

***AN ARCHAEOLOGICAL SURVEY FOR THE
VIDOR PIPELINE PROJECT
IN JEFFERSON AND ORANGE COUNTIES TEXAS***



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***Brazos Valley Research Associates
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PROJECT IN JEFFERSON AND ORANGE COUNTIES, TEXAS

BVRA Project Number 06-15

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ABSTRACT

An archaeological survey of a proposed natural gas pipeline in east Jefferson and west Orange counties, Texas was performed by Brazos Valley Research Associates (BVRA) on August 8th -10th, 2006. This investigation examined three high probability areas along the five mile pipeline route, all in Orange County. That part of the project area on the east side of the Neches River was in a marshy area with little relief. On the high ground above the river in Jefferson County, the entire area had been disturbed through pipeline construction and other development associated with oil and gas refining. Nineteen shovel tests were dug through sand and clay. No prehistoric or historic sites were identified, and no artifacts were collected. The pipeline as currently planned will have no affect on significant cultural resources. It is recommended that construction be allowed to proceed as planned. No artifacts were collected.

ACKNOWLEDGMENTS

BVRA is grateful to those who made the successful completion of this project possible. Stephen Swetish of CSC Engineering and Environmental Consultants, Inc. supplied the necessary maps and logistical support. The field survey was supervised by James E. Warren (Project Archaeologist). The field crew was composed of Art Romine, and Bobby Jemison. Jean Hughes, Records Conservator at the Texas Archeological Research Laboratory (TARL), performed the records check for previously recorded sites in the project area and vicinity. Lili G. Lyddon drafted the figures. Jennifer McMillan provided technical support, and Nora Rogers served as editor and proofreader.

CONTENTS

ABSTRACT	ii
ACKNOWLEDGMENTS	iii
INTRODUCTION	5
ENVIRONMENTAL SETTING	8
ARCHAEOLOGICAL BACKGROUND	10
METHODS OF INVESTIGATION	11
AREAS SURVEYED	12
RESULTS AND CONCLUSIONS	17
RECOMMENDATIONS	18
REFERENCES CITED	19
Appendix I: Shovel Test Log	

FIGURES

Figure 1. General Location	6
Figure 2. Project Area	7
Figure 3. Area 1, Looking East	8
Figure 4. Area 2, Looking East	9
Figure 5. Area 1, Shovel Tests	13
Figure 6. Area 2, Shovel Tests	14
Figure 7. Area 5, Shovel Tests	16

INTRODUCTION

Duke Energy Field Services of Houston, Texas plans to construct a natural gas pipeline across a portion of east Jefferson and west Orange counties, Texas (Figure 1). The length of the line is five miles. It will be placed in a trench 24 inches wide and a minimum of four foot cover. The diameter of the pipe is twelve inches. The easement width is 60 feet. The project area is depicted on two USGS 7.5' topographic quadrangles. They are Beaumont East dated 1960 and photorevised in 1974 (3094-111) and Terry dated 1957 and photorevised in 1974 (3093-222) (Figure 2). The entire project area is on private property. Therefore, no permit from the Texas Historical Commission was required. This report will be submitted to the United States Corps of Engineers, Galveston District for review as they have jurisdiction of this area because the pipeline route passes through wetlands and crosses the Neches River.

