 1985). There is no relationship between the exterior shape and design of a press-molded vessel to the interior shape and design because the plunger shapes the interior of the object, most often leaving behind a smooth surface. This differs from earlier glass vessel production techniques like blown glassware, where interior shape was related to the exterior shape and design (Jones and Sullivan 1985).

Another characteristic of press-molded containers was that mold seams were generally present. The seams were sharp and distinct, unless steps had been taken to deliberately remove them. The texture of the glass surface of press-molded glass was disturbed and often disguised by an all-over stipple design. The edges of the designs on press-molded glass had a predisposition toward rounded edges. The bases of press-molded objects were usually polished. The quality of the designs on press-molded glassware was precise, and the design motifs were numerous (Jones and Sullivan 1985).

In contrast to press-molded glass, cut glass generally had a polished, smooth, and glossy surface texture. The design edges were sharp and distinct. Cut glass designs consisted mostly of panels, flutes, and miters. The designs were often slightly uneven and

asymmetrical. Mold seams were usually absent, being polished off prior to cutting (Jones and Sullivan 1985). Contact-molded glass also differs from press-molded glass in that the exterior and interior of the vessel will portray parallel patterns. The interior of the vessel is also generally much more diffuse towards the base. Pattern molding was also occasionally found on glass tableware vessels. This mold type was performed in the same way that it was performed on blown-in-mold glass. Free-blown glass tableware was the first type of glass tableware to be created and, therefore, cannot be assigned a specific period of manufacture.

From the late 1870s onward, the principal type of mold used appears to have been optic molding, although some contact molding was still used in glass tableware production (Jones 2000:157). Optic molding is a technique in which the glass is blown into a patterned mold before being transferred to a full-size undecorated mold and blown. This causes the pattern, usually consisting of panels, ribs, or circular protrusions, to be transferred to the interior of the object (Jones 2000:160). The major use of this technique in glass tableware dates from the 1880s into the twentieth century, when it was used primarily for drinking glasses and mugs.

Glass tableware was decorated in numerous ways. Decorative techniques included applied color, acid etching, painting, engraving, wheel etching, iridescent, heat treating, gilding, and flashing. Glass tableware with applied color decoration is also referred to as enameled tableware. Enameling on tableware was produced much in the same way as in bottle manufacturing; however, enameled tableware appears much earlier. Vitreous colors were mixed with an adhesive, and after application to the glass surface, the vessel was reheated, fusing the color to the glass. Enameling was popular on glass tableware from the 1880s through the twentieth century (Jones 2000:150).

Wheels and abrasives were used to engrave glass tableware. Wheel engraving, also referred to as wheel etching, allowed for a

greater variety of motifs to be cut and often accommodated thin glass. Engraving can be found on pieces of glass tableware dating prior to the early nineteenth century (Jones 2000:177). Acid etching was performed by coating a glass object with a hydrofluoric acid resistant compound. The glass was then placed in an acid bath. Once removed from the bath, the resist was removed, and the glass was polished, frosted, textured, or etched. This process was originally introduced in the eighteenth century (Jones 2000:182). Painting on glass tableware was generally rare.

Iridescent glass tableware was introduced in the 1870s, although years would pass before this glass type was available commercially. It was produced by exposing hot glass to metallic chlorides, producing an iridescent color overlay. This decoration was used on pressed glass beginning in 1905 and was referred to as “carnival glass” (Jones 2000:151). Heat sensitive, or heat treated, glass tableware was introduced in the 1880s. This category of glass tableware contains a few different heat treatments. The first heat treatment involves glass batches containing ingredients that when heated, cooled, and reheated would change the color of the glass at its thickest points. Hobnails, often found in glass tableware, were the most popular result of this heat treatment. Cased or flashed glass was the other result of heat treatments. This treatment involved the layering of glasses using hot glass. This glass type usually refers to a thin layer of colored glass placed over a thicker layer of colorless glass (Jones 2000:148–149). Gilding was performed by applying a layer of gold leaf, gold paint, or gold dust to the glass surface. This treatment was then fired or unfired. Unfired gilding does not preserve well and was used for cheaply decorated wares circa 1890 (Jones 2000:150). Opaque blue, green, and yellow glasses were introduced in the 1870s (Jones 2000:147).

Three fragments of glass tableware were identified in the assemblage. These pieces were all unidentified fragments and included two that were made of colorless glass and one that was light green glass.

Other Tableware

One thin fragment of moderately curved yellow plastic was also recovered. Possibly representing a plate fragment, this artifact did not display any diagnostic features and could not be definitively dated to a specific temporal period.

Furnishings Group

The furnishings category includes artifacts usually associated with the home or building that are not elements of the actual construction. Examples of furnishings include decorative elements, flooring, furniture, heating, lighting, and window and wall decorations. The single furnishings group item collected was what appears to be a small colorless glass fragment, possibly from a lamp chimney or light bulb.

Personal Group

The personal group includes artifacts assumed to have belonged to individuals. This category of artifacts includes health and grooming items, jewelry and beads, coins, music and art items, personal items, toys, and games. The one artifact recovered in this category was a small fragment of a vinyl record.

Maintenance and Subsistence Group

The maintenance and subsistence group contains artifacts related to general maintenance activities. These artifacts are grouped into classes containing nonfood cans, nonfood containers, electrical, farming and gardening, stable and barn activities, general hardware, general tools, transportation, and fuel-related items, such as coal. One artifact associated with the transportation class was identified during this analysis.

Transportation

This class of artifacts includes various parts associated with engines, automobiles, railroads, wagons, carriages, and other modes

of transportation. The single identified item was a railroad spike.

Unidentified

This category contains artifacts that could not be identified beyond the material from which the artifact was made. Within the current assemblage, there were five material classes included within this group of artifacts. These material classes included glass, metal, ceramic, rock, and indeterminate.

Thirty artifacts were classified as unidentified. These included 2 ceramic, 12 glass, 11 metal, one pumice-like material, and 4 artifacts whose material could not be identified.

Discussion

A total of 316 historic artifacts and 2 prehistoric artifacts were recovered from the Holly Ridge Northwest tract during the current investigation. The material collected is discussed in detail above, and a brief discussion by site is provided below. A complete inventory of the recovered historic artifacts can be found in Appendix A, and a full discussion of each site is provided in the *Results* chapter.

Site 16RI305 Summary

The artifact assemblage for Site 16RI305 included 63 artifacts. The majority of items were domestic group artifacts, including 7 pieces of whiteware, 40 pieces of container glass, and 1 plastic tableware fragment. The remaining artifacts included 1 fragment of asbestos siding or roofing, 9 window glass fragments, 1 indeterminate nail fragment, 1 vinyl record fragment, and 3 unidentified artifacts whose function could not be determined. The majority of the recovered artifacts could not be definitively assigned to any specific temporal period, with the nail fragment being too corroded for its method of manufacture to be determined and the historic ceramic fragments being only broadly datable to the nineteenth and/or twentieth centuries. However, 2 container glass fragments formed in an automatic bottling machine could be

dated to the twentieth century, corresponding to the Industrial & Modern period.

A structure is depicted at the site location on the 1958 Baskinton, Louisiana, 15-minute series USGS topographic quadrangle (see Figure 3.3). This structure is no longer depicted on the 1987 Bee Bayou, Louisiana, 7.5-minute series USGS topographic quadrangle (USGS 1958, 1987). Since no other structures are depicted or visible at the site location on any other quadrangles or aerial photographs, it is most likely that Site 16RI305 represents the remains of the structure depicted on the 1958 Baskinton quadrangle. The high proportion of domestic artifacts indicates that the historic structure represented by Site 16RI305 was utilized as a residence.

Site 16RI313 Summary

Sixty-eight artifacts were included in this site assemblage. The majority of items were domestic group artifacts, including 1 piece of ironstone, 1 piece of porcelain, 13 pieces of whiteware, 34 pieces of container glass, and 2 undiagnostic pieces of glass tableware. The remaining artifacts included 7 pieces of window glass, 1 undiagnostic nail, 1 colorless piece of lamp chimney or light bulb glass, 7 unidentified artifacts whose function could not be determined, and 1 partial prehistoric dart point that was found on the surface roughly 20 m (66 ft) northwest of the site datum. Though the single piece of porcelain suggested perhaps an earlier date, the majority of the historic ceramic fragments could only be broadly dated to the nineteenth and/or twentieth centuries. None of the other historic artifacts could be definitively assigned to any specific temporal period.

The single recovered prehistoric artifact was a thermally-altered partial dart point that displayed no temporally diagnostic features. No definitive interpretations are possible with such a small assemblage, but the lack of additional prehistoric artifacts suggests that the prehistoric component of Site 16RI313 is likely to have only been occupied during a single archaeological period for a short duration, possibly only for specialized tasks.

The recovered artifact did not provide any clues as to the timing of the site occupation, however.

A structure is depicted at the site location on the 1958 Baskinton, Louisiana, 15-minute series USGS topographic quadrangle (see Figure 3.3). This structure is no longer depicted on the 1987 Bee Bayou, Louisiana, 7.5-minute series USGS topographic quadrangle (USGS 1958, 1987). Since no other structures are depicted or visible at the site location on any other quadrangles or aerial photographs, it is most likely that the historic portion of the Site 16RI313 assemblage represents the remains of the structure depicted on the 1958 Baskinton quadrangle. The high proportion of domestic artifacts indicates that the historic structure represented by Site 16RI313 was utilized as a residence.

Site 16RI314 Summary

The artifact assemblage for Site 16RI314 included 21 artifacts. The majority of recovered items were domestic artifacts, including 3 undecorated whiteware fragments and 15 pieces of container glass. The remaining artifacts included 1 piece of window glass and 2 unidentified artifacts whose function could not be determined. The historic ceramic fragments could only be broadly dated to the nineteenth or twentieth century, but one fragment of amethyst container glass and one fragment of container glass formed in an automatic bottling machine indicate that the site dates to the early twentieth century, corresponding to the Industrial & Modern period. None of the other artifacts could be definitively assigned to any specific temporal period.

No architectural materials other than the single fragment of window glass were recovered from the site, and no historic structures are depicted at the site location on any of the available USGS topographic quadrangles. Therefore, despite the presence of domestic artifacts, there is no indication that Site 16RI314 represents the remains of a historic residence, and the site function cannot be determined.

Site 16RI315 Summary

The artifact assemblage for Site 16RI315 included five artifacts. The majority of these artifacts were part of the domestic group, including one piece of undecorated whiteware and three pieces of undiagnostic container glass. In addition to the domestic items, one indeterminate nail fragment was recovered. The historic ceramic fragment could only be broadly dated to the nineteenth or twentieth century. None of the other artifacts could be definitively assigned to any specific temporal period, with the nail fragment being too corroded for its method of manufacture to be determined.

No historic structures are depicted at the site location on any of the available USGS topographic quadrangles. Despite the presence of a small quantity of domestic artifacts and a single nail fragment, there is no strong indication that Site 16RI315 represents the remains of a historic residence, and the site function cannot be determined.

Site 16RI316 Summary

The artifact assemblage for Site 16RI316 included 33 artifacts. The majority of recovered items were domestic artifacts, including 6 pieces of whiteware, 22 pieces of container glass, and 1 undiagnostic piece of glass tableware. The remaining artifacts included 1 piece of window glass, 1 undiagnostic nail, and 2 unidentified artifacts whose function could not be determined. The historic ceramic fragments could only be broadly dated to the nineteenth or twentieth century. None of the other artifacts could be definitively assigned to any specific temporal period, with the nail fragment being too corroded for its method of manufacture to be determined.

A structure is depicted at the site location on the 1958 Baskinton, Louisiana, 15-minute series USGS topographic quadrangle (see Figure 3.3). This structure is no longer depicted on the 1987 Bee Bayou, Louisiana, 7.5-minute series USGS topographic quadrangle (USGS 1958, 1987). Since no other structures are depicted or visible at the

site location on any other quadrangles or aerial photographs, it is most likely that the Site 16RI316 assemblage represents the remains of the structure depicted on the 1958 Baskinton quadrangle. The high proportion of domestic artifacts indicates that the historic structure represented by Site 16RI316 was utilized as a residence.

Site 16RI317 Summary

A total of 82 artifacts were recovered from Site 16RI317. The majority of the artifacts were from the domestic group, and included one whiteware fragment and 50 pieces of container glass. The remaining artifacts included 2 brick fragments, 1 fragment of ceramic tile, 1 mortar fragment, 5 pieces of a stoneware water pipe, 10 pieces of flat glass, 2 wire nails, 1 unidentified nail fragment, and 9 unidentified artifacts whose function could not be determined. The presence of wire nails and one fragment of container glass formed in an automatic bottling machine indicates that the site dates to the late nineteenth and/or early twentieth centuries, corresponding to the Industrial & Modern period. None of the other artifacts could be definitively assigned to any specific temporal period.

Two structures are depicted at the site location on the 1958 Baskinton, Louisiana, 15-minute series USGS topographic quadrangle (see Figure 3.3). Both of these structures are no longer depicted on the 1987 Bee Bayou, Louisiana, 7.5-minute series USGS topographic quadrangle (USGS 1958, 1987). Since no other structures are depicted or visible at the site location on any other quadrangles or aerial photographs, it is most likely that the Site 16RI317 assemblage represents the remains of the structures depicted on the 1958 Baskinton quadrangle. The high proportion of domestic artifacts indicates that at least one of the historic structures represented by Site 16RI317 was utilized as a residence.

Site 16RI318 Summary

Approximately 10–15 fragments of undiagnostic container glass and metal were observed in a low-density surface scatter at

Site 16RI318, but only artifacts recovered from shovel tests were collected during the current investigation. These recovered materials consist of four artifacts, including three undiagnostic container glass fragments and one fragment of indeterminate metal. None of these artifacts could be definitively assigned to any specific temporal period.

No architectural materials were recovered from the site, and no historic structures are depicted at the site location on any of the available USGS topographic quadrangles. Therefore, despite the presence of a small quantity of domestic artifacts, there is no indication that Site 16RI318 represents the remains of a historic residence, and the site function cannot be determined.

Site 16RI319 Summary

The artifact assemblage for Site 16RI319 included 18 artifacts. The majority of these artifacts were part of the domestic group, including 1 ironstone and 1 whiteware fragment along with 11 pieces of undiagnostic container glass. The remaining artifacts consisted of 3 pieces of window glass and 2 unidentified artifacts whose function could not be determined. The historic ceramic fragments could only be broadly dated to the nineteenth or twentieth century. None of the other artifacts could be definitively assigned to any specific temporal period.

A structure is depicted roughly 65 m (213 ft) southeast of the site datum on the 1958 Baskinton, Louisiana, 15-minute series USGS topographic quadrangle (see Figure 3.3). This structure or one in the same location is also depicted on the 1987 Bee Bayou, Louisiana, 7.5-minute series USGS topographic quadrangle (USGS 1958, 1987). Though the structure is not visible in historical Google Earth aerial views, a patch of woods occupying its approximate location can be seen in aerial views from 1998, 2004, and 2005. In aerial views from 2006 and later, the patch of woods is no longer present and the area of the structure is occupied by agricultural fields. Since no other structures are depicted or visible near the site location on any other quadrangles or aerial photographs, it

is most likely that the Site 16RI319 assemblage represents the remains of the structure first depicted on the 1958 Baskinton quadrangle (or a later structure that occupied the same location). The high proportion of domestic artifacts indicates that the historic structure represented by Site 16RI319 was utilized as a residence.

Site 16RI320 Summary

The Site 16RI320 assemblage included seven artifacts. These materials included four pieces of container glass and three nails (one cut, one wire and one unidentified). The majority of the recovered artifacts could not be definitively assigned to any specific temporal period, but the wire nail and one container glass fragment formed in an automatic bottling machine could be dated to the late nineteenth and/or twentieth century, corresponding to the Industrial & Modern period.

No historic structures are depicted at, or visible in, the site location on any of the available USGS topographic quadrangles or Google Earth aerial views. Therefore, despite the presence of a small quantity of domestic artifacts and several nails, there is no strong indication that Site 16RI320 represents the remains of a historic residence, and the site function cannot be determined.

Isolated Finds

The isolated finds recorded in the Holly Ridge Northwest tract consisted of a total of 17 artifacts (1 prehistoric and 16 historic) collected in 10 discrete locations. Table 5.4 provides a summary of these materials. A full discussion of the isolated finds is provided in Chapter 6 below.

Table 5.4. Summary of Isolated Find Data.

Isolated Find	Total
IF 1	
Archaic dart fragment	1
IF 12	
Domestic Group Container Glass Undiagnostic container fragment	1
IF 13	
Architectural Group Flat Glass Window Glass Domestic Group Container Glass Undiagnostic container fragment	1
IF 14	
Domestic Group Ceramics Whiteware Unidentified Glass Amorphous	1
IF 15	
Domestic Group Ceramics Porcelain: hard paste	1
IF 16	
Domestic Group Container Glass Undiagnostic container fragment	3
IF 17	
Unidentified Metal Iron / Steel	1
IF 18	
Transportation Railroad Railroad spike	1
IF 19	
Architectural Group Flat Glass Window Glass Domestic Group Container Glass Undiagnostic container fragment	2
IF 20	
Unidentified Glass Indeterminate	2
Total	17

Chapter 6. Results

The fieldwork portion of this project consisted of a combination of pedestrian survey and shovel testing. Surface visibility was generally excellent throughout the survey area, since the vast majority of the project area consisted of open agricultural fields with virtually 100 percent visibility. However, in those small portions of the survey area vegetated with secondary forest, surface visibility was generally moderate to poor due to understory vegetation, grass cover, and/or leaf litter. Field investigation resulted in the location of eight new archaeological sites (16RI313–16RI320), the relocation of 1 previously recorded archaeological site (16RI305), and the recordation of 10 isolated finds (IF 1, IF 12–IF 20). In addition, the locations of two archaeological sites (16RI303 and 16RI304) previously recorded in the project area were revisited, but the sites could not be relocated. The results of the investigations at each of the sites and isolated finds are presented in this chapter.

Site 16RI303

Field Site Number: N/A
UTM Coordinates:
Site Center and Photo Location: 15N, N3592864 E628849 (NAD 83)
Quadrangle Map: Bee Bayou, Louisiana, 7.5-minute
Elevation: 25 m (81 ft) AMSL
Components: historic
Specific Components: Industrial & Modern (1890–)
Site Type: unknown
Size: 20 m (66 ft) N–S x 20 m (66 ft) E–W
Distance/direction to nearest water: unnamed tributary of Cypress Creek, 245 m (804 ft) east
Type and extent of previous disturbance: extensive disturbance from agricultural activities
Topography: level
Vegetation: young corn at time of survey (agricultural field)
Ground surface visibility: nearly 100 percent; site located in open agricultural field

Recommended NRHP status: not eligible

Site Description

Site 16RI303 was originally recorded in January of 2014 during a pedestrian walkover by R. Christopher Goodwin & Associates, Inc., personnel. The site consisted of a low-density circular surface scatter of glass, historic ceramic and plastic fragments measuring roughly 20 m (66 ft) in diameter. No subsurface testing was conducted at the time of the initial visit; additional survey, including systematic surface collection and mapping of the site, was recommended.

As revisited during the current project, the location of Site 16RI303 is situated in an agricultural field in north central Richland Parish, Louisiana, approximately 240 m (787 ft) south of US 80 and 150 m (492 ft) west of LA 183. The site lies in a generally level, slightly undulating agricultural field, roughly 245 m (804 ft) west of an unnamed tributary of Cypress Creek. The entire site area was covered by east–west trending ridges approximately 1 m (3 ft) in width and 10–20 cm (4–8 in) in height at the time of the survey, which were the result of previous plowing activities in the site area. The site area was planted with young corn at the time of the survey.

Site 16RI303 could not be relocated during the current survey. None of the shovel tests excavated in the vicinity of the site were positive for cultural material, and no artifacts of any kind were observed on the surface in the site area, despite excellent surface visibility. The nearest surface artifacts and positive shovel tests to Site 16RI303 that were recorded during the current project are located at Site 16RI314, roughly 55 m (180 ft) to the north.

Investigation Methods

One transect shovel test (53-14) was excavated within the previously recorded footprint of Site 16RI303 but was negative for

cultural material. Following these negative results, an intensive pedestrian survey was conducted at the site location. Despite excellent surface visibility, no cultural material was observed on the surface in the site area.

Photographs were taken at the site location (Figure 6.1), and a locational data point was collected with a Trimble GeoXT GPS unit at the point where the photos were taken.

Depositional Context

Profiles observed in the vicinity of Site 16RI303 were generally similar to that of Deerford silt loam, which is mapped throughout the site area. The profile of transect shovel test 53-14 consisted of a yellowish brown (10YR 5/4) silt loam Ap horizon from 0 to 25 cm (0 to 10 in) below ground surface (bgs), overlying a grayish brown (10YR 5/2) silt loam E horizon from 25 to 36 cm (10 to 14 in) bgs. The E horizon also contained mottles of light gray (10YR 6/1)

silty clay loam. The presence of a well-defined plow zone in the profiles of shovel test 53-14 and all other nearby shovel tests indicated that the entire site area had been significantly disturbed by agricultural activities.

Artifacts

Site 16RI303 could not be relocated. Despite excellent surface visibility, no artifacts of any kind were observed anywhere in the site's vicinity. The nearest surface artifacts and positive shovel tests to Site 16RI303 that were recorded during the current project are located at Site 16RI314, roughly 55 m (180 ft) to the north.

Summary and National Register Evaluation

No historic structures are depicted at the location of Site 16RI303 on any of the available USGS topographic quadrangles. Therefore, despite the observation of a quantity of domestic artifacts at the site location in 2014, there is no strong indication



Figure 6.1. Overview of Site 16RI303 location, facing south.

that Site 16RI303 represents the remains of a historic residence, and the site function cannot be determined. No artifacts of any kind were recovered during the current project, and no features or intact cultural midden deposits were observed at Site 16RI303.

The current negative investigations at Site 16RI303 indicate that this resource must contain a very low density of subsurface remains compared with the other sites investigated in this study. Additionally, both the current investigation and the initial 2014 site visit indicate that the site area has experienced significant disturbance from agricultural activities, and any remaining deposits would retain little integrity. Because of these factors, Site 16RI303 is thought to have a low potential to provide further information on the historic inhabitants of the region. No further work is recommended, and the site is recommended not eligible for listing in the NRHP.

Site 16RI304

Field Site Number: N/A

UTM Coordinates:

Site Center and Photo Location: 15N, N3592869 E628776 (NAD 83)

Quadrangle Map: Bee Bayou, Louisiana, 7.5-minute

Elevation: 25 m (82 ft) AMSL

Components: historic

Specific Components: Industrial & Modern (1890–)

Site Type: unknown

Size: 20 m (66 ft) N–S x 20 m (66 ft) E–W

Distance/direction to nearest water: unnamed tributary of Cypress Creek, 325 m (1,066 ft) east

Type and extent of previous disturbance: extensive disturbance from agricultural activities

Topography: level

Vegetation: young corn at time of survey (agricultural field)

Ground surface visibility: nearly 100 percent; site located in open agricultural field

Recommended NRHP status: not eligible

Site Description

Site 16RI304 was also originally recorded in January of 2014 during a pedestrian walkover by R. Christopher Goodwin & Associates, Inc., personnel. The site consisted at that time of a low-density circular surface scatter of historic ceramic and glass fragments measuring roughly 20 m (66 ft) in diameter. No subsurface testing was conducted at the time of the initial visit, and additional survey including systematic surface collection and mapping of the site was recommended.

As revisited during the current project, the location of Site 16RI304 is situated in an agricultural field in north central Richland Parish, Louisiana, approximately 245 m (804 ft) south of US 80 and 225 m (738 ft) west of LA 183. The site lies in a generally level, slightly undulating agricultural field, roughly 325 m (1,066 ft) west of an unnamed tributary of Cypress Creek. The entire site area was covered by east–west trending ridges approximately 1 m (3 ft) in width and 10–20 cm (4–8 in) in height at the time of the survey, which were the result of previous plowing activities in the site area. The site area was planted with young corn at the time of the survey.

Site 16RI304 could not be relocated during the current survey. None of the shovel tests excavated in the vicinity of the site were positive for cultural material, and no artifacts of any kind were observed on the surface in the site area, despite excellent surface visibility. The nearest surface artifacts and positive shovel tests to Site 16RI304 that were recorded during the current project are located at Site 16RI314, roughly 45 m (148 ft) to the north.

Investigation Methods

One transect shovel test (53-12) was excavated within the previously recorded footprint of Site 16RI304 but was negative for cultural material. Following these negative results, an intensive pedestrian survey was conducted at the site location. Despite excellent surface visibility, no cultural

material was observed on the surface in the site area.

Photographs were taken at the site location (Figure 6.2), and a locational data point was collected with a Trimble GeoXT GPS unit at the point where the photos were taken.

Depositional Context

Profiles observed in the vicinity of Site 16RI304 were generally similar to that of Gigger silt loam, which is mapped throughout the site area. The profile of transect shovel test 53-12 consisted of a yellowish brown (10YR 5/4) silt loam Ap horizon from 0 to 19 cm (0 to 7 in) bgs, overlying a yellowish brown (10YR 5/6) silty clay loam Bt1 horizon from 19 to 35 cm (7 to 14 in) bgs. The presence of a well-defined plow zone in the profiles of test 53-12 and all other nearby shovel tests indicated that the entire site area had been significantly disturbed by agricultural activities.

Artifacts

Site 16RI304 could not be relocated. Despite excellent surface visibility, no artifacts of any kind were observed anywhere in the site's vicinity. The nearest surface artifacts and positive shovel tests to Site 16RI304 that were recorded during the current project are located at Site 16RI314, roughly 45 m (148 ft) to the north.

Summary and National Register Evaluation

No historic structures are depicted at the location of Site 16RI304 on any of the available USGS topographic quadrangles. Therefore, despite the observation of a quantity of domestic artifacts at the site location in 2014, there is no strong indication that Site 16RI304 represents the remains of a historic residence, and the site function cannot be determined. No artifacts of any kind were recovered during the current project, and no features or intact cultural midden deposits were observed at Site 16RI304.



Figure 6.2. Overview of Site 16RI304 location, facing north.

The current negative investigations at Site 16RI304 indicate that this resource could contain a very low density of subsurface remains compared with the other sites investigated during the survey. Additionally, both the current investigation and the initial 2014 site visit indicate that the site area has experienced significant disturbance from agricultural activities, and any remaining deposits would retain little integrity. Because of these factors, Site 16RI304 is thought to have a low potential to provide further information on the historic inhabitants of the region. No further work is recommended, and the site is recommended not eligible for listing in the NRHP.

Site 16RI305

Field Site Number: N/A

UTM Coordinates:

Grid Origin: 15N, N3592646 E628913 (NAD 83)

Site Center: 15N, N3592660 E628904 (NAD 83)

Quadrangle Map: Bee Bayou, Louisiana, 7.5-minute

Elevation: 24 m (80 ft) AMSL

Components: historic

Specific Components: Industrial & Modern (1890–)

Site Type: historic residence

Size: 53 m (174 ft) N–S x 72 m (236 ft) E–W

Distance/direction to nearest water: unnamed tributary of Cypress Creek, 110 m (361 ft) east

Type and extent of previous disturbance: extensive disturbance from agricultural activities

Topography: level

Vegetation: none (fallow agricultural field)

Ground surface visibility: nearly 100 percent; site located in open agricultural field

Recommended NRHP status: not eligible

Site Description

Site 16RI305 was originally recorded in January of 2014 during a pedestrian walkover by R. Christopher Goodwin & Associates, Inc., personnel. The site consisted at that time of a dense circular surface scatter of glass, historic ceramic, metal, and plastic fragments

measuring 22 m (72 ft) in diameter. No subsurface testing was conducted at the time of the initial visit, and full delineation and mapping of the site was recommended.

As revisited during the current survey, Site 16RI305 is located in an agricultural field in north central Richland Parish, Louisiana. It is situated approximately 455 m (1,493 ft) south of US 80 and 90 m (295 ft) west of LA 183. The site lies in a generally level, slightly undulating agricultural field on the south side of an unpaved field road, roughly 110 m (361 ft) west of an unnamed tributary of Cypress Creek. With the exception of small portions near the site's northern boundary that were occupied by the unpaved field road, the entire site area was covered by east–west trending ridges approximately 1 m (3 ft) in width and 10–20 cm (4–8 in) in height at the time of the survey, the result of previous plowing activities in the site area. However, the agricultural field was fallow at the time of the survey (Figure 6.3). Site 16RI305 was encountered through shovel testing and the observation of a surface artifact scatter.

Investigation Methods

Site 16RI305 was originally recorded through the excavation of a single positive transect shovel test (32-1). This shovel test was assigned an arbitrary coordinate of N1000 E1000, and all delineation shovel tests that were subsequently excavated at the site were assigned coordinates based on their position relative to this shovel test. Delineation shovel tests were excavated at 10 m (33 ft) intervals.

In total, 36 shovel tests were used to delineate the site boundaries, 13 of which were positive for cultural material and 23 of which were negative. Maximum site dimensions were 53 m (174 ft) north–south and 72 m (236 ft) east–west. The project area boundary forms portions of the site's eastern and southern boundaries, and the site's surface scatter visibly extends further in these directions. Ground surface visibility was excellent, and a moderate to high density surface artifact scatter was also observed in



Figure 6.3. Overview of Site 16RI305 from datum, facing north.

the site area. Locational data points collected with a Trimble GeoXT GPS unit at Site 16RI305 include the site datum (grid position N1000 E1000) and the site boundary. A site sketch map was drawn showing the placement of the shovel test positions in relation to physiographic features (Figure 6.4).

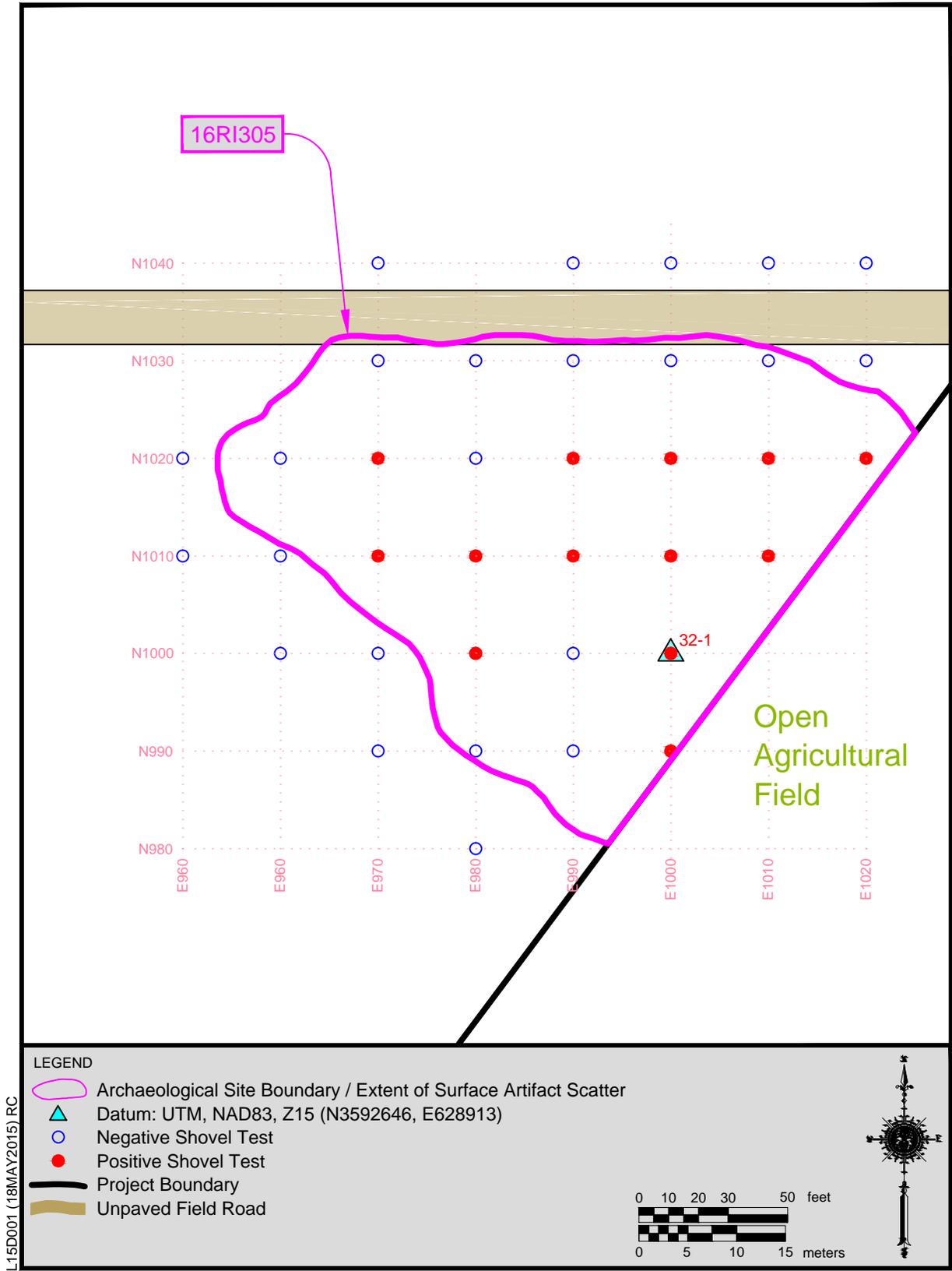
Depositional Context

Profiles observed at Site 16RI305 were generally similar to that of Gilbert silt loam, which is mapped throughout the site area. A typical profile, taken from shovel test N1010 E990, consisted of a brown (10YR 5/3) silt loam Ap horizon from 0 to 20 cm (0 to 8 in) bgs, overlying a grayish brown (10YR 5/2) silty clay loam Eg horizon from 20 to 40 cm (8 to 16 in) bgs. The Eg horizon also contained mottles of yellowish brown (10YR 5/6) silty clay loam. Artifacts were recovered from an average depth of 9 cm (4 in) bgs with a maximum recovery depth of 35 cm (14 in) bgs. The presence of a well-defined plow zone in the profiles of all tests and the shallow

recovery depth of the vast majority of artifacts indicated that the entire site area had been significantly disturbed by agricultural activities.

Artifacts

A total of 63 artifacts were recovered from Site 16RI305 during the current investigation, including 7 pieces of whiteware, 40 pieces of container glass, 1 plastic tableware fragment, 1 fragment of asbestos siding or roofing, 9 window glass fragments, 1 indeterminate nail fragment, 1 vinyl record fragment, and 3 unidentified artifacts whose function could not be determined (Table 6.1). The majority of the recovered artifacts could not be definitively assigned to any specific temporal period, with the nail fragment being too corroded for its method of manufacture to be determined and the historic ceramic fragments being only broadly datable to the nineteenth and/or twentieth centuries.



L15D001 (18MAY2015) RC

Figure 6.4. Schematic plan map of Site 16RI305.

Table 6.1. 16RI305 Artifact Recovery by Provenience.

Site	Unit #	Depth	Group	Class	Type	Total
16RI305	STP N1000 E980	0-10 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI305	STP N1010 E1000	0-22 cm bgs	Architecture	Construction Material	Asbestos	1
16RI305	STP N1010 E1000	0-22 cm bgs	Architecture	Flat Glass	Window Glass	1
16RI305	STP N1010 E1000	0-22 cm bgs	Domestic	Ceramics	Whiteware	3
16RI305	STP N1010 E1000	0-22 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	16
16RI305	STP N1010 E970	0-10 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI305	STP N1010 E980	0-21 cm bgs	Domestic	Container Glass	Automatic Bottling Machine	1
16RI305	STP N1010 E980	0-21 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	2
16RI305	STP N1010 E990	0-20 cm bgs	Domestic	Ceramics	Whiteware	1
16RI305	STP N1010 E990	0-20 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	10
16RI305	STP N1020 E1000	0-10 cm bgs	Architecture	Flat Glass	Window Glass	1
16RI305	STP N1020 E1000	0-10 cm bgs	Domestic	Ceramics	Whiteware	1
16RI305	STP N1020 E1000	0-10 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI305	STP N1020 E1000	10-20 cm bgs	Architecture	Flat Glass	Window Glass	1
16RI305	STP N1020 E1000	20-35 cm bgs	Personal	Music and Art	Phonograph Record	1
16RI305	STP N1020 E1010	0-10 cm bgs	Architecture	Flat Glass	Window Glass	2
16RI305	STP N1020 E1010	0-10 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI305	STP N1020 E1010	0-10 cm bgs	Unidentified	Glass	Indeterminate	1
16RI305	STP N1020 E1010	0-10 cm bgs	Unidentified	Glass	Other	1
16RI305	STP N1020 E1020	0-21 cm bgs	Architecture	Flat Glass	Window Glass	1
16RI305	STP N1020 E1020	0-21 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	2
16RI305	STP N1020 E970	0-10 cm bgs	Architecture	Flat Glass	Window Glass	2
16RI305	STP N1020 E970	0-10 cm bgs	Architecture	Nails	Indeterminate Cut / Wrought Nail	1
16RI305	STP N1020 E970	10-20 cm bgs	Domestic	Ceramics	Whiteware	1
16RI305	STP N1020 E970	10-20 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	2
16RI305	STP N1020 E990	0-18 cm bgs	Domestic	Container Glass	Automatic Bottling Machine	1
16RI305	STP N990 E1000	0-10 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI305	STP N990 E1000	0-10 cm bgs	Unidentified	Metal	Iron / Steel	1
16RI305	STP TR 32-1	0-20 cm bgs	Architecture	Flat Glass	Window Glass	1
16RI305	STP TR 32-1	0-20 cm bgs	Domestic	Ceramics	Whiteware	1
16RI305	STP TR 32-1	0-20 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI305	STP TR 32-1	0-20 cm bgs	Domestic	Other Tableware	Tableware (non-glass)	1
Total						63

However, two container glass fragments formed in an automatic bottling machine could be dated to the twentieth century, corresponding to the Industrial & Modern period.

A structure is depicted at the site location on the 1958 Baskinton, Louisiana, 15-minute series USGS topographic quadrangle (see Figure 3.3). This structure is no longer depicted on the 1987 Bee Bayou, Louisiana, 7.5-minute series USGS topographic quadrangle (USGS 1958, 1987). Since no other structures are depicted or visible at the site location on any other quadrangles or aerial photographs, it is most likely that Site 16RI305 represents the remains of the structure depicted on the 1958 Baskinton quadrangle. The high proportion of domestic artifacts indicates that the historic structure represented by Site 16RI305 was utilized as a residence.

Summary and National Register Evaluation

Site 16RI305 likely represents the remains of a historic residence dating to the twentieth century. Diagnostic historic artifacts were recovered, but no features or intact cultural midden deposits were observed at Site 16RI305.

Investigations at Site 16RI305 indicate that this resource contains a high density of subsurface remains compared with the other sites investigated in this study. However, the site has experienced significant disturbance from agricultural activities and its deposits retain little integrity. Because of these factors, Site 16RI305 is thought to have a low potential to provide further information on the historic inhabitants of the region. No further work is recommended, and Site 16RI305 is recommended not eligible for listing in the NRHP.

Site 16RI313

Field Site Number: HRNW-06

UTM Coordinates:

Grid Origin: 15N, N3592701 E628794 (NAD 83)

Site Center: 15N, N3592708 E628788 (NAD 83)

Quadrangle Map: Bee Bayou, Louisiana, 7.5-minute

Elevation: 25 m (81 ft) AMSL

Components: prehistoric and historic

Specific Components: unknown prehistoric, unknown historic

Site Type: short-term prehistoric camp, historic residence

Size: 70 m (230 ft) N–S x 90 m (295 ft) E–W

Distance/direction to nearest water: unnamed tributary of Cypress Creek, 620 m (2,034 ft) west

Type and extent of previous disturbance: extensive disturbance from agricultural activities

Topography: level

Vegetation: young corn at time of delineation (agricultural field)

Ground surface visibility: nearly 100 percent; site located in open agricultural field

Recommended NRHP status: not eligible

Site Description

Site 16RI313 was originally recorded during a pedestrian walkover by R. Christopher Goodwin & Associates, Inc., personnel in 2014, but was not formally documented or delineated at that time. The site is located in an agricultural field in north central Richland Parish, Louisiana. It is situated approximately 410 m (1,345 ft) south of US 80 and 200 m (656 ft) west of LA 183. The site lies in a generally level, slightly undulating agricultural field roughly 620 m (2,034 ft) east of an unnamed tributary of Cypress Creek. The entire site area was covered by east–west trending ridges approximately 1 m (3 ft) in width and 10–20 cm (4–8 in) in height at the time of the survey, the result of previous plowing activities in the site area. The site was vegetated with young corn at the time of delineation (Figure 6.5). Site 16RI313 was encountered through shovel testing and the observation of a surface artifact scatter.



Figure 6.5. Overview of Site 16RI313 from datum, facing north.

Investigation Methods

Site 16RI313 was originally recorded through the excavation of a single positive transect shovel test (57-15). This shovel test was assigned an arbitrary coordinate of N1000 E1000, and all delineation shovel tests that were subsequently excavated at the site were assigned coordinates based on their position relative to this shovel test (Figure 6.6). Delineation was conducted at a 10 m (33 ft) interval.

In total, 52 shovel tests were used to delineate the site boundaries, 12 of which were positive for cultural material and 40 of which were negative. Maximum site dimensions were 70 m (230 ft) north-south and 90 m (295 ft) east-west. Ground surface visibility was excellent, and a moderately dense scatter of surface artifacts was also observed in the site area. Locational data points collected with a Trimble GeoXT GPS unit at Site 16RI313 include the site datum (grid position N1000 E1000) and the site boundary. A site sketch map was drawn showing the placement of the shovel test positions in relation to physiographic features (see Figure 6.6).

Depositional Context

Profiles observed at Site 16RI313 were generally similar to those of Gilbert or Gigger silt loams, which are mapped throughout the site area. A typical profile, taken from shovel test N1020 E1000, consisted of a dark brown (10YR 4/3) silt loam Ap horizon from 0 to 17 cm (0 to 7 in) bgs, overlying a gray (10YR 5/1) silt loam Eg horizon from 17 to 36 cm (7 to 14 in) bgs. The Eg horizon also contained mottles of yellowish brown (10YR 5/4) silt loam. This profile was generally typical of the Gilbert soil series mapped in much of the site area, but Gigger soils were also observed in several shovel tests. Artifacts were recovered from an average depth of 9 cm (4 in) bgs, with a maximum recovery depth of 24 cm (10 in) bgs. The presence of a well-defined plow zone in the profiles of all tests and the generally shallow recovery depth of all artifacts indicated that the entire site area had been

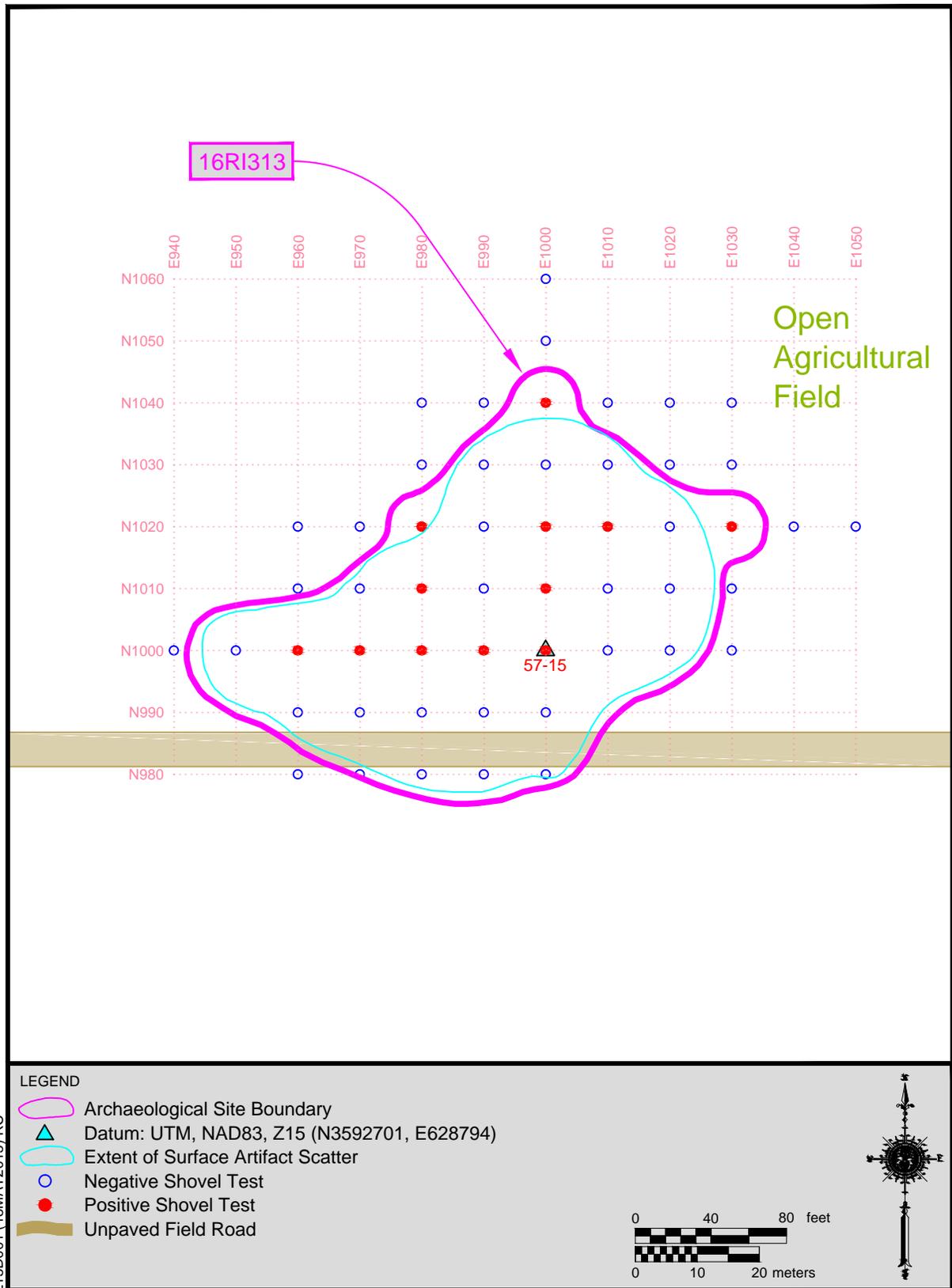
significantly disturbed by agricultural activities.

Artifacts

A total of 68 artifacts were recovered from Site 16RI313 during the current investigation, including 1 piece of ironstone, 1 piece of porcelain, 13 pieces of whiteware, 34 pieces of container glass, 2 undiagnostic pieces of glass tableware, 7 pieces of window glass, 1 undiagnostic nail, 1 colorless piece of lamp chimney or light bulb glass, 7 unidentified artifacts whose function could not be determined, and one partial prehistoric dart point that was found on the surface roughly 20 m (66 ft) northwest of datum (Table 6.2). Though the single piece of porcelain suggested perhaps an earlier date, the majority of the historic ceramic fragments could only be broadly dated to the nineteenth and/or twentieth centuries. None of the other historic artifacts could be definitively assigned to any specific temporal period.

The single recovered prehistoric artifact was a thermally-altered partial dart point that displayed no temporally diagnostic features. No definitive interpretations are possible with such a small assemblage, but the lack of additional prehistoric artifacts suggests that the prehistoric component of Site 16RI313 is likely to have only been occupied during a single archaeological period for a short duration, possibly only for specialized tasks. The recovered artifact did not provide any clues as to the timing of the site occupation, however.

A structure is depicted at the site location on the 1958 Baskinton, Louisiana, 15-minute series USGS topographic quadrangle (see Figure 3.3). This structure is no longer depicted on the 1987 Bee Bayou, Louisiana, 7.5-minute series USGS topographic quadrangle (USGS 1958; 1987). Since no other structures are depicted or visible at the site location on any other quadrangles or aerial photographs, it is most likely that the historic portion of the Site 16RI313 assemblage represents the remains of the structure



L15D001 (18MAY2015) RC

Figure 6.6. Schematic plan map of Site 16RI313.

Table 6.2. 16RI313 Artifact Recovery by Provenience.

Site	Unit #	Depth	Group	Class	Type	Total
16RI313	STP N1000 E960	0-20 cm bgs	Domestic	Ceramics	Ironstone	1
16RI313	STP N1000 E960	0-20 cm bgs	Unidentified	Glass	Flat	1
16RI313	STP N1000 E970	0-24 cm bgs	Architecture	Flat Glass	Window Glass	2
16RI313	STP N1000 E970	0-24 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	2
16RI313	STP N1000 E970	0-24 cm bgs	Unidentified	Metal	Iron / Steel	2
16RI313	STP N1000 E980	0-17 cm bgs	Architecture	Nails	Indeterminate	1
16RI313	STP N1000 E980	0-17 cm bgs	Domestic	Ceramics	Whiteware	1
16RI313	STP N1000 E980	0-17 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	4
16RI313	STP N1000 E980	17-23 cm bgs	Domestic	Ceramics	Whiteware	3
16RI313	STP N1000 E980	17-23 cm bgs	Unidentified	Glass	Flat	1
16RI313	STP N1000 E990	0-20 cm bgs	Domestic	Ceramics	Whiteware	1
16RI313	STP N1000 E990	0-20 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI313	STP N1000 E990	0-20 cm bgs	Furnishings	Lighting	Indeterminate	1
16RI313	STP N1010 E1000	0-15 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	2
16RI313	STP N1010 E1010	0-10 cm bgs	Architecture	Flat Glass	Window Glass	2
16RI313	STP N1010 E1010	0-10 cm bgs	Domestic	Ceramics	Whiteware	3
16RI313	STP N1010 E1010	0-10 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	13
16RI313	STP N1010 E980	0-15 cm bgs	Domestic	Ceramics	Whiteware	1
16RI313	STP N1010 E980	0-15 cm bgs	Domestic	Container Glass	Automatic Bottling Machine	1
16RI313	STP N1010 E980	0-15 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	4
16RI313	STP N1010 E980	0-15 cm bgs	Unidentified	Metal	Iron / Steel	2
16RI313	STP N1020 E1000	0-17 cm bgs	Unidentified	Glass	Curved	1
16RI313	STP N1020 E1010	0-15 cm bgs	Domestic	Ceramics	Porcelain: hard paste	1
16RI313	STP N1020 E1010	0-15 cm bgs	Domestic	Glass Tableware	Undiagnostic fragment	1
16RI313	STP N1020 E1030	0-10 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI313	STP N1020 E1030	0-10 cm bgs	Domestic	Glass Tableware	Undiagnostic fragment	1
16RI313	STP N1020 E980	0-13 cm bgs	Architecture	Flat Glass	Window Glass	2
16RI313	STP N1020 E980	0-13 cm bgs	Domestic	Ceramics	Whiteware	2
16RI313	STP N1020 E980	0-13 cm bgs	Domestic	Container Glass	Automatic Bottling Machine	1
16RI313	STP N1020 E980	0-13 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI313	STP N1040 E1000	0-10 cm bgs	Domestic	Ceramics	Whiteware	1
16RI313	STP N1040 E1000	0-10 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	3
16RI313	STP TR 57-15	0-20 cm bgs	Architecture	Flat Glass	Window Glass	1
16RI313	STP TR 57-15	0-20 cm bgs	Domestic	Ceramics	Whiteware	1
16RI313	STP TR 57-15	0-20 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI313	20m NW of datum	Surface	Prehistoric	Biface	Partial dart point	1
Total						68

depicted on the 1958 Baskinton quadrangle. The high proportion of domestic artifacts indicates that the historic structure represented by Site 16RI313 was utilized as a residence.