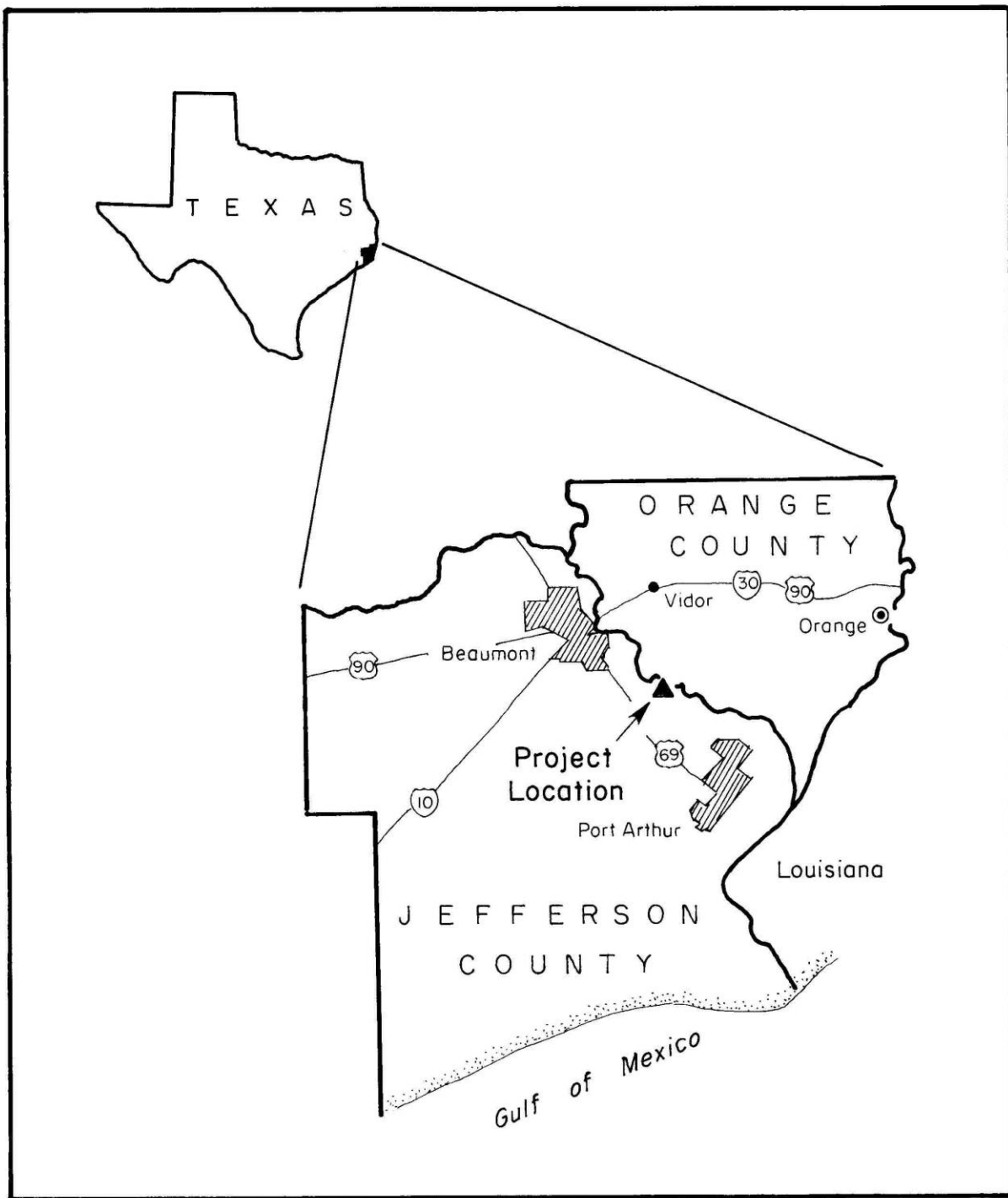
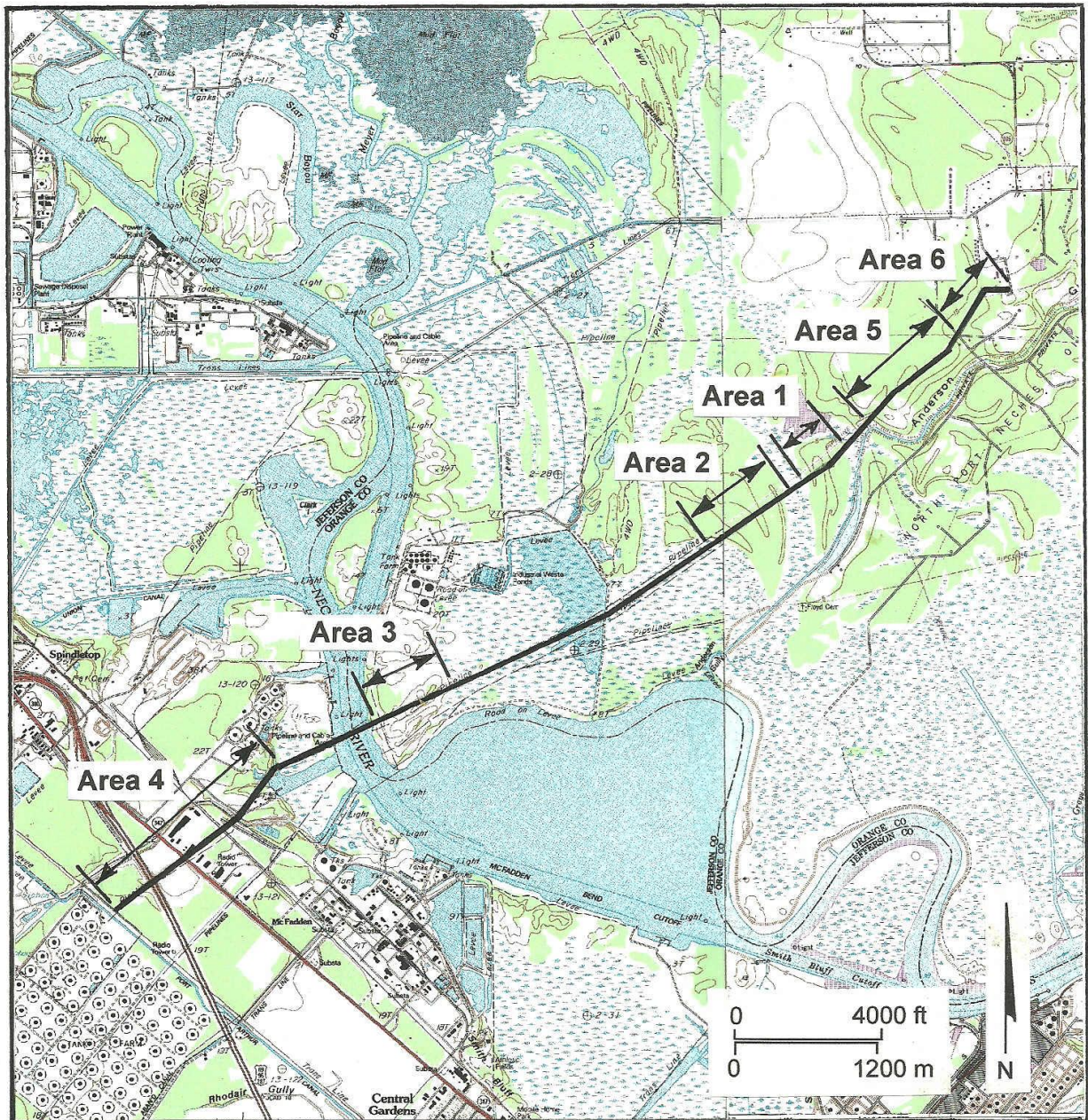