Summary and National Register Evaluation

Site 16RI313 likely represents the remains of a short-term prehistoric camp and a historic residence. No diagnostic artifacts were recovered, and no features or intact cultural midden deposits were observed at Site 16RI313.

Investigations at Site 16RI313 indicate that this resource contains a moderate density of subsurface remains compared with the other sites investigated in this study. However, the site has experienced significant disturbance

from agricultural activities and its deposits retain little integrity. Because of these factors, Site 16RI313 is thought to have a low potential to provide further information on the prehistoric or historic inhabitants of the region. No further work is recommended, and Site 16RI313 is recommended not eligible for listing in the NRHP.

Site 16RI314

Field Site Number: HRNW-04

UTM Coordinates:

Grid Origin: 15N, N3592925 E628760 (NAD 83)

Site Center: 15N, N3592938 E628809 (NAD 83)

Quadrangle Map: Bee Bayou, Louisiana, 7.5-minute

Elevation: 25 m (82 ft) AMSL
Components: historic
Specific Components: Industrial & Modern (1890–)
Site Type: unknown historic
Size: 55 m (180 ft) N–S x 125 m (410 ft) E–W
Distance/direction to nearest water: unnamed tributary of Cypress Creek, 575 m (1,886 ft) west
Type and extent of previous disturbance: extensive disturbance from agricultural activities
Topography: level
Vegetation: young corn at time of delineation (agricultural field)
Ground surface visibility: nearly 100 percent; site located in open agricultural field
Recommended NRHP status: not eligible

Site Description

Site 16RI314 was originally recorded during a pedestrian walkover by R. Christopher Goodwin & Associates, Inc., personnel in 2014, but was not formally documented or delineated at that time. The site is located in an agricultural field in north central Richland Parish, Louisiana. It is situated approximately 190 m (623 ft) south of

US 80 and 240 m (787 ft) west of LA 183. The site lies in a generally level, slightly undulating agricultural field roughly 575 m (1,886 ft) east of an unnamed tributary of Cypress Creek. The entire site area was covered by east–west trending ridges approximately 1 m (3 ft) in width and 10–20 cm (4–8 in) in height at the time of the survey, the result of previous plowing activities in the site area. The site was vegetated with young corn at the time of delineation (Figure 6.7). Site 16RI314 was encountered through shovel testing and the observation of a surface artifact scatter.

Investigation Methods

Site 16RI314 was originally recorded through the excavation of a single positive transect shovel test (52-4). This shovel test was assigned an arbitrary coordinate of N1000 E1000, and all delineation shovel tests that were subsequently excavated at the site were assigned coordinates based on their position relative to this shovel test. Delineation shovel tests were excavated at 10 m (33 ft) intervals until three consecutive positive shovel tests were encountered and 20 m (66 ft) intervals were used thereafter.



Figure 6.7. Overview of Site 16RI314 from datum, facing east.

In total, 42 shovel tests were used to delineate the site boundaries, 11 of which were positive for cultural material and 31 of which were negative. Maximum site dimensions were 55 m (180 ft) north–south and 125 m (410 ft) east–west. Ground surface visibility was excellent, and a low-density scatter of surface artifacts was also observed in the site area (Figure 6.8). Locational data points collected with a Trimble GeoXT GPS unit at Site 16RI314 include the site datum (grid position N1000 E1000) and the site boundary. A site sketch map was drawn showing the placement of the shovel test positions in relation to physiographic features (see Figure 6.8).

Depositional Context

Profiles observed at Site 16RI314 were generally similar to that of Deerford silt loam, which is mapped in much of the site area. A typical profile, taken from shovel test N1010 E1020, consisted of a dark yellowish brown (10YR 4/4) silt loam Ap horizon from 0 to 15 cm (0 to 6 in) bgs, overlying a brown (10YR 5/3) silt loam E horizon from 15 to 30 cm (6 to 12 in) bgs. The E horizon also contained mottles of yellowish brown (10YR 5/8) silt loam. This profile was generally typical of the

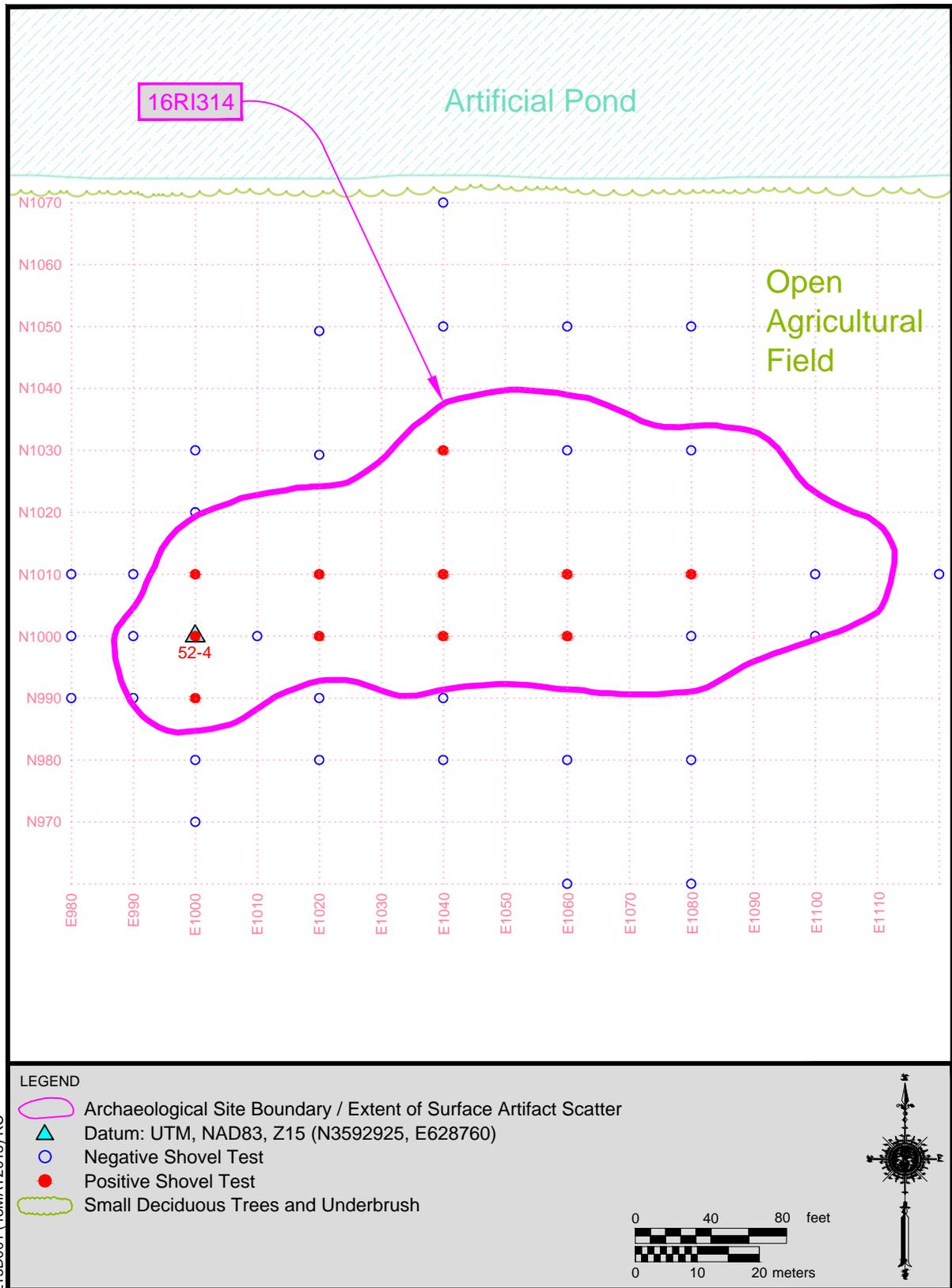
Deerford soil series mapped in much of the site area, but Gigger and Gilbert soils were also observed in several shovel tests. Artifacts were recovered from an average depth of 7 cm (3 in) bgs, with a maximum recovery depth of 22 cm (9 in) bgs. The presence of a well-defined plow zone in the profiles of all tests and the generally shallow recovery depth of all artifacts indicated that the entire site area had been significantly disturbed by agricultural activities.

Artifacts

A total of 21 artifacts were recovered from Site 16RI314 during the current investigation, including 3 undecorated whiteware fragments, 15 pieces of container glass, 1 piece of window glass and 2 unidentified artifacts whose function could not be determined (Table 6.3). The historic ceramic fragments could only be broadly dated to the nineteenth or twentieth century, but one fragment of amethyst container glass and one fragment of container glass formed in an automatic bottling machine indicate that the site dates to the early twentieth century, corresponding to the Industrial & Modern period. None of the other artifacts could be definitively assigned to any specific temporal period.

Table 6.3. 16RI314 Artifact Recovery by Provenience.

Site	Unit #	Depth	Group	Class	Type	Total
16RI314	STP N1000 E1020	5-15 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	2
16RI314	STP N1000 E1040	0-10 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI314	STP N1000 E1060	0-10 cm bgs	Domestic	Ceramics	Whiteware	2
16RI314	STP N1000 E1060	10-15 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI314	STP N1010 E1000	0-10 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI314	STP N1010 E1020	0-10 cm bgs	Domestic	Ceramics	Whiteware	1
16RI314	STP N1010 E1020	0-10 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI314	STP N1010 E1040	0-10 cm bgs	Unidentified	Other		1
16RI314	STP N1010 E1060	5-15 cm bgs	Domestic	Container Glass	Automatic Bottling Machine	1
16RI314	STP N1010 E1060	5-15 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	3
16RI314	STP N1010 E1080	0-10 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	2
16RI314	STP N1030 E1040	0-10 cm bgs	Architecture	Flat Glass	Window Glass	1
16RI314	STP N1030 E1040	0-10 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI314	STP N990 E1000	0-22 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI314	STP TR 52-4	0-15 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI314	STP TR 52-4	0-15 cm bgs	Unidentified	Indeterminate		1
Total						21



L:15D001 (18MAY2015) RC

Figure 6.8. Schematic plan map of Site 16RI314.

No architectural materials other than the single fragment of window glass were recovered from the site, and no historic structures are depicted at the site location on any of the available USGS topographic quadrangles. Therefore, despite the presence of domestic artifacts, there is no indication that Site 16RI314 represents the remains of a historic residence, and the site function cannot be determined.

Summary and National Register Evaluation

Site 16RI314 represents the location of unknown historic activities dating to the early twentieth century. No features or intact cultural midden deposits were observed at Site 16RI314.

Investigations at Site 16RI314 indicate that this resource contains a very low density of subsurface remains compared with the other sites investigated in this study. Additionally, the site has experienced significant disturbance from agricultural activities and its deposits retain little integrity. Because of these factors, Site 16RI314 is thought to have a low potential to provide further information on the historic inhabitants of the region. No further work is recommended, and Site 16RI314 is recommended not eligible for listing in the NRHP.

Site 16RI315

Field Site Number: L15D001-5
UTM Coordinates:
Grid Origin: 15N, N3592829 E628653 (NAD 83)
Site Center: 15N, N3592829 E628664 (NAD 83)
Quadrangle Map: Bee Bayou, Louisiana, 7.5-minute
Elevation: 25 m (82 ft) AMSL
Components: historic
Specific Components: unknown historic
Site Type: unknown historic
Size: 10 m (33 ft) N-S x 30 m (98 ft) E-W
Distance/direction to nearest water: unnamed tributary of Cypress Creek, 475 m (1,558 ft) west

Type and extent of previous disturbance: extensive disturbance from agricultural activities

Topography: level

Vegetation: young corn at time of delineation (agricultural field)

Ground surface visibility: nearly 100 percent; site located in open agricultural field

Recommended NRHP status: not eligible

Site Description

Site 16RI315 is located in an agricultural field in north central Richland Parish, Louisiana. It is situated approximately 295 m (968 ft) south of US 80 and 345 m (1,132 ft) west of LA 183. The site lies in a generally level, slightly undulating agricultural field roughly 475 m (1,558 ft) east of an unnamed tributary of Cypress Creek. The entire site area was covered by east-west trending ridges approximately 1 m (3 ft) in width and 10–20 cm (4–8 in) in height at the time of the survey, the result of previous plowing activities in the site area. The site was vegetated with young corn at the time of delineation (Figure 6.9). Site 16RI315 was identified through shovel testing and consists of subsurface deposits only.

Investigation Methods

Site 16RI315 was recorded through the excavation of a single positive transect shovel test (54-7). This shovel test was assigned an arbitrary coordinate of N1000 E1000, and all delineation shovel tests that were subsequently excavated at the site were assigned coordinates based on their position relative to this shovel test. Delineation shovel tests were excavated at 10 m (33 ft) intervals.

In total, 19 shovel tests were used to delineate the site boundaries, 3 of which were positive for cultural material and 16 of which were negative. Maximum site dimensions were 10 m (33 ft) north-south and 30 m (98 ft) east-west. Ground surface visibility was excellent, but no artifacts were observed on the surface in the site area. Locational data points collected with a Trimble GeoXT GPS unit at Site 16RI315



Figure 6.9. Overview of Site 16RI315 from datum, facing east.

include the site datum (grid position N1000 E1000) and the site boundary. A site sketch map was drawn showing the placement of the shovel test positions in relation to physiographic features (Figure 6.10).

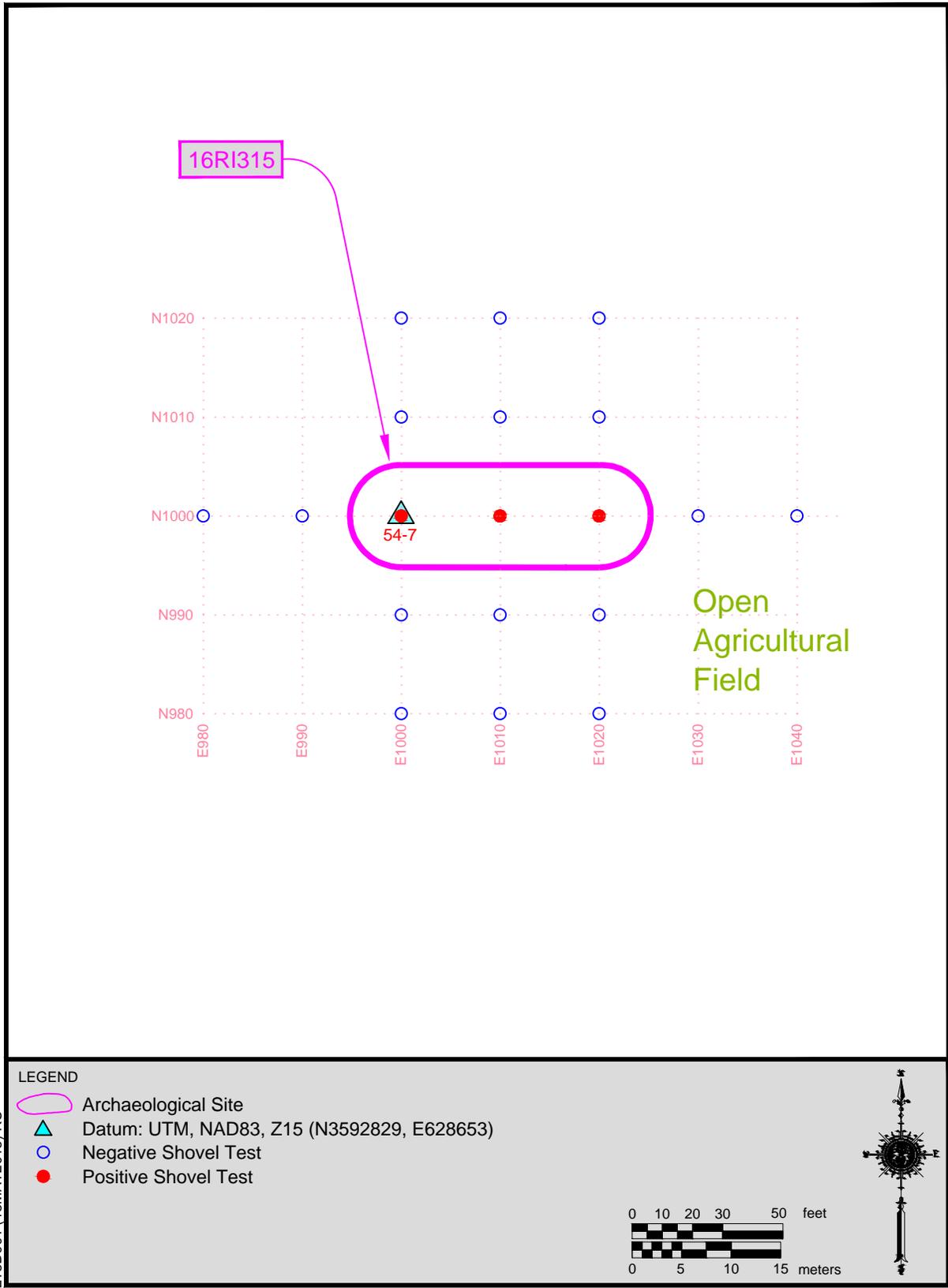
Depositional Context

Profiles observed at Site 16RI315 were generally similar to that of Gilbert silt loam, which is mapped throughout the site area. A typical profile, taken from shovel test N1000 E1020, consisted of a brown (10YR 5/3) silt loam Ap horizon from 0 to 21 cm (0 to 8 in) bgs, overlying a light gray (10YR 7/2) silty clay loam Eg horizon from 21 to 31 cm (8 to 12 in) bgs. The Eg horizon also contained mottles of yellowish brown (10YR 5/8) silty clay loam. Artifacts were recovered from an average depth of 12 cm (5 in) bgs, with a maximum recovery depth of 25 cm (10 in) bgs. The presence of a well-defined plow zone in the profiles of all tests and the generally shallow recovery depth of all artifacts indicated that the entire site area had been significantly disturbed by agricultural activities.

Artifacts

A total of five artifacts were recovered from Site 16RI315 during the current investigation, including one piece of undecorated whiteware, three pieces of undiagnostic container glass, and one indeterminate nail fragment (Table 6.4). The historic ceramic fragment could only be broadly dated to the nineteenth or twentieth centuries. None of the other artifacts could be definitively assigned to any specific temporal period, with the nail fragment being too corroded for its method of manufacture to be determined.

No historic structures are depicted at the site location on any of the available USGS topographic quadrangles. Despite the presence of a small quantity of domestic artifacts and a single nail fragment, there is no strong indication that Site 16RI315 represents the remains of a historic residence, and the site function cannot be determined.



L:15D001 (18MAY2015).RC

Figure 6.10. Schematic plan map of Site 16RI315.

Table 6.4. 16RI315 Artifact Recovery by Provenience.

Site	Unit #	Depth	Group	Class	Type	Total
16RI315	STP N1000 E1010	0-10 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI315	STP N1000 E1020	0-21 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	2
16RI315	STP TR 54-7	10-25 cm bgs	Architecture	Nails	Indeterminate	1
16RI315	STP TR 54-7	10-25 cm bgs	Domestic	Ceramics	Whiteware	1
Total						5

Summary and National Register Evaluation

Site 16RI315 represents the location of unknown historic activities. No artifacts that could be definitively assigned to any specific temporal period were recovered, and no features or intact cultural midden deposits were observed at Site 16RI315.

Investigations at Site 16RI315 indicate that this resource contains a low density of subsurface remains compared with the other sites investigated in this study. Additionally, the site has experienced significant disturbance from agricultural activities and its deposits retain little integrity. Because of these factors, Site 16RI315 is thought to have a low potential to provide further information on the historic inhabitants of the region. No further work is recommended, and Site 16RI315 is recommended not eligible for listing in the NRHP.

Site 16RI316

Field Site Number: HRNW-07

UTM Coordinates:

Grid Origin: 15N, N3592702 E628539 (NAD 83)

Site Center: 15N, N3592710 E628536 (NAD 83)

Quadrangle Map: Bee Bayou, Louisiana, 7.5-minute

Elevation: 25 m (82 ft) AMSL

Components: historic

Specific Components: unknown historic

Site Type: historic residence

Size: 47 m (154 ft) N-S x 46 m (151 ft) E-W

Distance/direction to nearest water: unnamed tributary of Cypress Creek, 360 m (1,181 ft) west

Type and extent of previous disturbance: extensive disturbance from agricultural activities

Topography: level

Vegetation: young corn at time of delineation (agricultural field)

Ground surface visibility: nearly 100 percent; site located in open agricultural field

Recommended NRHP status: not eligible

Site Description

Site 16RI316 was originally recorded during a pedestrian walkover by R. Christopher Goodwin & Associates, Inc., personnel in 2014, but was not formally documented or delineated at that time. The site is located in an agricultural field in north central Richland Parish, Louisiana. It is situated approximately 430 m (1,411 ft) south of US 80 and 460 m (1,509 ft) west of LA 183. The site lies in a generally level, slightly undulating agricultural field immediately northeast of the intersection of two unpaved field roads, roughly 360 m (1,181 ft) east of an unnamed tributary of Cypress Creek. The entire site area was covered by east-west trending ridges approximately 1 m (3 ft) in width and 10–20 cm (4–8 in) in height at the time of the survey, the result of previous plowing activities in the site area. The site was vegetated with young corn at the time of delineation.

A generator and fuel tank connected to an irrigation pump and covered by a corrugated metal shelter is located on the northwest corner of the field road intersection, approximately 60 m (197 ft) west of datum. Roughly 30 m (98 ft) southeast of datum is a dump pile containing modern artifacts such as mufflers, oil filters, and unidentified fragments of corroded ferrous metal that may be related

to the maintenance of the generators and irrigation pumps observed throughout the field (Figure 6.11). This dump pile was not considered to be part of the site. Site 16RI316 was identified through shovel testing and the observation of a surface artifact scatter.

Investigation Methods

Site 16RI316 was originally recorded through the excavation of a single positive transect shovel test (57-9). This shovel test was assigned an arbitrary coordinate of N1000 E1000, and all delineation shovel tests that were subsequently excavated at the site were assigned coordinates based on their position relative to this shovel test. Delineation shovel tests were excavated at 10 m (33 ft) intervals.

In total, 38 shovel tests were used to delineate the site boundaries, 10 of which were positive for cultural material and 28 of which were negative. Maximum site dimensions were 47 m (154 ft) north–south and 46 m (151 ft) east–west. Ground surface visibility was excellent, and a low-density scatter of surface artifacts was also observed

in the site area. Locational data points collected with a Trimble GeoXT GPS unit at Site 16RI316 include the site datum (grid position N1000 E1000) and the site boundary. A site sketch map was drawn showing the placement of the shovel test positions in relation to physiographic features (Figure 6.12).

Depositional Context

Profiles observed at Site 16RI316 were generally similar to that of Gilbert silt loam, which is mapped in much of the site area. A typical profile, taken from shovel test N1010 E1000, consisted of a brown (10YR 5/3) silt loam Ap horizon from 0 to 17 cm (0 to 7 in) bgs, overlying a light gray (10YR 7/2) silty clay loam Eg horizon from 17 to 37 cm (7 to 15 in) bgs. The Eg horizon also contained mottles of yellowish brown (10YR 5/8) silty clay loam. This profile was generally typical of the Gilbert soil series mapped in much of the site area, but Gigger soils were also occasionally observed. Artifacts were



Figure 6.11. Overview of Site 16RI316 from datum, facing west.