Figure 1. General Location



ENVIRONMENTAL SETTING

The following general statements regarding the environment of Jefferson and Orange counties were taken from the soil survey for Jefferson County by Crout et al. (1965) and the Texas Almanac (Kingston and Harris 1985). There is no published soil survey for Orange County. These counties are located in the extreme eastern part of Texas. The landscape ranges from the high ground on the west bank of the Neches River in the eastern part of Jefferson County to a low marshy area in the western part of Orange County. The project area passes through two completely diverse areas. At the western end, it traverses a highly developed area that has been completely disturbed through construction activities associated with oil and gas refining. Pipelines, storage tanks, buildings, and roads litter the landscape. Just across the river, in Orange County, the project area passes through a wetlands area containing a few islands only a few feet above the surrounding water. In some of these areas pine trees and mixed hardwoods are present along with various grasses and weeds. Figures 3 and 4 depict two views of the area surveyed.



Figure 3. Area 1, Looking East



Figure 4. Area 2, Looking East

ARCHAEOLOGICAL BACKGROUND

According to a published planning document for the Eastern Planning Region of Texas (Kenmotsu and Perttula 1993:Figure 1.1.2), Jefferson and Orange counties are situated within the Southeast Texas Archeological Study Region. Major threats to sites in this area are population increase, oil and gas production, and some timber exploitation.

The project area is located in an environmental setting that has been greatly affected by oil and gas production. To the west is a large refinery that is the connection point for numerous pipelines. One of these was installed by the Centanna Intrastate Pipeline Company in the 1990s. Along the route of this pipeline, archaeologists from Espey, Huston & Associates, Inc. recorded site 41OR85 in 1994 (Skokan and Nash 1995). This prehistoric site was found at the edge of a reed marsh on a small low sandy knoll within the pipeline right-of-way. Two chert flakes were found in shovel tests between 10 and 30 centimeters of the existing ground surface. The size of this site was estimated to be 10 meters in diameter, and disturbance was estimated to be about 50% due to bioturbation and pipeline construction. The researchers state that portions of the site appear to be undisturbed, and testing for significance is recommended.