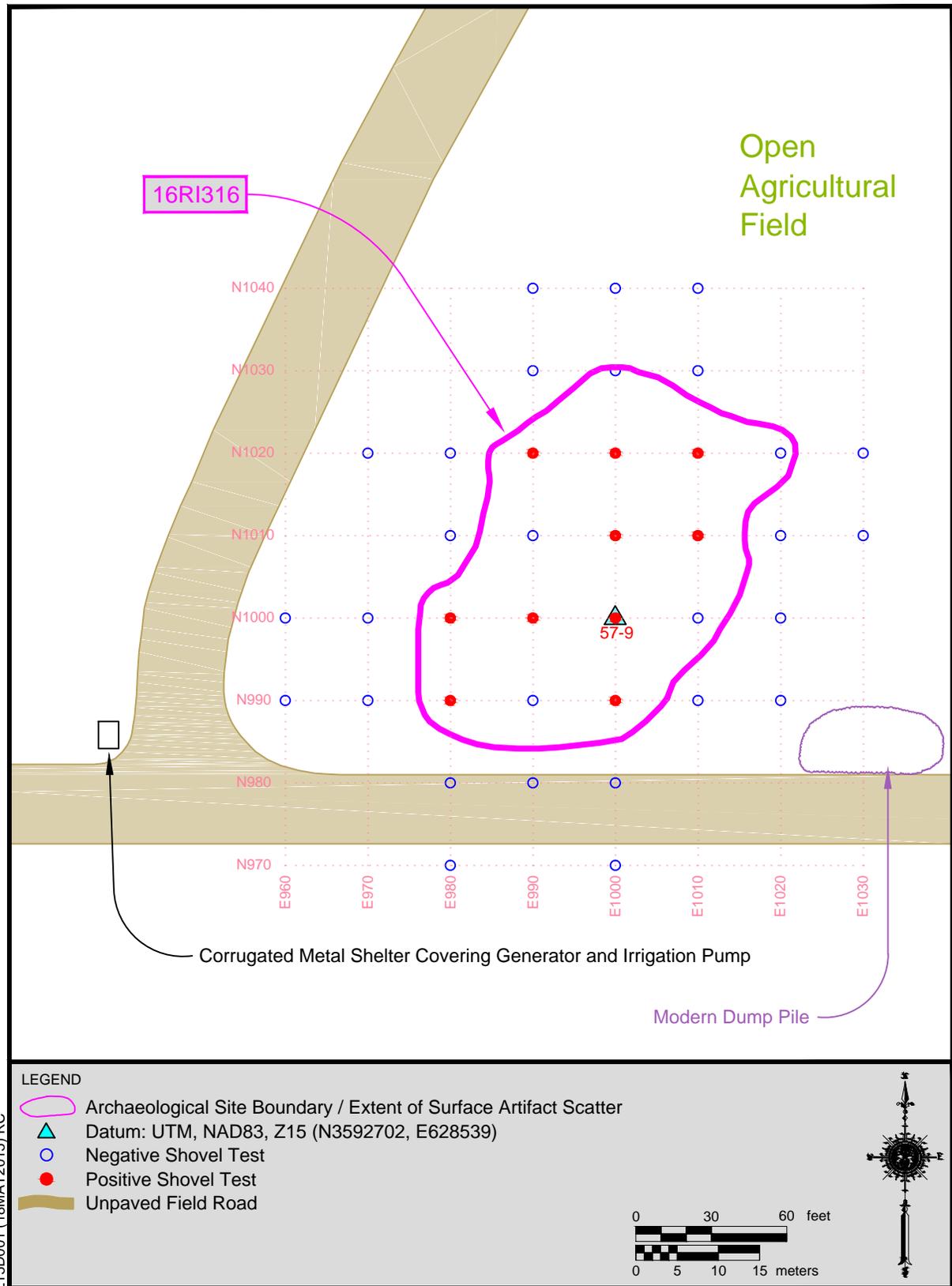


Figure 6.12. Schematic plan map of Site 16RI316.

recovered from an average depth of 8 cm (3 in) bgs, with a maximum recovery depth of 20 cm (8 in) bgs. The presence of a well-defined plow zone in the profiles of all tests and the generally shallow recovery depth of all artifacts indicated that the entire site area had been significantly disturbed by agricultural activities.

Artifacts

A total of 33 artifacts were recovered from Site 16RI316 during the current investigation, including 6 pieces of whiteware, 22 pieces of container glass, 1 undiagnostic piece of glass tableware, 1 piece of window glass, 1 undiagnostic nail, and 2 unidentified artifacts whose function could not be determined (Table 6.5). The historic ceramic fragments could only be broadly dated to the nineteenth or twentieth century. None of the other artifacts could be definitively assigned to any specific temporal period, with the nail fragment being too corroded for its method of manufacture to be determined.

A structure is depicted at the site location on the 1958 Baskinton, Louisiana, 15-minute series USGS topographic quadrangle (see Figure 3.3). This structure is no longer depicted on the 1987 Bee Bayou, Louisiana, 7.5-minute series USGS topographic quadrangle (USGS 1958, 1987). Since no

other structures are depicted or visible at the site location on any other quadrangles or aerial photographs, it is most likely that the Site 16RI316 assemblage represents the remains of the structure depicted on the 1958 Baskinton quadrangle. The high proportion of domestic artifacts indicates that the historic structure represented by Site 16RI316 was utilized as a residence.

Summary and National Register Evaluation

Site 16RI316 likely represents the remains of a historic residence. No artifacts that could be definitively assigned to any specific temporal period were recovered, and no features or intact cultural midden deposits were observed at Site 16RI316.

Investigations at Site 16RI316 indicate that this resource contains a low density of subsurface remains compared to the other sites investigated in this study. Additionally, the site has experienced significant disturbance from agricultural activities and its deposits retain little integrity. Because of these factors, Site 16RI316 is thought to have a low potential to provide further information on the historic inhabitants of the region. No further work is recommended, and Site 16RI316 is recommended not eligible for listing in the NRHP.

Table 6.5. 16RI316 Artifact Recovery by Provenience.

Site	Unit #	Depth	Group	Class	Type	Total
16RI316	STP N1000 E980	0-10 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	2
16RI316	STP N1000 E990	5-15 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI316	STP N1000 E990	5-15 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	7
16RI316	STP N1010 E1000	0-18 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	2
16RI316	STP N1010 E1010	0-15 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI316	STP N1010 E1010	0-15 cm bgs	Unidentified	Glass	Indeterminate	1
16RI316	STP N1010 E1010	10-15 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	2
16RI316	STP N1020 E1000	0-10 cm bgs	Domestic	Glass Tableware	Unidentified mold	1
16RI316	STP N1020 E1010	0-10 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	2
16RI316	STP N1020 E990	0-10 cm bgs	Domestic	Ceramics	Whiteware	1
16RI316	STP N990 E1000	0-10 cm bgs	Architecture	Nails	Indeterminate	1
16RI316	STP N990 E980	0-10 cm bgs	Domestic	Ceramics	Whiteware	3
16RI316	STP N990 E980	0-10 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI316	STP TR 57-9	0-20 cm bgs	Architecture	Flat Glass	Window Glass	1
16RI316	STP TR 57-9	0-20 cm bgs	Domestic	Ceramics	Whiteware	2
16RI316	STP TR 57-9	0-20 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	4
16RI316	STP TR 57-9	0-20 cm bgs	Unidentified	Glass	Flat	1
Total						33

Site 16RI317

Field Site Number: HRNW-08
UTM Coordinates:
Grid Origin: 15N, N3593109 E627783 (NAD 83)
Site Center: 15N, N3593090 E627830 (NAD 83)
Quadrangle Map: Bee Bayou, Louisiana, 7.5-minute
Elevation: 24 m (80 ft) AMSL
Components: historic
Specific Components: Industrial & Modern (1890–)
Site Type: historic residence or residences
Size: 125 m (410 ft) N–S x 137 m (449 ft) E–W
Distance/direction to nearest water: Hurricane Bayou, 50 m (164 ft) west
Type and extent of previous disturbance: extensive disturbance from agricultural activities
Topography: level
Vegetation: none (fallow agricultural field)
Ground surface visibility: nearly 100 percent; site located in open agricultural field
Recommended NRHP status: not eligible

Site Description

Site 16RI317 was originally recorded during a pedestrian walkover by R. Christopher Goodwin & Associates, Inc., personnel in 2014, but was not formally documented or delineated at that time. The site is located in an agricultural field in north central Richland Parish, Louisiana. It is situated approximately 80 m (262 ft) south of US 80 and 425 m (1,394 ft) east of Pettit Road. The site lies in a generally level, slightly undulating agricultural field roughly 50 m (164 ft) east of Hurricane Bayou. With the exception of small patches of mixed deciduous secondary forest and unplowed areas near the project area boundaries, the entire site area was covered by east–west trending ridges approximately 1 m (3 ft) in width and 10–20 cm (4–8 in) in height at the time of the survey, the result of previous plowing activities in the site area. The agricultural field was fallow at the time of the survey (Figure 6.13). Site 16RI317 was identified through shovel testing and the observation of a surface artifact scatter.



Figure 6.13. Overview of Site 16RI317 from datum, facing east.

Investigation Methods

Site 16RI317 was originally recorded through the excavation of two positive transect shovel tests (1-18 and 23-2). Shovel test 1-18 was assigned an arbitrary coordinate of N1000 E1000, and all delineation shovel tests that were subsequently excavated at the site were assigned coordinates based on their position relative to this shovel test. Delineation shovel tests were excavated at 10 m (33 ft) intervals until three consecutive positive shovel tests were encountered and 20 m (66 ft) intervals were used thereafter.

In total, 48 shovel tests were used to delineate the site boundaries, 17 of which were positive for cultural material and 31 of which were negative. Maximum site dimensions were 125 m (410 ft) north–south and 137 m (449 ft) east–west. The project area boundary forms the site’s western and northern boundaries, but a railroad line and Hurricane Bayou are immediately adjacent to the project area to the north and west respectively, so the site is unlikely to extend much further in these directions. Ground surface visibility was excellent, and a moderate-density scatter of surface artifacts was also observed in the site area. Locational data points collected with a Trimble GeoXT GPS unit at Site 16RI317 include the site datum (grid position N1000 E1000) and the site boundary. A site sketch map was drawn showing the placement of the shovel test positions in relation to physiographic features (Figure 6.14).

Depositional Context

Profiles observed at Site 16RI317 were generally similar to that of Gilbert silt loam, which is mapped in much of the site area. A typical profile, taken from shovel test N990 E1000, consisted of a brown (10YR 4/3) silt loam Ap horizon from 0 to 17 cm (0 to 7 in) bgs, overlying a light brownish gray (10YR 6/2) silty clay loam Eg horizon from 17 to 32 cm (7 to 13 in) bgs. The Eg horizon also contained mottles of yellowish brown (10YR 5/8) silty clay loam. This profile was generally typical of the Gilbert soil series mapped in

much of the site area, but Egypt soils were also observed in several shovel tests. Artifacts were recovered from an average depth of 7 cm (3 in) bgs, with a maximum recovery depth of 20 cm (8 in) bgs. The presence of a well-defined plow zone in the profiles of all tests and the generally shallow recovery depth of all artifacts indicated that the entire site area had been significantly disturbed by agricultural activities.

Artifacts

A total of 82 artifacts were recovered from Site 16RI317 during the current investigation, including 1 whiteware fragment, 50 pieces of container glass, 2 brick fragments, 1 fragment of ceramic tile, 1 mortar fragment, 5 pieces of a stoneware water pipe, 10 pieces of flat glass, 2 wire nails, 1 unidentified nail fragment, and 9 unidentified artifacts whose function could not be determined (Table 6.6). The presence of wire nails and one fragment of container glass formed in an automatic bottling machine indicates that the site dates to the late nineteenth and/or early twentieth centuries, corresponding to the Industrial & Modern period. None of the other artifacts could be definitively assigned to any specific temporal period.

Two structures are depicted at the site location on the 1958 Baskinton, Louisiana, 15-minute series USGS topographic quadrangle (see Figure 3.3). Neither of these structures is depicted on the 1987 Bee Bayou, Louisiana, 7.5-minute series USGS topographic quadrangle (USGS 1958, 1987). Since no other structures are depicted or visible at the site location on any other quadrangles or aerial photographs, it is most likely that the Site 16RI317 assemblage represents the remains of the structures depicted on the 1958 Baskinton quadrangle. The high proportion of domestic artifacts indicates that at least one of the historic structures represented by Site 16RI317 was utilized as a residence.

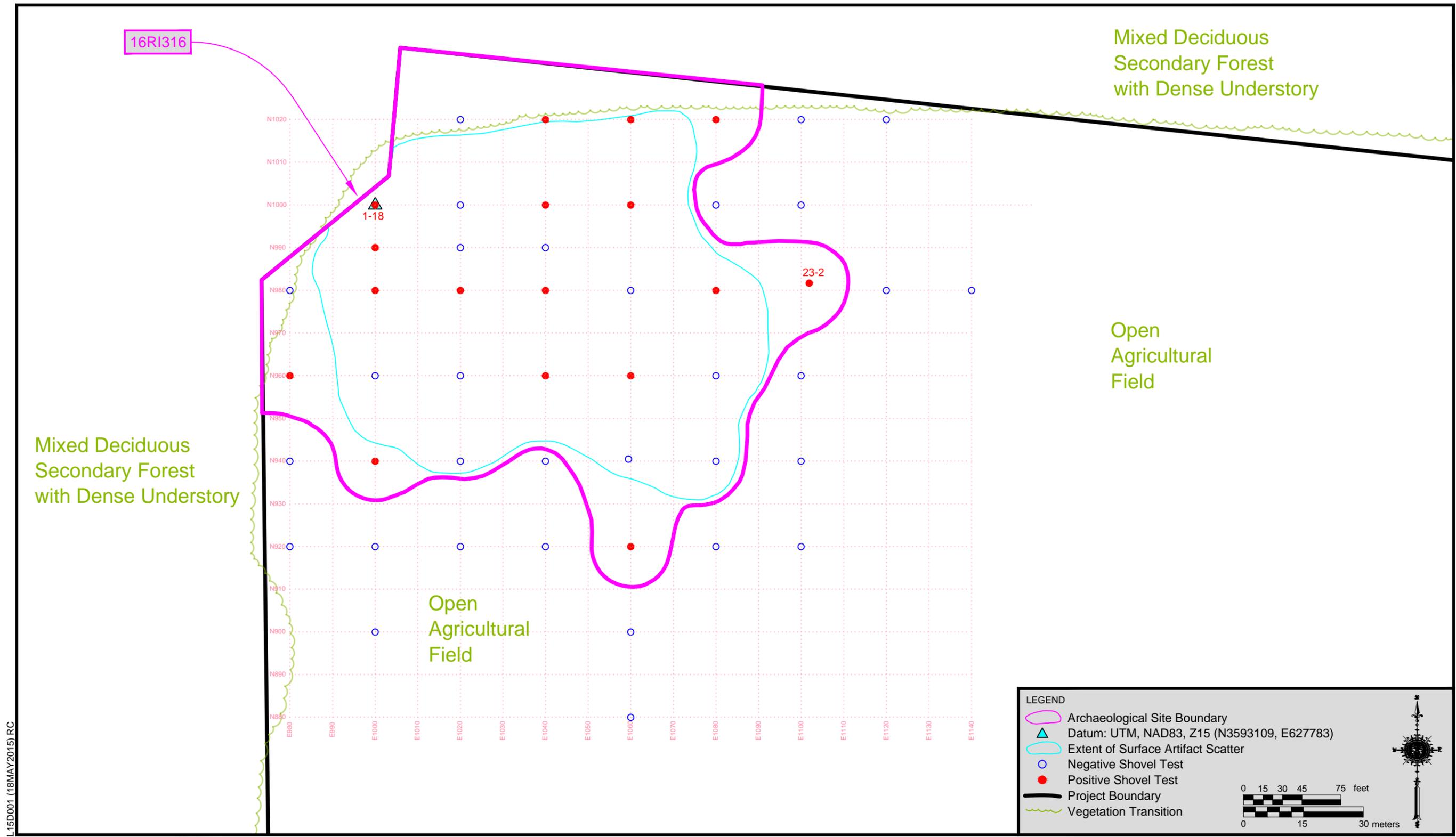


Figure 6.14. Schematic plan map of Site 16RI317.

Table 6.6. 16RI317 Artifact Recovery by Provenience.

Site	Unit #	Depth	Group	Class	Type	Total
16RI317	STP N1000 E1040	0-10 cm bgs	Unidentified	Indeterminate	Indeterminate	3
16RI317	STP N1000 E1060	5-15 cm bgs	Domestic	Ceramics	Whiteware	1
16RI317	STP N1020 E1040	5-15 cm bgs	Architecture	Flat Glass	Indeterminate	1
16RI317	STP N1020 E1040	5-15 cm bgs	Architecture	Flat Glass	Window Glass	2
16RI317	STP N1020 E1040	5-15 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI317	STP N1020 E1060	0-10 cm bgs	Architecture	Construction Material	Brick (measure in inches)	1
16RI317	STP N1020 E1060	0-10 cm bgs	Architecture	Construction Material	Mortar	1
16RI317	STP N1020 E1060	0-10 cm bgs	Architecture	Fittings and Hardware	Stoneware Water Pipe (weigh)	3
16RI317	STP N1020 E1060	0-10 cm bgs	Architecture	Flat Glass	Indeterminate	1
16RI317	STP N1020 E1060	0-10 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI317	STP N1020 E1060	0-10 cm bgs	Unidentified	Ceramic	Indeterminate ceramic	1
16RI317	STP N1020 E1060	10-20 cm bgs	Unidentified	Ceramic	Porcelain	1
16RI317	STP N1020 E1080	0-10 cm bgs	Architecture	Fittings and Hardware	Stoneware Water Pipe (weigh)	1
16RI317	STP N1020 E1080	0-10 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI317	STP N920 E1060	0-10 cm bgs	Domestic	Container Glass	Automatic Bottling Machine	1
16RI317	STP N940 E1000	0-10 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI317	STP N960 E1040	0-10 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI317	STP N960 E1040	10-15 cm bgs	Architecture	Construction Material	Brick (measure in inches)	1
16RI317	STP N960 E1060	0-10 cm bgs	Unidentified	Metal	Iron / Steel	1
16RI317	STP N960 E980	0-15 cm bgs	Unidentified	Metal	Iron / Steel	1
16RI317	STP N980 E1000	0-15 cm bgs	Architecture	Fittings and Hardware	Stoneware Water Pipe (weigh)	1
16RI317	STP N980 E1000	0-15 cm bgs	Architecture	Flat Glass	Laminated Glass	2
16RI317	STP N980 E1000	0-15 cm bgs	Architecture	Flat Glass	Window Glass	4
16RI317	STP N980 E1000	0-15 cm bgs	Architecture	Nails	Wire Nail	1
16RI317	STP N980 E1000	0-15 cm bgs	Unidentified	Metal	Iron / Steel	1
16RI317	STP N980 E1020	0-10 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI317	STP N980 E1040	0-10 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI317	STP N980 E1080	0-19 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI317	STP N990 E1000	0-19 cm bgs	Architecture	Nails	Wire Nail	1
16RI317	STP N990 E1000	0-19 cm bgs	Unidentified	Glass	Flat	1
16RI317	STP TR 1-18	0-13 cm bgs	Architecture	Nails	Indeterminate	1
16RI317	STP TR 1-18	0-13 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	41
16RI317	STP TR 23-2	0-10 cm bgs	Architecture	Construction Material	Ceramic	1
Total						82

Summary and National Register Evaluation

Site 16RI317 likely represents the remains of a historic residence or residences dating to the late nineteenth and/or early twentieth centuries. Diagnostic artifacts were recovered, but no features or intact cultural midden deposits were observed at Site 16RI317.

Investigations at Site 16RI317 indicate that this resource contains a moderate to high density of subsurface remains compared with the other sites investigated in this study. However, the site has experienced significant disturbance from agricultural activities and its deposits retain little integrity. Because of these factors, Site 16RI317 is thought to have a low potential to provide further information on the historic inhabitants of the region. No further work is recommended, and Site 16RI317 is

recommended not eligible for listing in the NRHP.

Site 16RI318

Field Site Number: L15D001-11

UTM Coordinates:

Grid Origin: 15N, N3592988 E627901 (NAD 83)

Site Center: 15N, N3592995 E627904 (NAD 83)

Quadrangle Map: Bee Bayou, Louisiana, 7.5-minute

Elevation: 25 m (81 ft) AMSL

Components: historic

Specific Components: unknown historic

Site Type: unknown historic

Size: 30 m (98 ft) N-S x 38 m (125 ft) E-W

Distance/direction to nearest water: Hurricane Bayou, 160 m (525 ft) west

Type and extent of previous disturbance: extensive disturbance from agricultural activities

Topography: level

Vegetation: none (fallow agricultural field)

Ground surface visibility: nearly 100 percent; site located in open agricultural field

Recommended NRHP status: not eligible

Site Description

Site 16RI318 is located in an agricultural field in north central Richland Parish, Louisiana. It is situated approximately 190 m (623 ft) south of US 80 and 545 m (1,788 ft) east of Pettit Road. The site lies in a generally level, slightly undulating agricultural field roughly 160 m (525 ft) east of Hurricane Bayou. The entire site area was covered by east–west trending ridges approximately 1 m (3 ft) in width and 10–20 cm (4–8 in) in height at the time of the survey, the result of previous plowing activities in the site area. The

agricultural field was fallow at the time of the survey (Figure 6.15). Site 16RI318 was identified through shovel testing and the observation of a surface artifact scatter.

Investigation Methods

Site 16RI318 was originally recorded through the excavation of a single positive transect shovel test (25-2). This shovel test was assigned an arbitrary coordinate of N1000 E1000, and all delineation shovel tests that were subsequently excavated at the site were assigned coordinates based on their position relative to this shovel test. Delineation shovel tests were excavated at 10 m (33 ft) intervals. In total, 19 shovel tests were used to delineate the site boundaries, 3 of which were positive for cultural material and 16 of which were negative. Maximum site dimensions were 30 m (98 ft) north–south and 38 m (125 ft) east–west. Ground surface visibility was



Figure 6.15. Overview of Site 16RI318 from datum, facing north.

excellent, and a low-density surface scatter of non-diagnostic container glass and metal fragments was also observed in the site area. Locational data points collected with a Trimble GeoXT GPS unit at Site 16RI318 include the site datum (grid position N1000 E1000) and the site boundary. A site sketch map was drawn showing the placement of the shovel test positions in relation to physiographic features (Figure 6.16).

Depositional Context

Profiles observed at Site 16RI318 were generally similar to that of Egypt silt loam, which is mapped in much of the site area. A typical profile, taken from shovel test N1010 E1010, consisted of a brown (10YR 5/3) silt loam Ap horizon from 0 to 21 cm (0 to 8 in) bgs, overlying a light brownish gray (10YR 6/2) silty clay loam E horizon from 21 to 32 cm (8 to 13 in) bgs. The E horizon also contained mottles of dark yellowish brown (10YR 4/6) and yellowish brown (10YR 5/8) silty clay loam. This profile was generally typical of the Egypt soil series mapped in much of the site area, but Gilbert soils were also observed in several shovel tests. Artifacts were recovered from an average depth of 11 cm (4 in) bgs, with a maximum recovery depth of 20 cm (8 in) bgs. The presence of a well-defined plow zone in the profiles of all tests and the generally shallow recovery depth of all artifacts indicated that the entire site area had been significantly disturbed by agricultural activities.

Artifacts

Approximately 10–15 fragments of undiagnostic container glass and metal were observed in a low-density surface scatter at

Site 16RI318, but only artifacts recovered from shovel tests were collected during the current investigation. These recovered materials consist of 4 artifacts, including 3 undiagnostic container glass fragments and 1 fragment of indeterminate metal (Table 6.7). None of these artifacts could be definitively assigned to any specific temporal period.

No architectural materials were recovered from the site, and no historic structures are depicted at the site location on any of the available USGS topographic quadrangles. Therefore, despite the presence of a small quantity of domestic artifacts, there is no indication that Site 16RI318 represents the remains of a historic residence, and the site function cannot be determined.