In 2000, archaeologists from Horizon Environmental Services, Inc. recorded site 41OR87 (Brownlow 2001) along the right-of-way of the proposed Centennial Pipeline. This prehistoric site was found on a small sandy knoll adjacent to a slough within the pipeline right-of-way. Two chert flakes were found in shovel tests (depth not given). The size of this site was estimated to be 10 meters in diameter based on the landform and shovel tests. The researchers state on the site form that the site is 100% intact with bioturbation the only disturbance observed. They state that site 41OR87 is not eligible for listing in the National Register of Historic Places or for designation as a State Archeological Landmark. It is defined on the site form as a small temporary camp that may be associated with nearby site 41OR85.

In 2004, archaeologists from HRA Gray & Pape, LLC recorded site 41OR89 (Hughey and Picklesimer 2004) along the right-of-way of a proposed pipeline. This site is located on a sandy knoll on the southwest corner of an island surrounded by marsh. Artifacts recovered include ceramics, projectile points, lithic debitage, and cut nails. The site was examined by shovel testing and 1 x 1 meter excavation units. There are no comments on the site form regarding site significance, and the report documenting this work is still in progress

Other pipelines are present in the area, but there are no archaeological sites associated with them. The interested reader is referred to the site records at TARL for information regarding these project and *Archeology in the Eastern Planning Region, Texas: A Planning Document* published by the Texas Historical Commission (Kenmotsu and Perttula 1993) for a discussion of Southeast Texas.

METHODS OF INVESTIGATION

Pre-Field Tasks

Prior to entering the field, the site records at TARL were checked for the presence of previously recorded archaeological sites in the project area and vicinity. Relevant archaeological reports documenting work in Jefferson and Orange counties were reviewed in order to become familiar with the types of prehistoric and historic sites found in the area.

Field Survey

Based on the topographic map, five locations along the proposed pipeline in the marshy area east of the river appear to be likely settings or high probability areas for archaeological sites. The field inspection, however, determined that only three of these (Areas 1-3) were worthy of shovel testing. Figures 5 and 6 depict the location of all areas visited including the high ground on the west side of the river. The field survey was conducted on August 8th – 10th, 2006 under the supervision of James E. Warren with a field crew of two persons. The five areas east of the river traverse a landscape with little relief above the surrounding marsh.

The field survey was performed by a 100% Pedestrian Survey on all dry land with a visual inspection of all exposed areas due to erosion and or human disturbance. On the high ground above the river, a larger area was examined because the crew was told that the route of the pipeline may deviate from what is depicted in this report. The subsurface was examined through shovel testing. All excavated earth was screened through quarter-inch hardware cloth. Data obtained from shovel tests were recorded on a shovel test log (Appendix I). All shovel tests were backfilled after evaluation and mapping, and the location of each test was plotted a field map (see *Areas Surveyed* below). These figures are enlargements of the areas depicted in figures 2 and 3 above. Photographs of the project area were taken with a digital camera. The entire route was flagged and staked; therefore a GPS was not used.

AREAS SURVEYED

Area 1

Although this area is depicted on the topographic map as a large green area, the survey crew found it to be a small landform only about 1 or 2 feet above the surrounding water. The vegetation in this area consisted of pine trees, mixed hardwoods, and various grasses and weeds. A marsh buggy was used to reach Area 1 as travel by car or truck in this area was not possible. Four shovel tests were excavated in those areas where soil was present. Shovel tests 1 and 2 (eastern edge of landform) were dug through fine sand before reaching clay at depths of 60 and 80 cm. No cultural materials were recovered. Shovel tests 3 and 4 (western edge of landform) were dug through fine sand before reaching water at 20 and 30 cm. No cultural materials were recovered. One flake and two pieces of mussel shell were observed on the disturbed surface of the previously installed pipelines to the south of the project area. No archaeological site in this area is depicted on the topographic map at TARL. The artifacts were not collected. Figure 5 depicts the approximate location of the four shovel tests in Area 1.

Area 2

Although this area is depicted on the topographic map as a large green area, the survey crew found to be a small landform only about 1 or 2 feet above the surrounding water. The vegetation in this area consisted of pine trees, mixed hardwoods, and various grasses and weeds. A marsh buggy was used to reach Area 2 as travel by car or truck in this area was not possible. Five shovel tests were excavated in those areas where soil was present. The tests were dug through fine sand before reaching clay or water at depths of 15 to 60 cm, and no cultural materials were recovered. Two archaeological sites (41OR87 and 41OR89) are depicted on the TARL maps as being to the north of the project area. The survey crew terminated shovel testing with Shovel Test 9 at the western edge of this landform. This test was dug to 25 cm before reaching water. No tests were dug to the west of this test because of standing water. Figure 6 depicts the approximate location of the five shovel tests in Area 2.

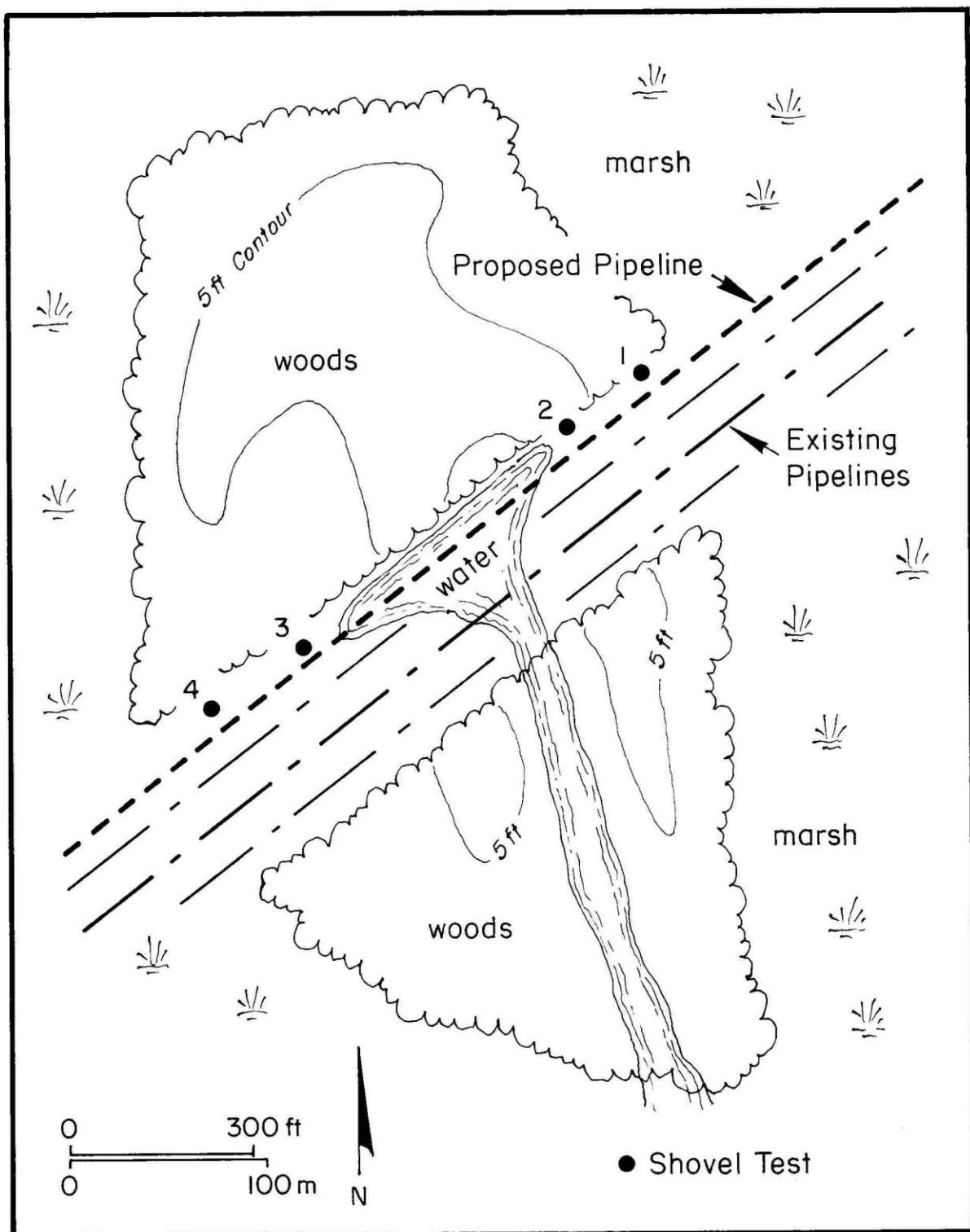


Figure 5. Area 1, Shovel Tests

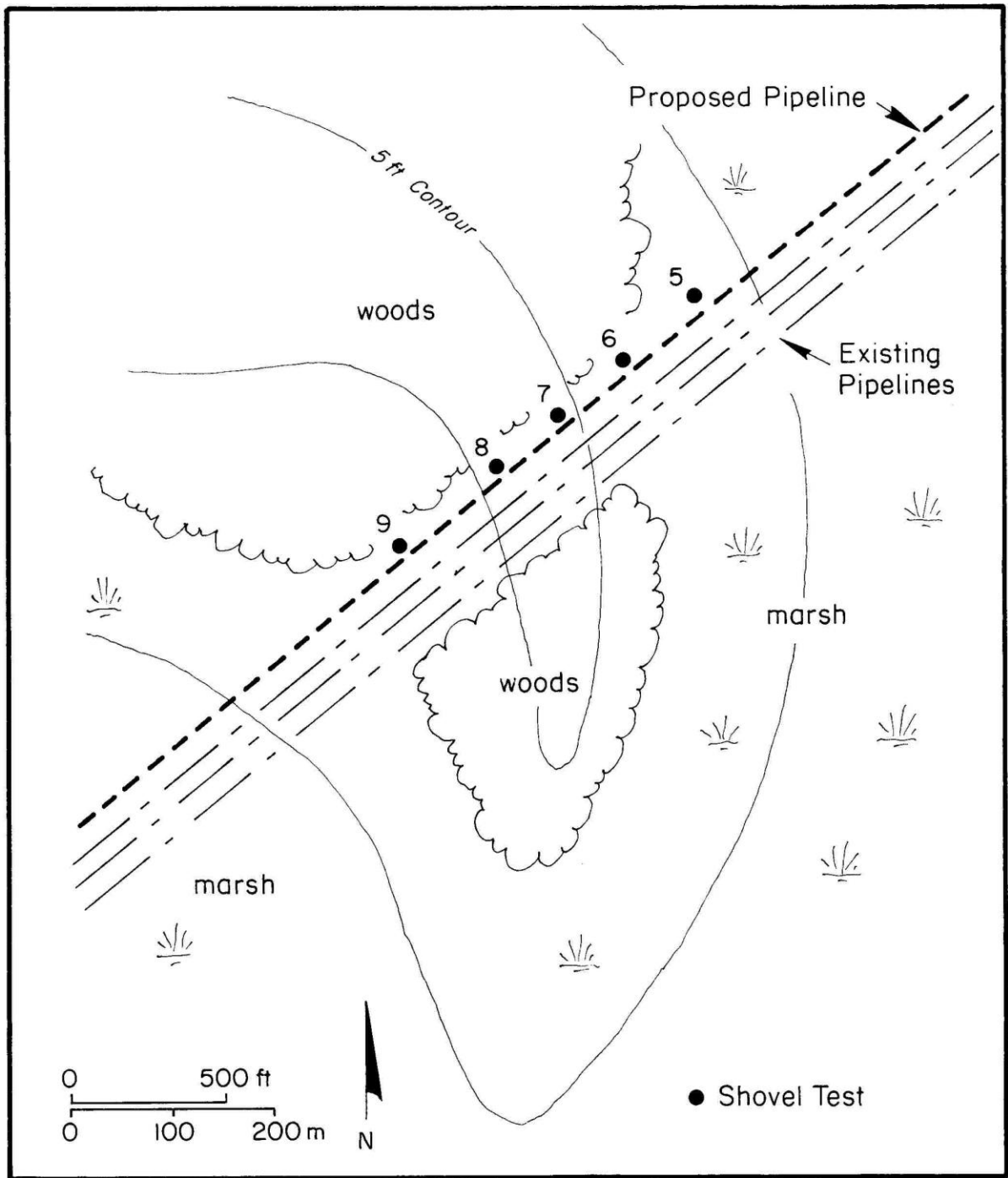


Figure 6. Area 2, Shovel Tests

Area 3

This area is located just to the west of the main channel on the Neches River in Orange County. On the topographic map the area appears to contain areas with some relief that may have been suitable for prehistoric occupation. The survey crew was informed that the soil here consists of dredge spoil from several episodes of dredging the ship channel. The crew observed the soil to be coarse sand with scattered shell, mostly *Rangia* sp. According to the informant, the spoil is 20 feet thick in places where the new pipeline will be installed. Starting about 200 meters away from the bank of the river, the new pipeline will be installed by boring beneath the river channel. Therefore, there will be little disturbance on the surface. A 100% Pedestrian survey of the area was performed, and no cultural materials were observed. No shovel tests were dug. The crew used the marsh buggy to visit this area also.