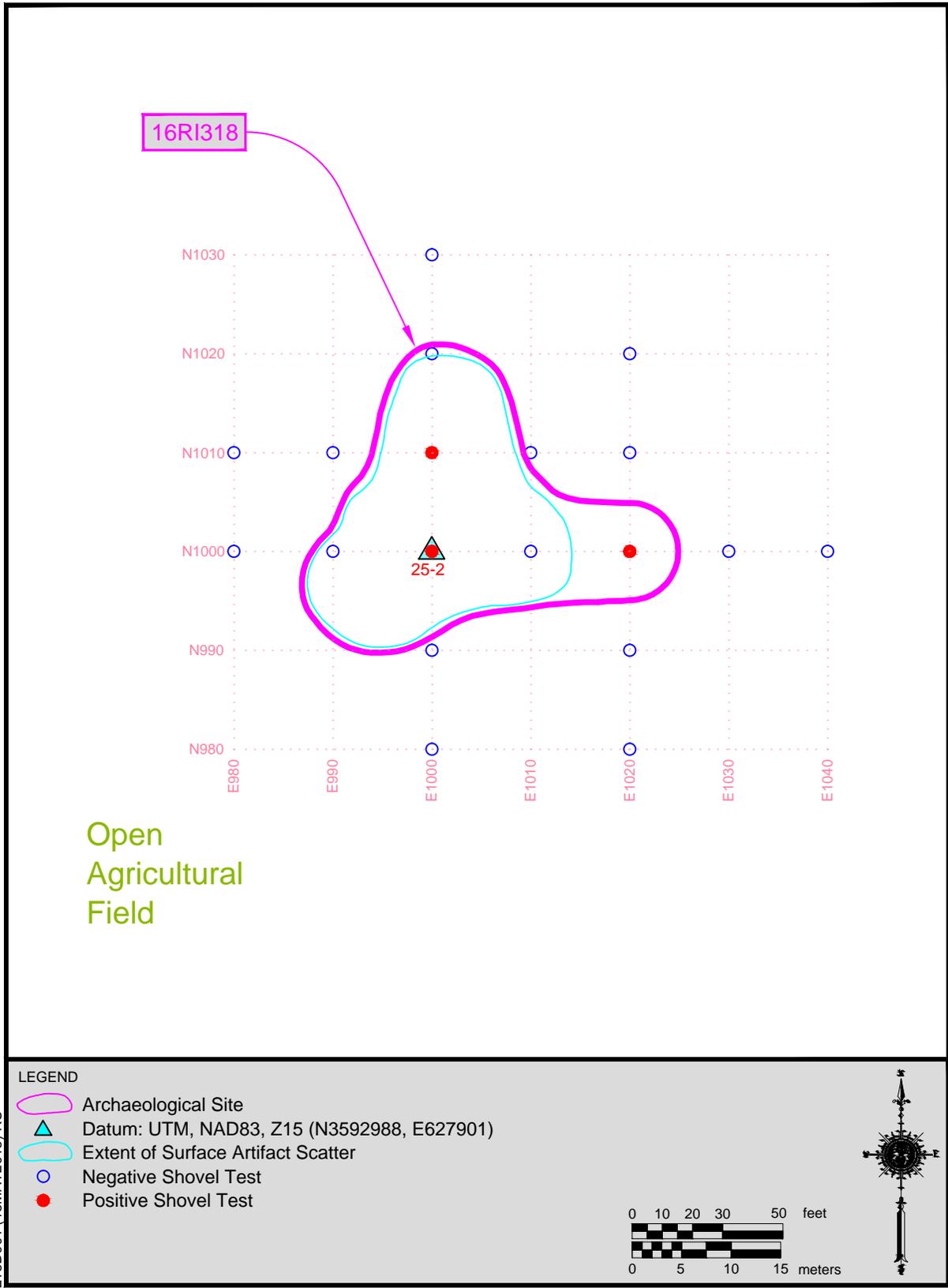
Summary and National Register Evaluation

Site 16RI318 represents the location of unknown historic activities. No artifacts that could be definitively assigned to any specific temporal period were recovered, and no features or intact cultural midden deposits were observed at Site 16RI318.

Investigations at Site 16RI318 indicate that this resource contains a very low density of subsurface remains compared with the other sites investigated in this study. Additionally, the site has experienced significant disturbance from agricultural activities and its deposits retain little integrity. Because of these factors, Site 16RI318 is thought to have a low potential to provide further information on the historic inhabitants of the region. No further work is recommended, and Site 16RI318 is recommended not eligible for listing in the NRHP.

Table 6.7. 16RI318 Artifact Recovery by Provenience.

Site	Unit #	Depth	Group	Class	Type	SumOfCount
16RI318	STP N1000 E1020	5-15 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI318	STP N1010 E1000	0-10 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI318	STP TR 25-2	10-20 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI318	STP TR 25-2	10-20 cm bgs	Unidentified	Metal	Indeterminate metal	1
Total						4



L15D001 (18MAY2015) RC

Figure 6.16. Schematic plan map of Site 16RI318.

Site 16RI319

Field Site Number: L15D001-15
UTM Coordinates:
Grid Origin: 15N, N3593116 E627953 (NAD 83)
Site Center: 15N, N3593105 E627962 (NAD 83)
Quadrangle Map: Bee Bayou, Louisiana, 7.5-minute
Elevation: 25 m (82 ft) AMSL
Components: historic
Specific Components: unknown historic
Site Type: historic residence
Size: 49 m (161 ft) N–S x 50 m (164 ft) E–W
Distance/direction to nearest water: Hurricane Bayou, 220 m (722 ft) west
Type and extent of previous disturbance: extensive disturbance from agricultural activities
Topography: level
Vegetation: none (fallow agricultural field)
Ground surface visibility: nearly 100 percent; site located in open agricultural field

Recommended NRHP status: not eligible

Site Description

Site 16RI319 is located in an agricultural field in north central Richland Parish, Louisiana. It is situated approximately 60 m (197 ft) south of US 80 and 595 m (1,952 ft) east of Pettit Road. The site lies in a generally level, slightly undulating agricultural field just south of a tree line, roughly 220 m (722 ft) east of Hurricane Bayou. With the exception of a small unplowed portion immediately adjacent to the tree line that was occupied by an unpaved field road, the entire site area was covered by east–west trending ridges approximately 1 m (3 ft) in width and 10–20 cm (4–8 in) in height at the time of the survey, the result of previous plowing activities in the site area. The agricultural field was fallow at the time of the survey (Figure 6.17). Site 16RI319 was encountered through shovel testing and the observation of a surface artifact scatter.



Figure 6.17. Overview of Site 16RI319 from datum, facing east.

Investigation Methods

Site 16RI319 was recorded through the excavation of a single positive transect shovel test (22-2). This shovel test was assigned an arbitrary coordinate of N1000 E1000, and all delineation shovel tests that were subsequently excavated at the site were assigned coordinates based on their position relative to this shovel test. Delineation shovel tests were excavated at 10 m (33 ft) intervals.

In total, 31 shovel tests were used to delineate the site boundaries, 6 of which were positive for cultural material and 25 of which were negative. Maximum site dimensions were 49 m (161 ft) north–south and 50 m (164 ft) east–west. Ground surface visibility was excellent, and a low to moderate density scatter of surface artifacts was also observed in the site area. Locational data points collected with a Trimble GeoXT GPS unit at Site 16RI319 include the site datum (grid position N1000 E1000) and the site boundary. A site sketch map was drawn showing the placement of the shovel test positions in relation to physiographic features (Figure 6.18).

Depositional Context

Profiles observed at Site 16RI319 were generally similar to that of Egypt silt loam, which is mapped in much of the site area. A typical profile, taken from shovel test N990 E1000, consisted of a brown (10YR 5/3) silt loam Ap horizon from 0 to 19 cm (0 to 7 in) bgs, overlying a pale brown (10YR 6/3) silty

clay loam E horizon from 19 to 35 cm (7 to 14 in) bgs. This profile was generally typical of the Egypt soil series mapped in much of the site area, but Gilbert soils were also occasionally observed. Artifacts were recovered from an average depth of 9 cm (4 in) bgs, with a maximum recovery depth of 30 cm (12 in) bgs. The presence of a well-defined plow zone in the profiles of all tests and the shallow recovery depth of the vast majority of artifacts indicated that the entire site area had been significantly disturbed by agricultural activities.

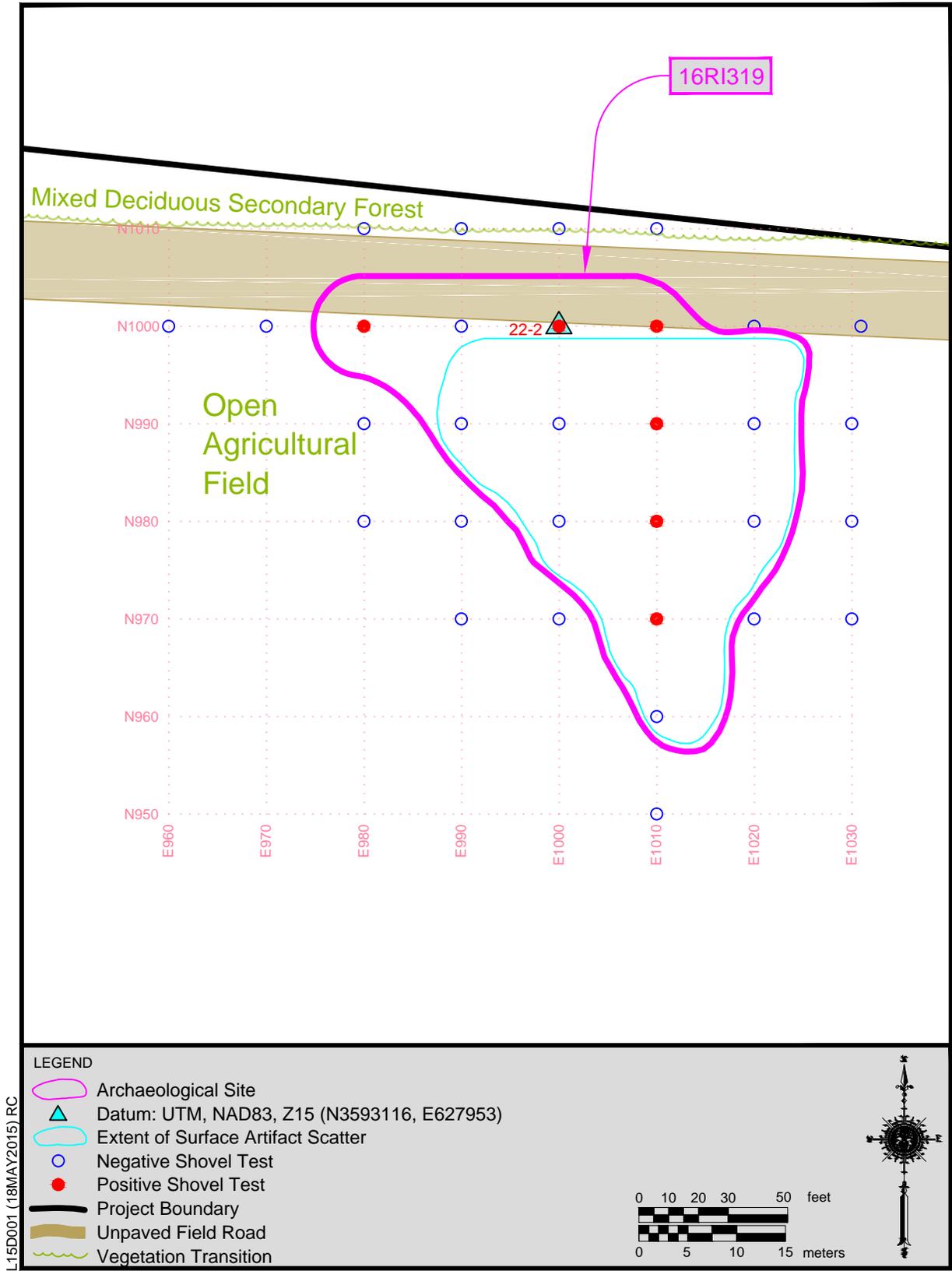
Artifacts

A total of 18 artifacts were recovered from Site 16RI319 during the current investigation, including 1 ironstone fragment, 1 whiteware fragment, 11 pieces of undiagnostic container glass, 3 pieces of window glass and 2 unidentified artifacts whose function could not be determined (Table 6.8). The historic ceramic fragments could only be broadly dated to the nineteenth or twentieth century. None of the other artifacts could be definitively assigned to any specific temporal period.

A structure is depicted roughly 65 m (213 ft) southeast of the site datum on the 1958 Baskinton, Louisiana, 15-minute series USGS topographic quadrangle (see Figure 3.3). This structure or one in the same location is also depicted on the 1987 Bee Bayou, Louisiana, 7.5-minute series USGS topographic quadrangle (USGS 1958, 1987). Though the

Table 6.8. 16RI319 Artifact Recovery by Provenience.

Site	Unit #	Depth	Group	Class	Type	Total
16RI319	STP N1000 E1010	0-15 cm bgs	Domestic	Ceramics	Whiteware	1
16RI319	STP N1000 E1010	0-15 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI319	STP N1000 E1010	0-15 cm bgs	Unidentified	Metal	Iron / Steel	1
16RI319	STP N1000 E1010	20-30 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI319	STP N1000 E980	5-15 cm bgs	Architecture	Flat Glass	Window Glass	2
16RI319	STP N970 E1010	5-15 cm bgs	Domestic	Ceramics	Ironstone	1
16RI319	STP N970 E1010	5-15 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	2
16RI319	STP N980 E1010	0-15 cm bgs	Architecture	Flat Glass	Window Glass	1
16RI319	STP N980 E1010	0-15 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	2
16RI319	STP N990 E1010	0-10 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI319	STP TR 22-2 N E-	0-15 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	4
16RI319	STP TR 22-2 N E-	0-15 cm bgs	Unidentified	Glass	Curved	1
Total						18



L15D001 (18MAY2015) RC

Figure 6.18. Schematic plan map of Site 16RI319.

structure is not visible in historical Google Earth aerial views, a patch of woods occupying its approximate location can be seen in aerial views from 1998, 2004, and 2005. In aerial views from 2006 and later, the patch of woods is no longer present and the area of the structure is occupied by agricultural fields. Since no other structures are depicted or visible near the site location on any other quadrangles or aerial photographs, it is most likely that the Site 16RI319 assemblage represents the remains of the structure first depicted on the 1958 Baskinton quadrangle (or a later structure that occupied the same location). The high proportion of domestic artifacts indicates that the historic structure represented by Site 16RI319 was utilized as a residence.

Summary and National Register Evaluation

Site 16RI319 likely represents the remains of a historic residence. No artifacts that could be definitively assigned to any specific temporal period were recovered, and no features or intact cultural midden deposits were observed at Site 16RI319.

Investigations at Site 16RI319 indicate that this resource contains a low to moderate density of subsurface remains compared with the other sites investigated in this study. Additionally, the site has experienced significant disturbance from agricultural activities and its deposits retain little integrity. Because of these factors, Site 16RI319 is thought to have a low potential to provide further information on the historic inhabitants of the region. No further work is recommended, and Site 16RI319 is recommended not eligible for listing in the NRHP.

Site 16RI320

Field Site Number: L15D001-16

UTM Coordinates:

Grid Origin: 15N, N3592893 E627985 (NAD 83)

Site Center: 15N, N3592893 E627991 (NAD 83)

Quadrangle Map: Bee Bayou, Louisiana, 7.5-minute

Elevation: 25 m (82 ft) AMSL

Components: historic

Specific Components: Industrial & Modern (1890–)

Site Type: unknown historic

Size: 67 m (220 ft) N–S x 37 m (121 ft) E–W

Distance/direction to nearest water: Hurricane Bayou, 240 m (787 ft) west; unnamed tributary of Cyprus Creek, 200 m (656 ft)

Type and extent of previous disturbance: extensive disturbance from agricultural activities

Topography: level

Vegetation: none (fallow agricultural field)

Ground surface visibility: nearly 100 percent; site located in open agricultural field

Recommended NRHP status: not eligible

Site Description

Site 16RI320 is located in an agricultural field in north central Richland Parish, Louisiana. It is situated approximately 280 m (919 ft) south of US 80 and 625 m (2,051 ft) east of Pettit Road. The site lies in a generally level, slightly undulating agricultural field at the west edge of an unpaved field road, roughly 240 m (787 ft) east of Hurricane Bayou and 200 m (656 ft) west of an unnamed tributary of Cypress Creek. The entire site area was covered by east–west trending ridges approximately 1 m (3 ft) in width and 10–20 cm (4–8 in) in height at the time of the survey, the result of previous plowing activities in the site area. The agricultural field was fallow at the time of the survey (Figure 6.19). Site 16RI320 was identified through shovel testing and the observation of a surface artifact scatter.

Investigation Methods

Site 16RI320 was recorded through the excavation of a single positive transect shovel test (27-3). This shovel test was assigned an arbitrary coordinate of N1000 E1000, and all delineation shovel tests that were subsequently excavated at the site were assigned coordinates based on their position relative to this shovel test. Delineation shovel tests were excavated at 10 m (33 ft) intervals.



Figure 6.19. Overview of Site 16RI320 from datum, facing east.

In total, 32 shovel tests were used to delineate the site boundaries, 6 of which were positive for cultural material and 26 of which were negative. Maximum site dimensions were 67 m (220 ft) north–south and 37 m (121 ft) east–west. Ground surface visibility was excellent, and a low density surface scatter of container glass and ferrous metal was also observed in the site area. Locational data points collected with a Trimble GeoXT GPS unit at Site 16RI320 include the site datum (grid position N1000 E1000) and the site boundary. A site sketch map was drawn showing the placement of the shovel test positions in relation to physiographic features (Figure 6.20).

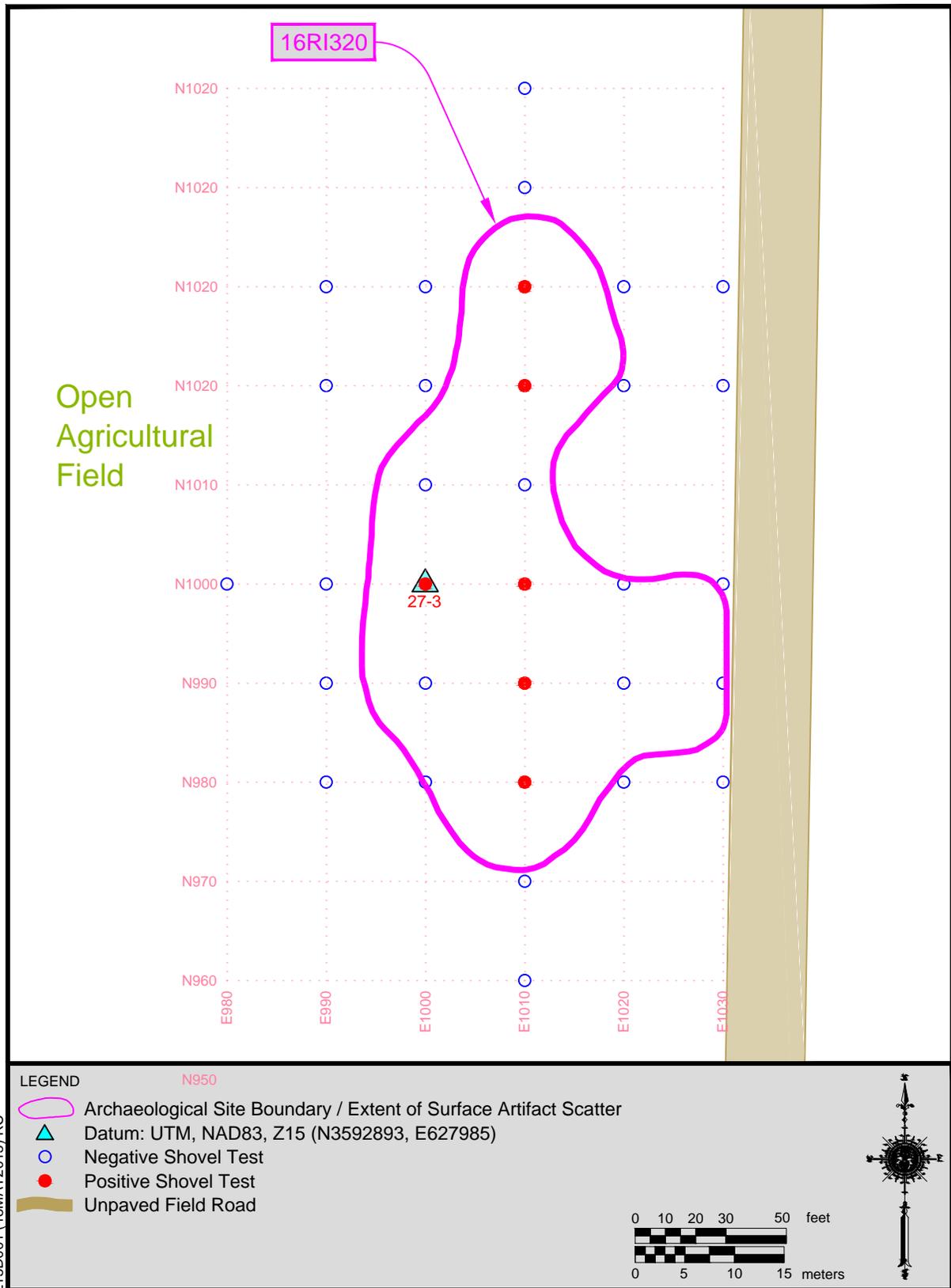
Depositional Context

Profiles observed at Site 16RI320 were generally similar to that of Egypt silt loam, which is mapped in much of the site area. A typical profile, taken from shovel test N1010 E1010, consisted of a brown (10YR 5/3) silt loam Ap horizon from 0 to 23 cm (0 to 9 in)

bgs, overlying a pale brown (10YR 6/3) silty clay loam E horizon from 23 to 34 cm (9 to 13 in) bgs. This profile was generally typical of the Egypt soil series mapped in much of the site area, but Gilbert soils were also occasionally observed. Artifacts were recovered from an average depth of 8 cm (3 in) bgs, with a maximum recovery depth of 15 cm (6 in) bgs. The presence of a well-defined plow zone in the profiles of all tests and the generally shallow recovery depth of all artifacts indicated that the entire site area had been significantly disturbed by agricultural activities.

Artifacts

A total of seven artifacts were recovered from Site 16RI320 during the current investigation, including four pieces of container glass and three nails (one cut, one wire and one unidentified) (Table 6.9). The majority of the recovered artifacts could not be definitively assigned to any specific temporal



L:15D001 (18MAY2015) RC

Figure 6.20. Schematic plan map of Site 16RI320.

Table 6.9. 16RI320 Artifact Recovery by Provenience.

Site	Unit #	Depth	Group	Class	Type	Total
16RI320	STP N1000 E1010	0-10 cm bgs	Architecture	Nails	Cut Nail: unspecified	1
16RI320	STP N1020 E1010	5-15 cm bgs	Architecture	Nails	Wire Nail	1
16RI320	STP N1020 E1010	5-15 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI320	STP N1030 E1010	0-10 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
16RI320	STP N980 E1010	0-15 cm bgs	Architecture	Nails	Indeterminate	1
16RI320	STP N990 E1010	0-15 cm bgs	Domestic	Container Glass	Automatic Bottling Machine	1
16RI320	STP TR 27-3	0-15 cm bgs	Domestic	Container Glass	Undiagnostic container fragment	1
Total						7

period, but the wire nail and one container glass fragment formed in an automatic bottling machine could be dated to the late nineteenth and/or twentieth centuries, corresponding to the Industrial & Modern period.

No historic structures are depicted at, or visible in, the site location on any of the available USGS topographic quadrangles or Google Earth aerial views. Therefore, despite the presence of a small quantity of domestic artifacts and several nails, there is no strong indication that Site 16RI320 represents the remains of a historic residence, and the site function cannot be determined.

Summary and National Register Evaluation

Site 16RI320 represents the location of unknown historic activities. While a small quantity of diagnostic artifacts was recovered, no features or intact cultural midden deposits were observed at Site 16RI320.

Investigations at Site 16RI320 indicate that this resource contains a very low density of subsurface remains compared with the other sites investigated in this study. Additionally, the site has experienced significant disturbance from agricultural activities and its deposits retain little integrity. Because of these factors, Site 16RI320 is thought to have a low potential to provide further information on the historic inhabitants of the region. No further work is recommended, and Site 16RI320 is recommended not eligible for listing in the NRHP.

Isolated Finds

A total of 10 isolated finds were recorded in the Holly Ridge Northwest tract as a result of this project. These are defined as archaeological resources that yielded four or fewer artifacts within an area no greater than 30-x-30 m (98-x-98 ft). The boundaries of isolated finds were defined using the same methodology as archaeological sites (see Chapter 4). Eight of the isolated finds recorded during the current project are comprised of a single positive shovel test, with IF 16 incorporating two positive shovel tests and IF 1 consisting only of a surface find with no subsurface deposits. Nine of the isolated finds consist of historic resources, and one consists of a prehistoric resource. A detailed overview of the cultural material recovered from the isolated finds is provided in Table 5.4 in Chapter 5, and provenience and summary information for all isolated finds is presented in Tables 6.10 and 6.11 below.

Table 6.10. Isolated Find Artifact Recovery by Provenience.

Site	Unit #	Prehistoric Biface	Historic Ceramic	Historic Glass	Historic Metal	Total Artifacts
IF 1	Surface Collection	1				1
IF 12	TR53, STP8			1		1
IF 13	TR50, STP5			2		2
IF 14	TR51, STP4		1	1		2
IF 15	TR29, STP4		1			1
IF 16	TR28, STP4			2		2
	N990 E1000			1		1
IF 17	TR25, STP4				1	1
IF 18	TR36, STP12				1	1
IF 19	TR22, STP1			3		3
IF 20	TR29, STP6			2		2
Total		1	2	12	2	17

Table 6.11. Isolated Find Summary Data.

Site	Grid Origin	Easting	Northing	Specific Component	# Positive STP
IF 1	Surface Collection Location	627952	3591872	Prehistoric Archaic	0
IF 12	TR53, STP8	628567	3592881	Unknown Historic	1
IF 13	TR50, STP5	628588	3593024	Unknown Historic	1
IF 14	TR51, STP4	628349	3592985	Unknown Historic	1
IF 15	TR29, STP4	628029	3592793	Unknown Historic	1
IF 16	TR28, STP4	628006	3592839	Unknown Historic	2
IF 17	TR25, STP4	627971	3592988	Unknown Historic	1
IF 18	TR36, STP12	628243	3592427	Unknown Historic	1
IF 19	TR22, STP1	628004	3593116	Unknown Historic	1
IF 20	TR29, STP6	628155	3592785	Unknown Historic	1

Chapter 7. Conclusions and Recommendations

CRA personnel completed a cultural resource file search and intensive field survey during the period extending from February 18 to April 17, 2015, as part of the Louisiana Economic Development certification process for the Holly Ridge Northwest property in Richland Parish, Louisiana. This property consisted of a single tract measuring approximately 115 ha (284 acres) in area and was located to the south of the community of Holly Ridge, Louisiana.

The records review consisted of a search of online files maintained by the Louisiana Office of Cultural Development, Division of Archaeology, correspondence with the project proponent regarding recently completed work on the property, and a review of historic maps to identify any cultural resources or cultural resource investigations previously documented in the area. The records review indicated that five cultural resource investigations (22-0091, 22-1183, 22-1703, 22-4252, and a reconnaissance survey), and seven archaeological sites (16RI5, 16RI213, 16RI238, and 16RI302–16RI305) had been previously documented within a 1.6 km (1.0 mi) radius of the project area. In addition, the review of historic maps indicated that 11 structures were depicted in the project area, suggesting that historic cultural resources were likely to be found in the area.

Of the previous work in the area, one project, the reconnaissance survey, examined the current project area in a reconnaissance-level pedestrian survey. That work identified a number of field loci and documented three sites in the project area (16RI303–16RI305). As the reconnaissance survey was intended for planning purposes, no systematic subsurface investigation or site delineation was performed during that investigation.

The current field investigation consisted of a shovel test survey with screened 30-x-30 cm (12-x-12 in) shovel tests excavated at 30 or 50 m (98 or 164 ft) intervals, depending upon the probability of encountering cultural

material, as outlined in the Louisiana Office of Cultural Development, Division of Archaeology guidelines. The entire project area was also visually inspected for cultural material during the shovel test survey. This work resulted in the recording of 8 new archaeological sites (16RI313–16RI320) and 10 isolated finds, and the relocation and delineation of one site (16RI305) previously documented during the reconnaissance survey. The locations of the two other sites previously documented during the reconnaissance survey (16RI303 and 16RI304) were revisited and examined, but no cultural material associated with these sites was located on the surface or in the shovel tests conducted at the locations.

All of the cultural resources documented during this project were investigated following the Louisiana Office of Cultural Development, Division of Archaeology guidelines, including the previously documented sites and field loci. Due to a high level of disturbance and lack of integrity, all 11 of the archaeological sites (16RI303–305 and 16RI313–320) and the 10 isolated finds within the investigated area have a low research potential. As a result, these sites are recommended as not eligible for listing in the NRHP, and no further work is recommended.

Based on the findings of the records review and cultural resource survey, no archaeological sites or historic properties listed in, or recommended eligible for listing in, the NRHP will be affected by the proposed development of the property. The area is considered cleared from a cultural resources perspective, and no additional management action is recommended.

Note that a principal investigator or field archaeologist cannot grant clearance to a project. Although the decision to grant or withhold clearance is based, at least in part, on the recommendations made by the field investigator, clearance may be obtained only through an administrative decision made by the SHPO.

If any previously unrecorded archaeological materials are encountered during activities in the project area, the SHPO should be notified immediately. If human skeletal material is discovered, the construction activities should cease, SHPO should be contacted immediately, and SHPO guidelines should be followed.

References Cited

- Allen, Thurman E.
1993 *Soil Survey of Richland Parish, Louisiana*. U.S. Department of Agriculture, Soil Conservation Service, Washington, D.C.
- Anderson, David G., and Glenn Hanson
1988 Early Archaic Settlement in the Southeastern United States: A Case Study from The Savannah River Basin. *American Antiquity* 53:262–286.
- Anderson, David G., J.W. Joseph, Mary Beth Reed, and Steven D. Smith
1999 *JRTC and Fort Polk Historic Preservation Plan. Prehistory and History in Western Louisiana: A Technical Synthesis of Cultural Resource Investigations*. Southeast Archaeological Center, National Park Service, Tallahassee, Florida.
- Anderson, David G., and Robert C. Mainfort, Jr.
2002 *The Woodland Southeast*. The University of Alabama Press, Tuscaloosa, Alabama.
- Anderson, David G., and Kenneth E. Sassaman
1996 *The Paleoindian and Early Archaic Southeast*. The University of Alabama Press, Tuscaloosa, Alabama. Pp. 380–84.
- Anderson, David G., and Steven D. Smith
2003 *Archaeology, History, and Predictive Modeling Research at Fort Polk, 1972–2002*. The University of Alabama Press, Tuscaloosa, Alabama. Pp. 349–399.
- Ball, Donald B.
1984 Historic Artifact Patterning in the Ohio Valley. *Proceedings of the Symposium on Ohio Valley Urban and Historic Archaeology* II:24–36.
- Baughner-Perlin, Sherene
1982 Analyzing Glass Bottles for Chronology, Function, and Trade Networks. In *Archeology of Urban America*, edited by Roy S. Dickens, pp. 250–291. Academic Press, New York.
- Bemrose, Geoffrey
1952 *Nineteenth Century English Pottery and Porcelain*. Pitman Publishing Corporation, New York.
- Bense, Judith A.
1994 *Archaeology of the Southeastern United States: Paleoindian to World War I*. Academic Press. San Diego, California.
- Blaszczyk, Regina Lee
2000 *Imagining Consumers: Design and Innovation from Wedgwood to Corning*. Johns Hopkins University Press, Baltimore, Maryland.
- Boger, L. A.
1971 *The Dictionary of World Pottery and Porcelain*. Charles Scribner and Sons, New York.
- Buckley, Francis
1934 Old English Glass. The Birmingham Glass Pinchers. *Glass* 11(May):187–188.
- Cameron, Elisabeth
1986 *Encyclopedia of Pottery and Porcelain, 1800–1960*. Facts on File Publications, New York.
- Campbell, L. Janice, Prentice M. Thomas, Jr., and James H. Mathews
1987 *Archaeological Testing in the Birds Creek Drainage, Fort Polk Military Reservation, Vernon Parish, Louisiana*. New World Research Report of Investigations 154, Fort Walton Beach, Florida.

- Campbell, L. Janice, and Carol S. Weed
1986 *Cultural Resources Investigations in the Proposed Multipurpose Range Complex Area, Fort Polk, Vernon Parish, Louisiana*. New World Research. Report of Investigations 85–6, Pollock, Louisiana. Submitted to Archaeological Services Branch, National Park Service, Southeast Regional Office, Atlanta, Georgia.
- Carpentier, Donald and Jonathan Rickard
2001 Slip Decoration in the Age of Industrialization. In *Ceramics in America 2001*, edited by Robert Hunter, pp. 115–134. University Press of New England, Hanover, NH.
- Chance, David H., and Jennifer V. Chance
1976 *Kanaka Village, Vancouver Barracks 1974*. Reports in Highway Archaeology, No. 3. Office of Public Archaeology, University of Washington, Seattle.
- Claggett, Stephen R., and John S. Cable
1982 *The Haw River Sites: Archaeological Investigations at Two Stratified Sites in the North Carolina Piedmont*. Commonwealth Associates, Inc., Jackson, Michigan.
- Cochran, Jennifer L.
2013 *An Intensive Phase I Cultural Resources Survey of 32 Pole Locations along Entergy's Proposed Oakridge to Dunn Transmission Right-of-Way, Morehouse and Richland Parishes, Louisiana (Negative Findings)*. Horizon Environmental Services, Inc., Austin, Texas.
- Collard, Elizabeth
1967 *Nineteenth-Century Pottery and Porcelain in Canada*. McGill University Press, Montreal, Canada.
- Daigle, J.J., G.E. Griffith, J.M. Omernik, P.L. Faulkner, R.P. McCulloh, L.R. Handley, L.M. Smith, and S.S. Chapman
2006 Ecoregions of Louisiana (color poster with map, descriptive text, summary tables, and photographs). U.S. Geological Survey, Reston, Virginia.
- Davidson, James M.
2006 Material Culture, Chronology, and Socioeconomics. In *Two Historic Cemeteries in Crawford County, Arkansas*. Robert C. Mainfort, Jr. and James M. Davidson, editors. Arkansas Archeological Survey Research Series No. 62, pp. 98–218.
- Denker, Ellen, and Bert Denker
1982 *The Warner Collector's Guide to North American Pottery and Porcelain*. Warner Books, New York.
- Dodd, Arthur Edward
1964 *Dictionary of Ceramics*. Philosophical Library Inc., New York.
- Duffy, John
1978 Social Impact of Disease in the Late Nineteenth Century. In *Sickness and Health in America: Readings in the History of Medicine and Public Health*, edited by Judith Walzer Leavitt and Ronald L. Numbers, pp. 395–402. University of Wisconsin Press, Madison.
- Earth Tech, Inc.
2002 *Final Integrated Cultural Resources Management Plan for Louisiana Army Ammunition Plant, Louisiana*. Prepared by Earth Tech, Inc. Colton, California.
- Espenshade, Christopher T. and Paul Brockington
1987 *Archaeological Survey and Testing of the Proposed ANR Pipeline in Ouachita, Morehouse, and Richland Parishes, Louisiana*. Brockington and Associates, Atlanta, Georgia.
- Faulkner, Charles H.
2000 *Historical Archaeology Laboratory Manual*. Department of Anthropology, University of Tennessee, Knoxville.
- Fay, Robert P.
1986 *Archaeological Investigations at Liberty Hall, Frankfort, Kentucky*. Kentucky Heritage Council, Frankfort, Kentucky.

- Fields, Ross C., Margaret A. Howard, Eloise F. Gadus, Jack M. Jackson, Martha Doty Freeman, and L. Wayne Klement
1989 *Survey and Testing Along Boone Creek, Louisiana Army Ammunition Plant, Webster Parish, Louisiana*. Prewitt and Associates, Inc.
- Fike, Richard E.
1987 *The Bottle Book: A Comprehensive Guide to Historic, Embossed Medicine Bottles*. Pergerine Smith Books, Salt Lake City, Utah.
- Flores, D.L.
1984 *Jefferson and Southwestern Expansion – The Freeman and Custis Accounts of the Red River Expedition of 1806*. University of Oklahoma Press, Norman.
- Friedman, Lawrence J.
1970 *The White Savage: Racial Fantasies in the Postbellum South*. Prentice-Hall, Inc., Englewood Cliffs, New Jersey.
- Gagliano, Sherwood M., and Hiram F. Gregory, Jr.
1965 A Preliminary Survey of Paleoindian Points from Louisiana. *Louisiana Studies* 4(1):62–77.
- Gates, William C., Jr., and Dana E. Ormerod
1982 The East Liverpool Pottery District: Identification of Manufacturers and Marks. *Historical Archaeology* 16(1–2):1–358.
- Genheimer, Robert A.
1987 *Archaeological Testing, Evaluation, and Final Mitigation Excavations at Covington's Riverfront Redevelopment Phase II Site, Kenton County, Kentucky*. Prepared by R. B. Archaeological Services, Covington, Kentucky, and Cultural Resource Analysts, Inc., Lexington, Kentucky. Submitted to the City of Covington, Kentucky.
- Gibson, Jon L.
2010 Poverty Point Redux. In *Archaeology of Louisiana*, edited by Mark A. Rees. University of Louisiana Press, Baton Rouge.
- Girard, Jeffrey S.
2000 *Regional Archaeology Program, Management Unit 1, Eleventh Annual Report*. Louisiana Division of Archaeology, Department of Culture, Recreation and Tourism. Baton Rouge.
2010 Caddo Communities of Northwest Louisiana. In *Archaeology of Louisiana*. Ed. Mark A. Rees. University of Louisiana Press, Baton Rouge.
2012 Settlement Patterns and Variation in Caddo Pottery Decoration: A Case Study of the Willow Chute Bayou Locality. In *The Archaeology of the Caddo*, pp. 239–287. Ed. Timothy K. Pertulla and Chester P. Walker. University of Nebraska Press, Lincoln.
- Godden, Geoffrey A.
1963 *British Pottery and Porcelain 1780–1850*. Baker, London, England.
1964 *An Illustrated Encyclopedia of British Pottery and Porcelain*. Bonanza Books, New York.
- Gonzalez, Mark
2000 *Collecting Fiesta, Lu-Ray, and Other Colorware*. L-W Book Sales, Marion, Indiana.
- Goodyear, Albert C.
2006 Evidence of Pre-Clovis Sites in the Eastern United States. In, *Paleoamerican Origins: Beyond Clovis*, ed. Robson Bonnicksen, Bradley T. Lepper, Dennis J. Stanford, and Michael R. Waters, pp. 103–112. Texas A&M University Press, College Station.
- Gregory, Hiram F., and H.K. Curry
1978 *Natchitoches Parish Cultural and Historic Resources: Prehistory*. Natchitoches Parish Planning Commission, Natchitoches.
- Hays, Christopher T., and Richard A. Weinstein
2010 Tchefuncte and Early Woodland. In *Archaeology of Louisiana*, edited by Mark A. Rees. University of Louisiana, Baton Rouge.

- Hillman, Michael M.
1980 Archaeological Survey, Kisatchie National Forest, Summer 1979. Manuscript on file, Kisatchie National Forest, Pineville, Louisiana.
- House, John H.
1972 *Archaeological Salvage in the Basin of Lake Rodemacher, Rapides Parish, Louisiana*. Gulf South Research Institute, Baton Rouge.
- Hughes, Bernard, and Therle Hughes
1968 *The Collector's Encyclopedia of English Ceramics*. Abbey Library, London, England.
- Husfloen, Kyle
1992 *Collector's Guide to American Pressed Glass 1825–1915*. Wallace-Homestead Book Company, Radnor, Pennsylvania.
- Jennings, Thomas A.
2008 San Patrice: An Example of Late Paleoindian Adaptive Versatility in South Central North America. *American Antiquity* 73(3):539–559.
- Johnson, Jay K.
1981 *Lithic Procurement and Utilization Trajectories: Analysis, Yellow Creek Nuclear Power Plant Site, Tishomingo County, Mississippi*, Vol. II. Archaeological Papers No. 1. Center for Archaeological Research, University of Mississippi.
- Johnson, David M.
1984a *Cultural Resources Survey on the Kisatchie National Forest, F.Y. 1983*. Kisatchie National Forest, Pineville, Louisiana.
1984b *Cultural Resources Survey on the Kisatchie National Forest, F.Y. 1984*. Kisatchie National Forest, Pineville, Louisiana.
- Johnson, David M., James R. Morehead, Timothy Phillips, and James P. Whelan, Jr.
1986 *The Winnfield Tornado: Cultural Resources Survey and Predictive Modeling in the Kisatchie National Forest, Winn Parish, Louisiana*. Kisatchie National Forest, Pineville, Louisiana.
- Jones, Olive
2000 A Guide to Dating Glass Tableware: 1800 to 1940. In *Studies in Material Culture*, edited by Karlis Karklins, pp.141–232. The Society for Historical Archaeology, Pennsylvania.
- Jones, Olive, and Catherine Sullivan
1985 *The Parks Canada Glass Glossary for the Description of Containers, Tableware, Flat Glass, and Closures*. Studies in Archaeology, Architecture and History. National Historic Parks and Sites Branch, Parks Canada.
- Kelley, David B., Sally S. Victory, and Martha Doty Freeman
1988 *Archaeology in the Flatwoods: An Intensive Survey of Portions of the Louisiana Army Ammunition Plant, Bossier and Webster Parishes, Louisiana*. Coastal Environments, Inc., Baton Rouge.
- Kelly, Robert L.
1988 The Three Sides of a Biface. *American Antiquity* 53:717-734.
- Kornfeld, Marcel
2007 Are Paleoindians of the Great Plains and Rockies Subsistence Specialists? In, *Foragers of the Terminal Pleistocene in North America*. Ed. Walker, R.B. and Driskell, B.N., University of Nebraska Press, Lincoln, Nebraska, pp. 32–58.
- Lange, Frederick W.
1974 A Report on Data Pertaining to the Caddo Treaty of July 1, 1835: The Historical and Anthropological Background and Aftermath. In *Caddoan Indians II*. Garland Publishing, Inc. New York.

- Lee, Aubra L.
2010 Troyville and the Baytown Period. In *Archaeology of Louisiana*, edited by Mark A. Rees. University of Louisiana Press, Baton Rouge.
- Lehner, Lois
1980 *Complete Book of American Kitchen and Dinner Wares*. Wallace-Homestead Books, Des Moines, Iowa.
- Lindsey, Bill
2008 Historic Glass Bottle Identification and Information. Electronic document, <http://www.sha.org/bottle/index.htm>, accessed June 12, 2008.
- Little, Wilfred L.
1969 *Staffordshire Blue: Underglaze Blue Transfer Printed Earthenware*. Crown Publishers, Inc., New York.
- Lockhart, Bill
2006 The Color Purple: Dating Solarized Amethyst Container Glass. *Historical Archaeology* 40(2):45–56.
- Lofstrom, Edward U., Jeffrey P. Tordoff, and Douglas C. George
1982 A Seriation of Historic Earthenwares in the Midwest, 1780–1870. *Minnesota Archaeologist* 41(1):3–29.
- Louisiana Geological Survey
2008 Generalized Geology of Louisiana. <http://www.lgs.lsu.edu/>, accessed 24 October 2012.
- McGahey, Samuel O.
2000 *Mississippi Projectile Point Guide*. Archaeological Report No. 31. Mississippi Department of Archives and History, Jackson.
- McGimsey, Charles R.
2010 Marksville and Middle Woodland. In *Archaeology of Louisiana*, edited by Mark A. Rees. University of Louisiana Press, Baton Rouge.
- Maggard, Greg J., and Kary L. Stackelbeck
2008 Paleoindian Period. In *The Archaeology of Kentucky: An Update*, Vol. 1, edited by David Pollack, pp. 109–192. State Historic Preservation Comprehensive Plan Report No. 3. Kentucky Heritage Council, Frankfort.
- Majewski, Teresita, and Michael J. O'Brien
1984 *An Analysis of Historical Ceramics from the Central Salt River Valley of Northeast Missouri*. Publications in Archaeology, Number 3. American Archaeology Division, Department of Anthropology, University of Missouri, Columbia, Missouri.
1987 The Use and Misuse of Nineteenth-Century English and American Ceramics in Archaeological Analysis. In *Advances in Archaeological Method and Theory*, Volume 11, edited by Michael J. Schiffer, pp 97–209. Academic Press, New York.
- Mankowitz, Wolf, and Reginald G. Haggart
1957 *The Concise Encyclopedia of English Pottery and Porcelain*. Hawthorne Books, New York.
- Mann, Rob
2010 French Colonial Archaeology. In *Archaeology of Louisiana*, edited by Mark A. Rees. University of Louisiana Press, Baton Rouge.
- Meltzer, David J.
2009 *First Peoples in a New World: Colonizing Ice Age America*. University of California Press, Berkeley.
- Moir, Randall W.
1977 Window Glass: A Statistical Perspective. Manuscript on file, Archaeology Research Program, Southern Methodist University, Dallas, Texas.

- 1987 Socioeconomic and Chronometric Patterning of Window Glass. In *Historic Buildings, Material Culture, and People of the Prairie Margin*, edited by David H. Jurney and Randall W. Moir, pp. 73–81. Richland Creek Technical Series, Vol. V. Southern Methodist University, Dallas, Texas.
- Neale, Gillian
2005 *Miller's Encyclopedia of British Transfer-printed Pottery Patterns: 1790–1930*. Sterling Publishing Co., Inc., New York.
- Nelson, Lee H.
1968 *Nail Chronology as an Aid to Dating Old Buildings*. American Association for State and Local History, Technical Leaflet 15. American Association for State and Local History, Madison, Wisconsin.
- Neuman, Robert W.
1984 *An Introduction to Louisiana Archaeology*. Louisiana State University Press, Baton Rouge.
- Norman-Wilcox, Gregor
1978 Staffordshire in a Nutshell. In *English Pottery and Porcelain*, edited by P. Atterbury, pp. 166–170. Universe Books, New York.
- Orser, Charles E.
1988 *The Material Basis of the Postbellum Tenant Plantation*. The University of Georgia Press, Athens, Georgia.
- Perkinson, Phil
1971 North Carolina Fluted Points: Survey Report Number One. *Southern Indian Studies* 23:3–40.
- Phillips, Maureen K.
1996 Mechanic Geniuses and Duckies Redux: Nail Makers and Their Machines. *APT Bulletin*, 27(1/2):47–56.
- Phillips, Timothy P., and Charles G. Willingham
1990 *Cultural Resources Survey of the North Fort Polk Family Housing Area, Fort Polk, Vernon Parish, Louisiana*. Submitted to Headquarters, 5th Infantry Division, and Fort Polk. Report on file with Division of Archaeology, Baton Rouge, Louisiana.
- Price, G. R. Dennis and Lorraine Heartfield
1977 *A Cultural Resource Reconnaissance of Portions of Big and Big Colewa Creeks; Richland Parish, Louisiana*. Lorraine Heartfield Greene Research Institute, College of Pure and Applied Sciences, Northeast Louisiana University, Monroe, Louisiana.
- Price, Cynthia R.
1981 Early to Mid-Nineteenth Century Refined Earthenwares. In *A Guide for Historical Archaeology in Illinois*, edited by Charles E. Orser, Jr., pp. 24–48. Mid-American Research Center Research Paper Number 1. Loyola University, Chicago.
- Priess, Peter
1973 Wire Nails in North America. *Bulletin of the Association for Preservation Technology*, 5(4):87–92.
- Pullin, Anne G.
1986 *Glass Signatures, Trademarks and Trade Names from the Seventeenth to the Twentieth Century*. Wallace-Homestead Book Company, Lombard, Illinois.
- Rees, Mark A.
2010a Introduction. In *Archaeology of Louisiana*. Ed. Mark A. Rees. Louisiana State University Press, Baton Rouge.
2010b Paleoindian and Early Archaic. In *Archaeology of Louisiana*. Ed. Mark A. Rees. Louisiana State University Press, Baton Rouge.
2010c Plaquemine and Mississippian. In *Archaeology of Louisiana*. Ed. Mark A. Rees. Louisiana State University Press, Baton Rouge.

- Revi, Albert C.
1964 *American Pressed Glass and Figure Bottles*. Thomas Nelson and Sons, New York.
- Rock, James T.
1980 American Bottles: A Few Basics. Manuscript on file at the Klamath National Forest, Region B, United States Department of Agriculture.
- Roe, Lori M., and Timothy M. Schilling
2010 Coles Creek. In *Archaeology of Louisiana*, edited by Mark A. Rees. University of Louisiana Press, Baton Rouge.
- Roenke, Karl G.
1978 *Flat Glass, Its Use as a Dating Tool for Nineteenth Century Archeological Sites in the Pacific Northwest and Elsewhere*. Northwest Anthropological Research Notes, Memoir No.4. Moscow, Idaho.
- Samford, Patricia M.
1997 Response to a Market: Dating English Underglaze Transfer-Printed Wares. *Historical Archaeology* 31(2):1–30.
- Saunders, Joe
1991 *1991 Annual Report for Management Unit 2 Regional Archaeology Program*. Northeast Regional Archaeologist, Northeast Louisiana University, Monroe, Louisiana.
- Saunders, Joe W.
2010 Middle Archaic and Watson Brake. In *Archaeology of Louisiana*. Ed. Mark A. Rees. University of Louisiana, Baton Rouge.
- Schambach, F.F., and A.M. Early
1982 Southwest Arkansas. In *A State Plan for the Conservation of Archaeological Resources in Arkansas*. Ed., Hester A. Davis, pp. SW1–SW149. Research Series No. 21. Arkansas Archaeological Survey, Fayetteville.
- Schambach, Frank B.
1982 The Archaeology of the Great Bend Region in Arkansas. In *Contributions to the Archeology of the Great Bend Region of the Red River Valley Southwest Arkansas*, Ed. F.F. Schambach and F. Rackerby. Research Series No. 22. Arkansas Archaeological Survey, Fayetteville.
- 1998 Pre-Caddoan Cultures and the Trans-Mississippi South. In *Caddoan Archeology* Vol. II, No. 3:2–8.
- Servello, A. Frank (editor)
1983 *U.S.L. Fort Polk Archaeological Survey and Cultural Resource Management Program*. 2 Volumes University of Southwestern Louisiana, Lafayette.
- Smith, Lawson M., Joseph B. Dunbar, and Louis D. Britsch
1986 *Geomorphological Investigation of the Atchafalaya Basin, Area West, Atchafalaya Delta, and Terrebonne Marsh*, Vol. 1. Technical Report GL-86-3. Department of the Army Waterways Experimental Station, U.S. Army Corps of Engineers, Vicksburg District.
- Smith, Steven D., Philip G. Rivet, Kathleen M. Byrd, and Nancy W. Hawkins
1983 *Louisiana's Comprehensive Archaeological Plan*. State of Louisiana, Department of Culture, Recreation and Tourism. Office of Cultural Development, Division of Archaeology.
- Snyder, Jeffrey B.
2000 *Historical Staffordshire: American Patriots and Views*. 2nd. ed. Schiffer, Atglen, Pennsylvania.
- South, Stanley
1977 *Method and Theory in Historical Archaeology*. Academic Press, New York.
- Southern Publishing Company
1890 *Biographical and Historical Memoirs of Northwest Louisiana*. The Southern Publishing Company, Nashville, Tennessee.