Area 4

This area consists of a wetlands just across the river and the uplands above the river where the development associated with oil and gas refining is situated. At the time of the survey, the crew was told that the new line may change. Therefore, the crew walked over a much larger area and visually inspected the surface. Virtually the entire area was found to be disturbed, and no shovel tests were excavated.

Area 5

This area was reached by private vehicle. The field crew found dry land with mixed pines and hardwoods. Although the area had been scraped and filled during installation of the existing pipelines to the south plus others that converge from another right-of-way, the area was shovel tested because of its proximity to Anderson Gully to the south. In all, 10 tests were excavated. They were dug through a sandy clay and silty clay overlying firm clay in some areas. Figure 7 depicts the approximate location of the 10 shovel tests in Area 5. No cultural materials were encountered.

Area 6

This area was reached by private vehicle. The field crew found the area to be virtually identical to Area 5 except it was further from the gully. Based on the lack of cultural materials in the 10 shovel tests in Area 5 and the greater distance to water, Area 6 was not considered a high probability area. Therefore, no shovel tests were excavated.

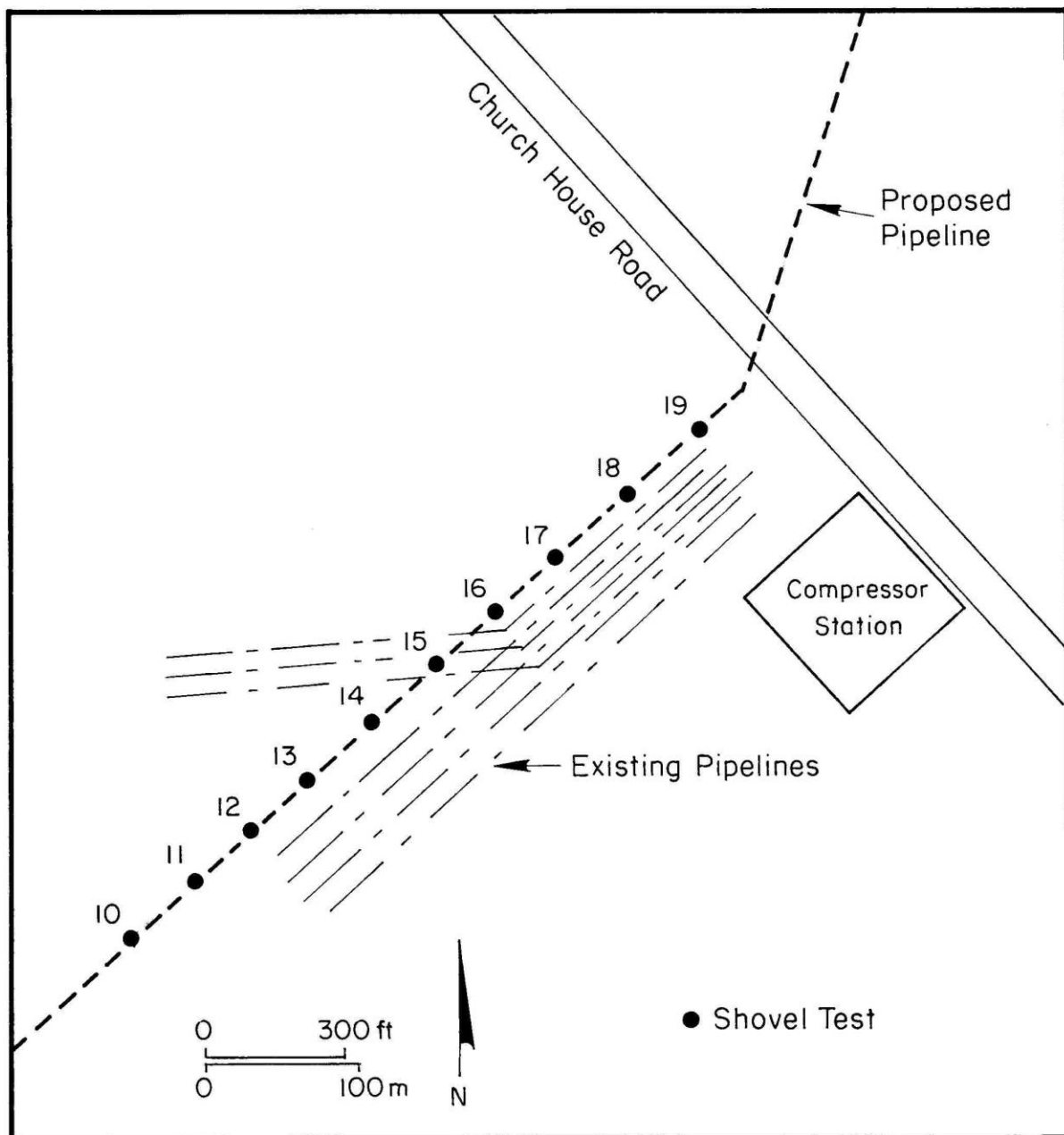


Figure 7. Area 5, Shovel Tests

RESULTS AND CONCLUSIONS

Examination of the files at TARL in Austin, Texas revealed three prehistoric sites have been recorded in the vicinity of the project area. No evidence of these sites was found during the current survey. Sites 41OR85 and 41OR87 are small sites that are to the north of the area examined. Site 41OR89 may be a larger site, but it is also outside the current project area. The only evidence of a prehistoric site found by the survey crew consisted of one flake and two pieces of mussel shell in a disturbed context associated with a previously installed pipeline. There is no archaeological site plotted on the TARL maps in this location. BVRA believes that additional prehistoric sites are likely to be found in the area, but the route of the pipeline as currently proposed did not pass through any such locations. Most of the area examined was low and marshy. Only three areas contained enough soil to warrant shovel testing. This survey was conducted in accordance with the Minimum Survey Standards as outlined by the Texas Historical Commission, Archeology Division.