- Sprague, Roderick
1981 A Functional Classification for Artifacts from 19th and 20th Century Historical Sites. *North American Archaeologist* 2(3):251–261.
- Stewart-Abernathy, Leslie C.
1986 *The Moser Farmstead, Independent But Not Isolated: The Archeology of a Late Nineteenth Century Ozark Farmstead*. Arkansas Archeological Survey Research Series No. 26, Fayetteville, Arkansas.
- Suhm, Dee Ann, and Alex D. Krieger
1954 *An Introductory Handbook of Texas Archaeology*. Texas Archaeological Society, Austin.
- Swann, Brenda M.
2002 Material Culture at Presidio Santa Maria de Galve (1698–1722): Combining the Historical and Archaeological Records. *Southeastern Archaeology* 21(1):64–78.
- Swanton, J.R.
1946 *The Indians of the Southeastern United States*. BAE Bulletin 137. Bureau of American Ethnology, Smithsonian Institution, Washington, DC.
- Thomas, Prentice M., Jr., James R. Morehead, Joseph Meyer, James H. Mathews, and L. Janice Campbell
1997 *Fort Polk 28: The Results of a Twenty-Eighth Program of Site Testing at Ten Sites, Fort Polk Military Reservation, Natchitoches and Vernon Parishes, Louisiana*. Prentice Thomas and Associates, Report of Investigations No. 340, Fort Walton Beach, Florida.
- Thomas, Prentice M., Jr., Steven Shelly, L. Janice Campbell, Mark T. Swanson, Carol S. Weed, and John P. Lenzer
1982 *Cultural Resources Investigations at the Fort Polk Military Reservation, Vernon, Sabine, and Natchitoches Parishes, Louisiana*. New World Research, Report of Investigations 69, Pollock, Louisiana.
- Toulouse, Julian H.
1969 A Primer on Mold Seams: Part 2. *Western Collector* 7(12):578–587.
1971 *Bottle Makers and Their Marks*. Thomas Nelson, New York.
- Turner, Ellen Sue, and Thomas R. Hester
1993 *A Field Guide to Stone Artifacts of Texas Indians*, 2nd ed. Texas Monthly Press, Austin, Texas.
- United States Department of Agriculture
2015 Custom Soil Resource Report for Richland Parish, Louisiana. U.S. Department of Agriculture, Natural Resources Conservation Service, Washington, D.C.
- United States Geological Survey
1935 Baskinton, Louisiana USGS 15-minute series topographic quadrangle map.
1958 Baskinton, Louisiana USGS 15-minute series topographic quadrangle map.
1987 Bee Bayou, Louisiana USGS 7.5-minute series topographic quadrangle map.
- Wagner, Mark, and Mary McCorvie
1992 *The Archeology of the Old Landmark. Nineteenth Century Taverns Along the St. Louis Vincennes Trace in Southern Illinois*. Illinois Department of Transportation and the Center for American Archeology, Kampsville, Illinois.
- Wall, Bennet H.
2002 *Louisiana: A History* (Fourth Edition). Forum Press, Wheeling, Illinois.
- Watkins, Lura Woodside
1930 *Cambridge Glass 1818 to 1888: The Story of the New England Glass Company*. Bramhall House, New York.
- Webb, Clarence H.
1982 *The Poverty Point Culture*. Revised; originally published 1977. Geoscience and Man 17. Louisiana State University, Baton Rouge.

- 2000 *Stone Points and Tools of Northwestern Louisiana*. Special Publications of the Louisiana Archaeological Society, No. 1, 2nd ed. Lafayette.
- Webb, Clarence H., and Hiram F. Gregory
1978 *The Caddo Indians of Louisiana*. 2nd ed.. Anthropological Study No. 2. Louisiana Archaeological Survey and Antiquities Commission, Department of Culture, Recreation and Tourism, Baton Rouge.
- Webb, Clarence H., and Ralph McKinney
1975 Mounds Plantation (16CD12), Caddo Parish, Louisiana. *Louisiana Archaeology* 2:39-127.
- Webb, Clarence H., Joel L. Shiner, and E. Wayne Roberts
1971 The John Pearce Site (16CD56): A San Patrice Site in Caddo Parish, Louisiana. *Bulletin of the Texas Archaeological Society* 42:1-49.
- Wesler, Kit W.
1984 A Spatial Perspective on Artifact Group Patterning Within the Houselot. In *Proceedings of the Symposium on Ohio Valley Urban and Historic Archeology*, II:37-44.
- Wessel, Terri Caruso, Sharon Rushing, Jeanne Binning, and Don Hunter
1993 *Cultural Resources Investigation of England Air Force Base, Louisiana*. Earth Technology Corporation, Coastal Environments, Inc. and Tetra Tech, Inc.
- Wetherbee, Jean
1980 *A Look at White Ironstone*. Wallace-Homestead Book Company, Des Moines, Iowa.
- Williams, S.
1974 The Aboriginal Location of the Kadohodacho and Related Tribes. In, *Caddoan Indians I*. pp. 281-330. Garland Publishing, Inc. New York.
- Willingham, Charles G., and Timothy Phillips
1987 *Cultural Resources Surveys on the Kisatchie National Forest, Louisiana, FY 1985*. Kisatchie national Forest Report of Investigations No. 2, Kisatchie National Forest, Pineville, Louisiana.
- Yodis, Elaine G., and Craig E. Colten,
2003 *Geography of Louisiana*. McGraw-Hill Primus Custom Publishing, 4th Edition.

APPENDIX A. RECOVERED HISTORIC ARTIFACTS

Table A-1. Recovered Historic Artifacts.

Bag	Site	Unit #	Dep	General Item	1	2	3	4	5	Count	Weight	Diameter	Unit Mea	Vessel Part	Vessel Type	Function	tMin	tMax	tRef	Comments
001	16RI317	STP TR 1-18	0-13 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Light green glass	1	53.2	58.6	mm	Body with base	-					very thick, round base fragment; embossed: "1" and "54"; cup bottom mold
001	16RI317	STP TR 1-18	0-13 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	34	133.2		mm	Body	Canning jar	Bottle - Jar				likely the un-embossed parts of Mason jar; all thin to medium thick, slight to moderately curved
001	16RI317	STP TR 1-18	0-13 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	28.2		mm	Base	Canning jar	Bottle - Jar				Likely Mason jar base; embossing: "S" (top) and "2" (bottom); round, thick fragment; cup bottom mold
001	16RI317	STP TR 1-18	0-13 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	3.7		mm	Body	Canning jar	Bottle - Jar				Likely part of Mason jar; wide-mouthed external thread finish, medium thick
001	16RI317	STP TR 1-18	0-13 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	3	10.7		mm	Body	Mason's patent canning jar	Bottle - Jar				embossed Mason jar fragments
001	16RI317	STP TR 1-18	0-13 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	4.8		mm	Body	-					row of molded ridge present on edge; medium thick, moderately curved fragment
001	16RI317	STP TR 1-18	0-13 cm bgs	Historic	Architecture	Nails	Indeterminate		Indeterminate	1	0.5		mm	Body	-		1830	Majewski and O'Brien 1987:119; Smith 1983:119		shank fragment; too corroded/degraded to determine type
002	IF-19	STP TR 22-1	10-20 cm bgs	Historic	Architecture	Flat Glass	Window Glass	>2.41 mm thick	-	1	0.9		mm	Body	-					clear glass
002	IF-19	STP TR 22-1	10-20 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Green glass	1	0.4		mm	Body	-					thin, slightly curved fragment
002	IF-19	STP TR 22-1	10-20 cm bgs	Historic	Architecture	Flat Glass	Window Glass	0.86 - 2.41 mm thick		1	0.8		mm	Body	-					clear glass
003	16RI319	STP TR 22-2 N E-	0-15 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Amber glass	3	2.8		mm	Body	-					medium thick, slight to moderately curved; stippling like design present on 2 fragments.
003	16RI319	STP TR 22-2 N E-	0-15 cm bgs	Historic	Unidentified	Glass	Curved		-	1	3.7		mm	Body	-					milk glass, possible cosmetic lid; rim fragment; thick, slightly curved
003	16RI319	STP TR 22-2 N E-	0-15 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	0.4		mm	Body	-					medium thick fragment with moderate curve
004	16RI317	STP TR 23-2	0-10 cm bgs	Historic	Architecture	Construction Material	Ceramic	Tile		1	7.56	23.55	mm	Body	-					complete square tile; white with black specks on it; porcelain with "salt & pepper" design
005	16RI318	STP TR 25-2	10-20 cm bgs	Historic	Unidentified	Metal	Indeterminate metal		Item / part	1	20.71		mm	Body	-					fragment; flat on 1 side with 2 ridges that cross each other on other side
005	16RI318	STP TR 25-2	10-20 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	3.05		mm	Indeterminate part	-					melted & malformed; possible lip fragment
006	IF-17	STP TR 25-4	0-10 cm bgs	Historic	Unidentified	Metal	Iron / Steel		Flat: thin	1	15.05		mm	Body	-					amorphous shape; no other attributes
007	16RI320	STP TR 27-3	0-15 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	0.6		mm	Body	-					thin, slightly curved fragment
008	IF-16	STP TR 28-4	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	2	1.78		mm	Body	-					medium thick fragments with slight curves
009	IF-15	STP TR 29-4	0-10 cm bgs	Historic	Domestic	Ceramics	Porcelain: hard paste	Undecorated	-	1	1.55		mm	Body	-		1800	Faulkner 2000		medium thick, moderately curved fragment
010	IF-20	STP TR 29-6	0-10 cm bgs	Historic	Unidentified	Glass	Indeterminate		-	2	0.05		mm	Body	-					very small, flaked-off fragments; colorless/clear
011	16RI305	STP TR 32-1	0-20 cm bgs	Historic	Domestic	Ceramics	Whiteware	Transfer printed	-	1	0.58		mm	Rim, body, base	-		1830	Majewski and O'Brien 1987:119; Smith 1983:119		thin, flat with cobalt circle and line transfer print design covering fragment(mediterranean motif?)
011	16RI305	STP TR 32-1	0-20 cm bgs	Historic	Architecture	Flat Glass	Window Glass	0.86 - 2.41 mm thick		1	0.95		mm	Body	-					colorless fragment
011	16RI305	STP TR 32-1	0-20 cm bgs	Historic	Domestic	Other Tableware	Tableware (non-glass)		-	1	1.48		mm	Rim, body, base	-					thin, moderately curved, yellow plastic fragment; possible plate fragment; modern glass?

Bag	Site	Unit #	Dep	General Item	1	2	3	4	5	Count	Weight	Diameter	Unit Mea	Vessel Part	Vessel Type	Function	tMin	tMax	tRef	Comments
011	16RI305	STP TR 32-1	0-20 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	1.81		mm	Body	-					medium thick, slight to moderately curved fragment
012	IF-18	STP TR 36-12	0-15 cm bgs	Historic	Transportation	Railroad	Railroad spike	-	-	1	110.24	11.3	mm	Body	-		1764		Wikipedia 2006	incomplete. Fragment (head and shank) just under 5 inches long
013	IF-13	STP TR 50-5	0-10 cm bgs	Historic	Architecture	Flat Glass	Window Glass	0.86 - 2.41 mm thick		1	0.28		mm	Body	-					colorless fragment
013	IF-13	STP TR 50-5	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	1.49		mm	Body	-					medium thick, slightly curved fragment
014	IF-14	STP TR 51-4	10-20 cm bgs	Historic	Domestic	Ceramics	Whiteware	Plain	-	1	0.57		mm	Body	-		1830		Majewski and O'Brien 1987:119; Smith 1983:119	thin, flat fragment; plate?
014	IF-14	STP TR 51-4	10-20 cm bgs	Historic	Unidentified	Glass	Amorphous		-	1	9.57		mm	Body	-					very thick, chunky clear frag w blue-green area; broken/sheared-off all over; melted?1 surface flat
015	16RI314	STP TR 52-4	0-15 cm bgs	Historic	Unidentified	Indeterminate	1	-	-	1	0.53		mm	Body	-					thin, mostly flat frag w curve/ridge on 1 end. 1 surface smooth/beige; other: rough/brownish
015	16RI314	STP TR 52-4	0-15 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	0.65		mm	Body	-					medium thick with slight curve
021	IF-12	STP TR 53-8	10-20 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	1.47		mm	Body	-					medium thick fragment with moderate curve
022	16RI315	STP TR 54-7	10-25 cm bgs	Historic	Architecture	Nails	Indeterminate		-	1	0.95		mm	Body	-		1830		Majewski and O'Brien 1987:119; Smith 1983:119	small shank fragment; too corroded to determine type
022	16RI315	STP TR 54-7	10-25 cm bgs	Historic	Domestic	Ceramics	Whiteware	Plain	-	1	0.69		mm	Body with base	-		1830		Majewski and O'Brien 1987:119; Smith 1983:119	thin to medium thick, flat fragment; plate?
023	16RI316	STP TR 57-9	0-20 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	2	3.26		mm	Body	-					medium thick fragments with slight curves. 1 fragment has mold seam present
023	16RI316	STP TR 57-9	0-20 cm bgs	Historic	Domestic	Ceramics	Whiteware	Plain	-	1	3.28		mm	Footring with base	Plate	Place Setting	1830		Majewski and O'Brien 1987:119; Smith 1983:119	medium thick fragment with moderate curve; shallow footring
023	16RI316	STP TR 57-9	0-20 cm bgs	Historic	Domestic	Ceramics	Whiteware	Plain	-	1	0.93		mm	Body with base	-		1830		Majewski and O'Brien 1987:119; Smith 1983:119	medium thick, flat fragment
023	16RI316	STP TR 57-9	0-20 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Opaque white glass	1	0.52		mm	Cover / Lid	Canning jar	Bottle - Jar				caning jar liner fragment; no embossing present on fragment
023	16RI316	STP TR 57-9	0-20 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Amber glass	1	4.36		mm	Body	-					medium thick, moderately curved fragment with incised/molded line design
023	16RI316	STP TR 57-9	0-20 cm bgs	Historic	Architecture	Flat Glass	Window Glass	>2.41 mm thick		1	1.84		mm	Body	-					very pale green coloration; fragment
023	16RI316	STP TR 57-9	0-20 cm bgs	Historic	Unidentified	Glass	Flat		-	1	3.5		mm	Body	-					milk glass; medium thick, flat with molded ridge design on 1 side
024	16RI313	STP TR 57-15	0-20 cm bgs	Historic	Domestic	Ceramics	Whiteware	Molded	-	1	2.41		mm	Rim, body, base	Plate	Place Setting	1830		Majewski and O'Brien 1987:119; Smith 1983:119	medium thick, flat; undulating, molded rim and molded line decoration on surface
024	16RI313	STP TR 57-15	0-20 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	1.36		mm	Body	-					medium thick, strongly curved fragment
024	16RI313	STP TR 57-15	0-20 cm bgs	Historic	Architecture	Flat Glass	Window Glass	0.86 - 2.41 mm thick		1	0.61		mm	Body	-					colorless fragment
115	16RI313	STP N1000 E960	0-20 cm bgs	Historic	Domestic	Ceramics	Ironstone	Plain	-	1	1.1		mm	Footring with base	-		1830		Majewski and O'Brien 1987:122	medium thick, flat fragment with shallow footing

Bag	Site	Unit #	Dep	General Item	1	2	3	4	5	Count	Weight	Diameter	Unit Mea	Vessel Part	Vessel Type	Function	tMin	tMax	tRef	Comments
115	16RI313	STP N1000 E960	0-20 cm bgs	Historic	Unidentified	Glass	Flat	Glass	-	1	1.5		mm	Body	-					milk glass; medium thick; possible cosmetic container, bottle, décor fragment?
116	16RI313	STP N1000 E970	0-24 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Opaque white glass	1	0.27		mm	Body	-					small, medium thick fragment with slight curve
116	16RI313	STP N1000 E970	0-24 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	0.36		mm	Indeterminate part	-					medium thick fragment; 1-rounded edge but does not appear to be part of lip--transition to base?
116	16RI313	STP N1000 E970	0-24 cm bgs	Historic	Architecture	Flat Glass	Window Glass	0.86 - 2.41 mm thick		2	2.09		mm	Body	-					colorless fragments; 2.05 and 2.30mm thick
116	16RI313	STP N1000 E970	0-24 cm bgs	Historic	Unidentified	Metal	Iron / Steel		Amorphous	2	2.77		mm	Body	-					
117	16RI313	STP N1000 E980	0-17 cm bgs	Historic	Architecture	Nails	Indeterminate		-	1	2.93		mm	Body	-		1830		Majewski and O'Brien 1987:119; Smith 1983:119	shank fragment; too corroded to determine type
117	16RI313	STP N1000 E980	0-17 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	4	7.92		mm	Body	-					1 thin, moderate curve; 1 thick, moderate curve; 2 medium thick: 1-slight curve, 1-moderate curve
117	16RI313	STP N1000 E980	0-17 cm bgs	Historic	Domestic	Ceramics	Whiteware	Plain	-	1	0.72		mm	Body with base	-		1830		Majewski and O'Brien 1987:119; Smith 1983:119	thin to medium thick, flat fragment
118	16RI313	STP N1000 E980	17-23 cm bgs	Historic	Domestic	Ceramics	Whiteware	Transfer printed	-	1	5.56		mm	Body with base	-		1830		Majewski and O'Brien 1987:119; Smith 1983:119	medium to thick fragment w/ moderate to strong convex curve in top surface; gray, scroll-like print
118	16RI313	STP N1000 E980	17-23 cm bgs	Historic	Domestic	Ceramics	Whiteware	Plain	-	1	3.31		mm	Rim, body, base	-		1830		Majewski and O'Brien 1987:119; Smith 1983:119	medium thick, flat fragment; indetation/groove around rim; plate fragment?
118	16RI313	STP N1000 E980	17-23 cm bgs	Historic	Domestic	Ceramics	Whiteware	Plain	-	1	2.71		mm	Body with base	-		1830		Majewski and O'Brien 1987:119; Smith 1983:119	medium thick, mostly flat fragment; plate?
118	16RI313	STP N1000 E980	17-23 cm bgs	Historic	Unidentified	Glass	Flat		-	1	1.25		mm	Body	-					thin milk glass w/molded decoration:floral on 1 side, ridges on other side; cosmetic or décor?
119	16RI313	STP N1000 E990	0-20 cm bgs	Historic	Furnishings	Lighting	Indeterminate		-	1	0.03		mm	Body	-					very thin, slightly curved fragment; colorless; lamp chimney or bulb fragment?
119	16RI313	STP N1000 E990	0-20 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Amber glass	1	2.12		mm	Body	-					medium thick, slightly curved fragment
119	16RI313	STP N1000 E990	0-20 cm bgs	Historic	Domestic	Ceramics	Whiteware	Plain	-	1	1.38		mm	Body with base	-		1830		Majewski and O'Brien 1987:119; Smith 1983:119	medium thick, flat fragment; plate?
120	16RI313	STP N1010 E980	0-15 cm bgs	Historic	Domestic	Container Glass	Automatic Bottling Machine	Owens mold	Cobalt glass	1	22.56		mm	Base	Medicine	Bottle - Jar				thick; embossed:"Genuine Philli..." (Phillips' Milk of Magnesia), oval base fragment. Owen's scar
120	16RI313	STP N1010 E980	0-15 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	2	1.61		mm	Body	-					thin, slightly curved fragment
120	16RI313	STP N1010 E980	0-15 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Amber glass	1	0.56		mm	Base	-					thin, slightly curved fragment; Stippling present-fragment appear modern
120	16RI313	STP N1010 E980	0-15 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	0.77		mm	Lip with neck	-					medim thick, strongly curved; round bottle fragment; bead finish
120	16RI313	STP N1010 E980	0-15 cm bgs	Historic	Domestic	Ceramics	Whiteware	Chromatic glaze (monochrome)	-	1	1.78		mm	Rim with body	-		1830		Majewski and O'Brien 1987:119; Smith 1983:119	thin, strongly curved; 2 parallel shallow ridges around rim; bowl fragment? Similar to fiestaware
120	16RI313	STP N1010 E980	0-15 cm bgs	Historic	Unidentified	Metal	Iron / Steel		Amorphous	2	6.29		mm	Body	-					broken (post-STP recovery)
121	16RI313	STP N1010 E1000	0-15 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Light green glass	1	6.56		mm	Indeterminate part	-					thick fragment (with varying thickness), mostly flat; base fragment? Interior surface sheared off

Bag	Site	Unit #	Dep	General Item	1	2	3	4	5	Count	Weight	Diameter	Unit Mea	Vessel Part	Vessel Type	Function	tMin	tMax	tRef	Comments
121	16RI313	STP N1010 E1000	0-15 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	1.28		mm	Body	-					medium thick, stongly curved fragment
122	16RI313	STP N1020 E980	0-13 cm bgs	Historic	Domestic	Container Glass	Automatic Bottling Machine	Post bottom mold	Clear glass	1	3.48		mm	Base	-					medium thick , flat fragment ;round; stippling present; fragment appears to be from a modern bottle
122	16RI313	STP N1020 E980	0-13 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	1.24		mm	Body	-					medium thick with moderate to strong curve
122	16RI313	STP N1020 E980	0-13 cm bgs	Historic	Domestic	Ceramics	Whiteware	Plain	-	1	1.59		mm	Rim, body, base	-		1830	Majewski and O'Brien 1987:119; Smith 1983:119	thin, flat fragment; indentatiob/groove around rim; plate?	
122	16RI313	STP N1020 E980	0-13 cm bgs	Historic	Domestic	Ceramics		Plain	-	1	4.02		mm	Footring with base	-				thick, flat fragment; broad, shallow footring; black stain (burned)	
122	16RI313	STP N1020 E980	0-13 cm bgs	Historic	Architecture	Flat Glass	Window Glass	0.86 - 2.41 mm thick		2	1.49		mm	Body	-					colorless fragments; 2.36 & 2.26 mm thick
123	16RI313	STP N1020 E1000	0-17 cm bgs	Historic	Unidentified	Glass	Curved		-	1	2.49		mm	Body	-					milk glass; thick, slightly curved; smooth on interior, molded angle design on exterior
124	16RI317	STP N1020 E1010	0-15 cm bgs	Historic	Domestic	Ceramics	Porcelain: hard paste	Undecorated	-	1	1	0.87	mm	Body	-		1800	Faulkner 2000	medium thick with slight curve	
124	16RI313	STP N1020 E1010	0-15 cm bgs	Historic	Domestic	Glass Tableware	Undiagnostic fragment		Clear unleaded glass	1	0.53		mm	Rim	-					varying thickness
125	16RI317	STP N1020 E1030	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Amethyst glass	1	1.1		mm	Body	-					thin, moderatley curved fragment; dark solarized amethyst coloration
125	16RI317	STP N1020 E1030	0-10 cm bgs	Historic	Domestic	Glass Tableware	Undiagnostic fragment		Light green glass	1	2.44		mm	Body	-					very thick, moderately curved fragment
126	16RI317	STP N1040 E1000	0-10 cm bgs	Historic	Domestic	Ceramics	Whiteware	Transfer printed	-	1	1.29		mm	Body with base	-		1830	Majewski and O'Brien 1987:119; Smith 1983:119	thin, flat fragment (possible plat?); dark green transfer print, possible floral motif? 1970s style?	
126	16RI317	STP N1040 E1000	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Opaque white glass	1	0.8		mm	Base	-					thin, flat fragment with manufacture rings visible on 1 side
126	16RI317	STP N1040 E1000	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	2	6		mm	Body	-					1 thin to medium thick with slight curve; other is very thick with moderate curve
148	16RI305	STP N990 E1000	0-10 cm bgs	Historic	Unidentified	Metal	Iron / Steel		Item / part	1	77.91		mm	Body	-					thick rod with squarish (?) protrusion on one end, broken
148	16RI305	STP N990 E1000	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	1.28		mm	Body	-					thin to medium thick fragment with slight curve
149	16RI305	STP N1000 E980	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	0.77		mm	Body	-					medium thick, slightly curved fragment
150	16RI305	STP N1010 E970	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	1.82		mm	Indeterminate part	-					medium thick, moderaly curved;external thread with 2 ridges and rim-like top portion? Seam
151	16RI305	STP N1010 E980	0-21 cm bgs	Historic	Domestic	ntainer Glass	Automatic Bottling Machine	Cup bottom mold	Clear glass	1	36.23		mm	Body	-					thick, round; textured surface on body; base slightly concave and has partial embossed letter
151	16RI305	STP N1010 E980	0-21 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	4.54		mm	Body with base	-					meidum thick, round vessel; body is plain
151	16RI305	STP N1010 E980	0-21 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Light green glass	1	0.26		mm	Indeterminate part	-					thin fragment with moderate curve
152	16RI305	STP N1010 E990	0-20 cm bgs	Historic	Domestic	Ceramics	Whiteware	Plain	-	1	0.13		mm	Rim, body, base	-		1830	Majewski and O'Brien 1987:119; Smith 1983:119	thin, flat fragment; no crazing	
152	16RI305	STP N1010 E990	0-20 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	1.4		mm	Lip with neck	-					medium thick, moderately curved fragment; external thread fragment

Bag	Site	Unit #	Dep	General Item	1	2	3	4	5	Count	Weight	Diameter	Unit Mea	Vessel Part	Vessel Type	Function	tMin	tMax	tRef	Comments
152	16RI305	STP N1010 E990	0-20 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Opaque white glass	2	4.76		mm	Body	-					medium thick; 1 slight, other has moderate curve
152	16RI305	STP N1010 E990	0-20 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	7	5.98		mm	Body	-					thin or medium thick fragment; slight to moderate curves
153	16RI305	STP N1010 E1000	0-22 cm bgs	Historic	Domestic	Ceramics	Whiteware	Plain	-	3	7.21		mm	Rim, body, base	-		1830		Majewski and O'Brien 1987:119; Smith 1983:119	medium thick fragments with slight to moderate curves; no crazing on any fragments
153	16RI305	STP N1010 E1000	0-22 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	4.12		mm	Lip with neck	-					partial finish-possible blob lip? medium thick, round fragment
153	16RI305	STP N1010 E1000	0-22 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	2.9		mm	Base	-					medium thick fragment; slightly concave base; embossed: "17-30..."
153	16RI305	STP N1010 E1000	0-22 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Blue-green glass	1	3.02		mm	Body	-					medium thick with moderate to strong curve; slight molded ridge on exterior
153	16RI305	STP N1010 E1000	0-22 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Olive green glass	1	1.26		mm	Body	-					thin, slightly curved fragment
153	16RI305	STP N1010 E1000	0-22 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Amber glass	1	0.46		mm	Body	-					thin, moderately curved fragment
153	16RI305	STP N1010 E1000	0-22 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	11	20.98		mm	Body	-					mostly medium thick fragments with slight to moderate curve; 1 thick fragment with ridges& texture
153	16RI305	STP N1010 E1000	0-22 cm bgs	Historic	Architecture	Construction Material	Asbestos	Roofing / siding	-	1	2.72		mm	Body	-					pinkish coloration and ridges on 1 side, white, roughly smooth on other side
153	16RI305	STP N1010 E1000	0-22 cm bgs	Historic	Architecture	Flat Glass	Window Glass	>2.41 mm thick		1	0.51		mm	Body	-					colorless fragment
154	16RI313	STP N1010 E1010	0-10 cm bgs	Historic	Architecture	Flat Glass	Window Glass	0.86 - 2.41 mm thick		2	1.1		mm	Body	-					colorless fragments; thickness: 2.13 and 2.34 mm
154	16RI313	STP N1010 E1010	0-10 cm bgs	Historic	Domestic	Ceramics	Whiteware	Transfer printed	-	1	2.61		mm	Rim with body	-		1830		Majewski and O'Brien 1987:119; Smith 1983:119	medium thick, round; moderately curved (bowl?); cobalt decoration
154	16RI313	STP N1010 E1010	0-10 cm bgs	Historic	Domestic	Ceramics	Whiteware	Plain	-	1	0.68		mm	Body with base	-		1830		Majewski and O'Brien 1987:119; Smith 1983:119	medium thick, flat fragment; no crazing present
154	16RI313	STP N1010 E1010	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	2	7.35		mm	Lip with neck	-					external thread lips; 1 thick fragt & threads-possible large canning jar; other thin frag/threads
154	16RI313	STP N1010 E1010	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Light green glass	2	8.18		mm	Body	-					1 medium thick, slight curve with indentation line on exterior; other thick, moderately curved
154	16RI313	STP N1010 E1010	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	9	6.8		mm	Body	-					mostly thin, couple medium thick fragments--slight to moderate curves
154	16RI313	STP N1010 E1010	0-10 cm bgs	Historic	Domestic	Nails	Indeterminate		-	1	2.03		mm	Body	-		1830		Majewski and O'Brien 1987:119; Smith 1983:119	thin, moderately curved fragment with Robin's egg blue/teal slip on interior/exterior
155	16RI305	STP N1020 E970	0-10 cm bgs	Historic	Architecture	Flat Glass	Window Glass	0.86 - 2.41 mm thick		2	3.74		mm	Body	-					colorless fragments; thickness: 1.22 & 1.20 mm
155	16RI305	STP N1020 E970	0-10 cm bgs	Historic	Architecture	Nails	Indeterminate Cut / Wrought Nail		-	1	0.91		mm	Body	-		1700	1880	Nelson 1968	shank fragment; too corroded to determine nail type
156	16RI305	STP N1020 E970	10-20 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	2	2.15		mm	Body	-					medium thick fragments; 1 slightly, other moderately curved

Bag	Site	Unit #	Dep	General Item	1	2	3	4	5	Count	Weight	Diameter	Unit Mea	Vessel Part	Vessel Type	Function	tMin	tMax	tRef	Comments
156	16RI305	STP N1020 E970	10-20 cm bgs	Historic	Domestic	Ceramics	Whiteware	Slip decorated	-	1	1.64		mm	Rim, body, base	-		1830		Majewski and O'Brien 1987:119; Smith 1983:119	thin, flat fragment; top (body) side has pink slip; glazed on base side; no crazing
157	16RI305	STP N1020 E990	0-18 cm bgs	Historic	Domestic	Container Glass	Automatic Bottling Machine	Indeterminate	Clear glass	1	3.6		mm	Lip with neck	Milk	Bottle - Jar				manufacturing seam run around top edge of lip; 2 short exterior ledges
158	16RI305	STP N1020 E1000	0-10 cm bgs	Historic	Domestic	Ceramics	Whiteware	Transfer printed	-	1	4.43		mm	Body with base	-		1830		Majewski and O'Brien 1987:119; Smith 1983:119	thick, slightly curved fragment with large floral transfer print design on top (body) surface
158	16RI305	STP N1020 E1000	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	2.2		mm	Body	-					thin to medium thick with moderate curve
158	16RI305	STP N1020 E1000	0-10 cm bgs	Historic	Architecture	Flat Glass	Window Glass	0.86 - 2.41 mm thick		1	0.64		mm	Body	-					colorless fragment
159	16RI305	STP N1020 E1000	10-20 cm bgs	Historic	Architecture	Flat Glass	Window Glass	0.86 - 2.41 mm thick		1	0.69		mm	Body	-					colorless fragment
160	16RI305	STP N1020 E1000	20-35 cm bgs	Historic	Personal	Music and Art Glass	Phonograph Record Other	Vinyl LP	-	1	0.73			Body	-					fragment
161	16RI305	STP N1020 E1010	0-10 cm bgs	Historic	Unidentified	Glass	Indeterminate		-	1	1.54		mm	Body	-					thick;milk glass, flat/smooth on 1 side; textured bumps with lines dividing them on other side;stain small, sheared off fragment; can not indentify attributes
161	16RI305	STP N1020 E1010	0-10 cm bgs	Historic	Architecture	Flat Glass	Window Glass	0.86 - 2.41 mm thick		2	0.91		mm	Body	-					colorless fragments; thickness: 2.15 & 2.25 mm
161	16RI305	STP N1020 E1010	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	2		mm	Body	-					medium thick with moderate curve; exterior surface has dotted texture surface
162	16RI305	STP N1020 E1020	0-21 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Opaque white glass	1	1.48		mm	Lip with neck	-					medium thick, round fragment; small-mouthed external thread
162	16RI305	STP N1020 E1020	0-21 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Light green glass	1	0.86		mm	Body	-					medium to thick fragment with slight curve
162	16RI305	STP N1020 E1020	0-21 cm bgs	Historic	Architecture	Flat Glass	Window Glass	0.86 - 2.41 mm thick		1	0.28		mm	Body	-					colorless fragment
163	16RI315	STP N1000 E1010	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	1.51		mm	Lip with neck	-					medium thick with moderate curve; external thread finish, very eroded
164	16RI315	STP N1000 E1020	0-21 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Amber glass	1	2.53		mm	Base	-					thick, slightly curved fragment; Possible Owen's scar line, textured design & embossed "15"
164	16RI315	STP N1000 E1020	0-21 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	0.35		mm	Indeterminate part	-					thin to medium thick with very slight curve
165	16RI314	STP N990 E1000	0-22 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	0.67		mm	Body	-					thin, moderately curved fragment
166	16RI314	STP N1000 E1020	5-15 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Amber glass	1	1.85		mm	Body	-					medium thick fragment with slight curve
166	16RI314	STP N1000 E1020	5-15 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	0.25		mm	Indeterminate part	-					thin to medium thick fragment with very slight curve
167	16RI314	STP N1000 E1040	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	3.22		mm	Body	-					thick, panel bottle fragment with 2 sides and where they connect (seam runs up) UID letters embossed
168	16RI314	STP N1000 E1060	0-10 cm bgs	Historic	Domestic	Ceramics	Whiteware	Plain	-	2	3.91		mm	Body with base	-		1830		Majewski and O'Brien 1987:119; Smith 1983:119	medium thick, flat fragments
169	16RI314	STP N1000 E1060	10-15 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Amber glass	1	0.85		mm	Body	-					thin, moderately curved fragment with multiple dotted line design and embossed: "...LE..."

Bag	Site	Unit #	Dep	General Item	1	2	3	4	5	Count	Weight	Diameter	Unit Mea	Vessel Part	Vessel Type	Function	tMin	tMax	tRef	Comments
170	16RI314	STP N1010 E1000	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	0.33		mm	Body	-					thin fragment with slight curve
171	16RI314	STP N1010 E1020	0-10 cm bgs	Historic	Domestic	Ceramics	Whiteware	Plain	-	1	1.1		mm	Body with base	-		1830		Majewski and O'Brien 1987:119; Smith 1983:119	medium thick, flat fragment
171	16RI314	STP N1010 E1020	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	1.87		mm	Body	-					medium thick, moderately curved fragment
172	16RI314	STP N1010 E1040	0-10 cm bgs	Historic	Unidentified	Other	1	-	-	1	3.57		mm	Body	-					black lava rock or pumice stone
173	16RI314	STP N1010 E1060	5-15 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	2	1.12		mm	Indeterminate part	-					thin, slightly curved fragments
173	16RI314	STP N1010 E1060	5-15 cm bgs	Historic	Domestic	Container Glass	Automatic Bottling Machine	Indeterminate	Amber glass	1	3.12		mm	Lip with neck	Miscellaneous bottle	Bottle - Jar				round bottle. Small-mouthed external thread finish; seam all the way up
173	16RI314	STP N1010 E1060	5-15 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Amber glass	1	0.49		mm	Body	-					thin, slightly curved fragment
174	16RI314	STP N1010 E1080	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Amber glass	1	3.12		mm	Body	-					medium thick with moderate curve
174	16RI314	STP N1010 E1080	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	0.35		mm	Body	-					thin, slightly curved fragment
175	16RI314	STP N1030 E1040	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Amethyst glass	1	1.97		mm	Body	-					medium thick, strongly curved fragment
175	16RI314	STP N1030 E1040	0-10 cm bgs	Historic	Architecture	Flat Glass	Window Glass	0.86 - 2.41 mm thick		1	0.41		mm	Body	-					colorless fragment
176	16RI316	STP N990 E980	0-10 cm bgs	Historic	Domestic	Ceramics	Whiteware	Plain	-	3	4.28		mm	Body with base	-		1830		Majewski and O'Brien 1987:119; Smith 1983:119	medium thick fragments; 1 burned, 1 has an eroded surface on one side
176	16RI316	STP N990 E980	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	0.12		mm	Indeterminate part	-					thin to medium thick with moderate curve
177	16RI316	STP N990 E1000	0-10 cm bgs	Historic	Architecture	Nails	Indeterminate		-	1	2.69		mm	Body	-		1830		Majewski and O'Brien 1987:119; Smith 1983:119	shank fragment; too corroded to determine nail type
178	16RI316	STP N1000 E980	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Amber glass	1	0.96		mm	Body	-					medium thick fragment with moderate curve
178	16RI316	STP N1000 E980	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	0.74		mm	Body	-					medium thick fragment with moderate curve
179	16RI316	STP N1000 E990	5-15 cm bgs	Historic	Domestic	Container Glass		Fragment	Amber glass	1	0.74		mm	Body	-					medium to thick fragment with slight curve
179	16RI316	STP N1000 E990	5-15 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	3.12		mm	Lip with neck	-					medium thick, strongly curved fragment; external thread fragment
179	16RI316	STP N1000 E990	5-15 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	6	4.91		mm	Body	-					medium thick fragments with very slight to medium curve (1 fragment has strong curve-side fragment)
180	16RI317	STP N980 E1040	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	2.53		mm	Base	-					thick mostly flat fragment; stippling
181	16RI317	STP N980 E1020	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	1.57		mm	Body	-					medium thick fragment with slight curve
182	16RI317	STP N980 E1000	0-15 cm bgs	Historic	Architecture	Flat Glass	Laminated Glass	Flat glass		2	1.88		mm	Body	-		1903		Wikipedia	5.6 cm thick; 1 has molded lines

Bag	Site	Unit #	Dep	General Item	1	2	3	4	5	Count	Weight	Diameter	Unit Mea	Vessel Part	Vessel Type	Function	tMin	tMax	tRef	Comments
182	16RI317	STP N980 E1000	0-15 cm bgs	Historic	Architecture	Fittings and Hardware	Stoneware Water Pipe (weigh)	Fittings / Hardware	Ceramic: earthenware	1	19.34		mm	Body	-					133.33 mm thick, moderately curved fragment; salt glazed; brown
182	16RI317	STP N980 E1000	0-15 cm bgs	Historic	Architecture	Flat Glass	Window Glass	>2.41 mm thick		1	0.63		mm	Body	-					colorless fragment
182	16RI317	STP N980 E1000	0-15 cm bgs	Historic	Architecture	Flat Glass	Window Glass	0.86 - 2.41 mm thick		3	2.29		mm	Body	-					colorless fragments
182	16RI317	STP N980 E1000	0-15 cm bgs	Historic	Architecture	Nails	Wire Nail		-	1	0.98		mm	Body	-		1880	Nelson 1968	shank fragment	
182	16RI317	STP N980 E1000	0-15 cm bgs	Historic	Unidentified	Metal	Iron / Steel		Item / part	1	6.98		mm	Body	-					rod like, curve fragment with grooves
183	16RI317	STP N960 E1060	0-10 cm bgs	Historic	Unidentified	Metal	Iron / Steel		Flat: thin	1	1.59		mm	Body	-					no attributes
184	16RI317	STP N960 E1040	10-15 cm bgs	Historic	Architecture	Construction Material	Brick (measure in inches)	Indeterminate brick: non-vitrified		1	0.47		mm	Body	-					medium-red fragment
185	16RI317	STP N960 E1040	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment		-	1	1.99		mm	Lip with neck	-					medium thick, slightly curved fragment--large-mouthed external thread-possible canning jar
186	16RI317	STP N960 E980	0-15 cm bgs	Historic	Unidentified	Metal	Iron / Steel		Rod	1	2.01		mm	Body	-					possible machine cut nail fragment but corrosion build-up to much to identify
187	16RI317	STP N940 E1000	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	2.19		mm	Lip with neck	-					medium to this thick fragment with slight curve; external thread lip
188	16RI317	STP N920 E1060	0-10 cm bgs	Historic	Domestic	Container Glass	Automatic Bottling Machine	Indeterminate	Clear glass	1	1.73		mm	Lip with neck	Other bottle/jar	Bottle - Jar				medium thick, strongly curved; seam all the way up; short neck--possible snuff bottle?
189	16RI316	STP N1020 E1010	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	2	1.54		mm	Indeterminate part	-					thin, very slightly curved fragment
190	16RI316	STP N1020 E1000	0-10 cm bgs	Historic	Domestic	Glass Tableware	Unidentified mold		Other color glass	1	4.27		mm	Body	-					medium thick, moderately curved; Yellow glass with thick and deep ridges
191	16RI316	STP N1020 E990	0-10 cm bgs	Historic	Domestic	Ceramics	Whiteware	Plain	-	1	0.27		mm	Body with base	-		1830	Majewski and O'Brien 1987:119; Smith 1983:119	small, thin, flat fragment	
192	16RI316	STP N1010 E1010	10-15 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	2	0.97		mm	Indeterminate part	-					medium thick, moderatley curved fragment; 1 fragment has molded round decoration
193	16RI316	STP N1010 E1010	0-15 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	1.24		mm	Body	-					medium thick fragment with moderate to strongly curved fragment; textured surface
193	16RI316	STP N1010 E1010	0-15 cm bgs	Historic	Unidentified	Glass	Indeterminate		-	1	0.1		mm	Body	-					small, sheared off fragment
194	16RI316	STP N1010 E1000	0-18 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Amber glass	1	0.26		mm	Body	-					medium thick, slightly curved fragment
194	16RI316	STP N1010 E1000	0-18 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	0.33		mm	Body	-					medium thick, slightly curved fragment
195	16RI319	STP N1000 E980	5-15 cm bgs	Historic	Architecture	Flat Glass	Window Glass	0.86 - 2.41 mm thick		2	0.85		mm	Body	-					colorless fragments; thicknes: 2.09 and 1.86mm
196	16RI319	STP N990 E1010	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	1.22		mm	Body	-					meidum thick fragment with moderate curve
197	16RI319	STP N980 E1010	0-15 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	2	3.57		mm	Indeterminate part	-					thick; 1 moderately curved (ext thread lip?), other very curved--could be transition of body to base?
197	16RI319	STP N980 E1010	0-15 cm bgs	Historic	Architecture	Flat Glass	Window Glass	0.86 - 2.41 mm thick		1	0.42		mm	Body	-					colorless fragment; sheared off in areas but flat surfaces remain on both sides
198	16RI319	STP N970 E1010	5-15 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	0.82		mm	Body with base	-					thin, strongly curved fragment; cup bottom mold? Only the curved area where body meets base present
198	16RI319	STP N970 E1010	5-15 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	0.57		mm	Body	-					thin to medium thick, very slightly curved fragment
198	16RI319	STP N970 E1010	5-15 cm bgs	Historic	Domestic	Ceramics	Ironstone	Plain	-	1	4.59		mm	Body with base	-		1830	Majewski and O'Brien 1987:122	thick, strongly curved fragment; round vessel; base slightly concave; slight ridges around ext body	

Bag	Site	Unit #	Dep	General Item	1	2	3	4	5	Count	Weight	Diameter	Unit Mea	Vessel Part	Vessel Type	Function	tMin	tMax	tRef	Comments
199	16RI318	STP N1010 E1000	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Light green glass	1	2.41		mm	Body	-					medium thick, very slightly curved fragmennt
200	16RI318	STP N1000 E1020	5-15 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	2.28		mm	Indeterminate part	-					thin to medium thick w moderate, oddly shaped curve- -could be malformed from being partially melted
201	16RI317	STP N990 E1000	0-19 cm bgs	Historic	Architecture	Nails	Wire Nail		-	1	1.85		mm	Body	-		1880	Nelson 1968		common head and shank fragment; broken post recovery
201	16RI317	STP N990 E1000	0-19 cm bgs	Historic	Unidentified	Glass	Flat		-	1	0.62		mm	Body	-					milk glass body fragment,molded ridges on interior; molded flowers on exterior; cosmetic container?
202	16RI317	STP N980 E1080	0-19 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	0.32		mm	Other part	-					external thread lip fragment
203	16RI317	STP N1000 E1040	0-10 cm bgs	Historic	Unidentified	Indeterminate	1	-	-	3	1.03		mm	Body	-					very thin, flat fragments made of manufactured material? Gray with dots; could be architectural?
204	16RI317	STP N1000 E1060	5-15 cm bgs	Historic	Domestic	Ceramics	Whiteware	Plain	-	1	0.71		mm	Body	-		1830	Majewski and O'Brien 1987:119; Smith 1983:119		thin, slight to moderately curved fragment
205	16RI317	STP N1020 E1040	5-15 cm bgs	Historic	Architecture	Flat Glass	Indeterminate	Flat glass		1	1.18		mm	Body	-					VERY thick (6.02 mm), blue green glass fragment; completely flat
205	16RI317	STP N1020 E1040	5-15 cm bgs	Historic	Architecture	Flat Glass	Window Glass	>2.41 mm thick		2	6.91		mm	Body	-					very, very pale aqua coloration? Mostly clear fragments; 2.51 & 2.72 mm thick
205	16RI317	STP N1020 E1040	5-15 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	1.04		mm	Body	-					thin to medium thick with moderate curve; manufacture seam present
206	16RI317	STP N1020 E1060	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	1.07		mm	Body	-					thin, moderately curved fragment
206	16RI317	STP N1020 E1060	0-10 cm bgs	Historic	Architecture	Fittings and Hardware	Stoneware Water Pipe (weigh)	Fittings / Hardware	Ceramic: earthenware	3	154.07		mm	Body	-					very thick slightly curved fragments;2 brown,1 red; salt glazed on int/ext;paste has many inclusions
206	16RI317	STP N1020 E1060	0-10 cm bgs	Historic	Architecture	Construction Material	Brick (measure in inches)	Indeterminate brick: non-vitrified		1	1.38		mm	Body	-					orangey-red fragment; very smooth surface
206	16RI317	STP N1020 E1060	0-10 cm bgs	Historic	Architecture	Construction Material	Mortar	Fragment		1	5.2		mm	Body	-					white, coarse sand mortar with small to medeium sized inclusions
206	16RI317	STP N1020 E1060	0-10 cm bgs	Historic	Architecture	Flat Glass	Indeterminate	Flat glass		1	0.95		mm	Body	-					very thick (6.18mm), colorless fragment; flat
206	16RI317	STP N1020 E1060	0-10 cm bgs	Historic	Unidentified	Ceramic	Indeterminate ceramic		Item / part	1	2.33		mm	Body	-					5.11mm thick, flat fragment; light gray with light brown dots-could be tile fragment; no luster
207	16RI317	STP N1020 E1060	10-20 cm bgs	Historic	Unidentified	Ceramic	Porcelain		Item / part	1	1.66		mm	Body	-					white; medium luster; probably tile fragment but surfaces sheared off on both sides
208	16RI317	STP N1020 E1080	0-10 cm bgs	Historic	Architecture	Fittings and Hardware	Stoneware Water Pipe (weigh)	Fittings / Hardware	Ceramic: earthenware	1	38.02		mm	Body	-					very thick, slightly curved frag; red-brown paste w high luster glaze(dark brown ext, med brown int)
208	16RI317	STP N1020 E1080	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	0.37		mm	Body	-					thin, slightly curved fragment
209	IF-16	STP N990 E1000	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	1.02		mm	Body	Other bottle/jar	Bottle - Jar				thin, slightly curved fragment with molded, whittle mark-like textured surface
210	16RI319	STP N1000 E1010	0-15 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Amber glass	1	1.57		mm	Lip with neck	-					round vessel; small mouthed external thread
210	16RI319	STP N1000 E1010	0-15 cm bgs	Historic	Domestic	Ceramics	Whiteware	Plain	-	1	1.09		mm	Body with base	-		1830	Majewski and O'Brien 1987:119; Smith 1983:119		medium thick, flat fragment; plate?
210	16RI319	STP N1000 E1010	0-15 cm bgs	Historic	Unidentified	Metal	Iron / Steel		Flat: thick	1	41.33		mm	Body	-					no attributes
211	16RI319	STP N1000 E1010	20-30 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	2.34		mm	Body	-					thick, slight to moderately curved fragment
212	16RI320	STP N980 E1010	0-15 cm bgs	Historic	Architecture	Nails	Indeterminate		-	1	1.28		mm	Body	-		1830	Majewski and O'Brien 1987:119; Smith 1983:119		too corroded to identify for sure but could be square head with very short shank or broken fragment?

Bag	Site	Unit #	Dep	General Item	1	2	3	4	5	Count	Weight	Diameter	Unit Mea	Vessel Part	Vessel Type	Function	tMin	tMax	tRef	Comments
213	16RI320	STP N990 E1010	0-15 cm bgs	Historic	Domestic	Container Glass	Automatic Bottling Machine	Indeterminate	Green glass	1	5.63		mm	Lip with neck	-					seam runs up and over the lip; medium thick, round vessel; partial blob finish
214	16RI320	STP N1000 E1010	0-10 cm bgs	Historic	Architecture	Nails	Cut Nail: unspecified		-	1	1.47		mm	Body	-		1800	1880	Nelson 1968	round head and rectangular shank fragment
215	16RI320	STP N1020 E1010	5-15 cm bgs	Historic	Architecture	Nails	Wire Nail		-	1	2.53		mm	Body	-		1880		Nelson 1968	shank fragment
215	16RI320	STP N1020 E1010	5-15 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	1.63		mm	Body	-					thin to medium thick, slightly curved fragment
216	16RI320	STP N1030 E1010	0-10 cm bgs	Historic	Domestic	Container Glass	Undiagnostic container fragment	Fragment	Clear glass	1	0.87		mm	Body	-					thin, moderately curved fragment