RECOMMENDATIONS

BVRA conducted an archaeological survey along a five mile route for a proposed natural gas pipeline in Jefferson and Orange counties. No prehistoric sites were found, and no standing structures or evidence of historic utilization of the project area other than the refining area on the west bank of the Neches River. It is recommended that Duke Energy Field Services be allowed to proceed with construction of the pipeline as currently planned. If the route is changed additional survey by a professional archaeologist may be necessary. Should evidence of a prehistoric site or historic site greater than 50 years be encountered during construction, all work must cease until the situation in the area of the find can be evaluated by the Corps of Engineers, Galveston District.

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Appendix I. Shovel Test Log

Shovel Test	Depth (cm)	Profile	
Area 1			
1	80	0-70 cm 70-80 cm	10YR 6/3 fine sand with 2.5YR 5/5 clay inclusions 2.5YR 5/5 clay
2	60	0-50 cm 50-60 cm	10YR 6/3 fine sand with 2.5YR 5/5 clay inclusions 2.5YR 5/5 clay
3	30	0-30 cm	10YR 6/3 fine sand, then water
4	20	0-20 cm	10YR 6/3 fine sand, then water
Area 2			
5	20	0-20 cm	10YR 6/3 fine sand, then water
6	15	0-15 cm	10YR 6/3 fine sand, then water
7	60	0-50 cm 50-60 cm	10YR 6/3 fine sand 2.5YR 5/5 sandy clay
8	40	0-40 cm	10YR 6/3 fine sand, then water
9	25	0-25 cm	10YR 6/3 fine sand, then water
Area 5			
10	30	0-30 cm	2.5YR 4/3 sandy clay with FeO ₂ nodules, then 10YR 6/4 sandy clay
11	30	0-30 cm	2.5YR 4/3 sandy clay with FeO ₂ nodules, then 10YR 6/4 sandy clay
12	25	0-25 cm	2.5YR 4/3 sandy clay with FeO ₂ nodules, then 10YR 6/4 sandy clay
13	30	0-25 cm 25-30 cm	10YR 6/4 sandy clay 10YR 6/4 sandy clay with CaCO ₃ nodules
14	30	0-25 cm 25-30 cm	10YR 6/4 sandy clay 10YR 6/4 sandy clay with CaCO ₃ nodules
15	75	0-70 cm 70-75 cm	10YR 7/3 silty clay 10YR 7/5 clay
16	30	0-25 cm 25-30 cm	10YR 7/3 silty clay 10YR 7/5 clay
17	40	0-35 cm 35-40 cm	2.5YR 4/3 sandy clay with FeO ₂ nodules, then 10YR 6/4 sandy clay
18	60	0-55 cm 55-60 cm	10YR 7/3 silty clay 10YR 7/5 clay
19	50	0-45 cm 45-50 cm	10YR 7/3 silty clay 10YR 7/5 clay

*All tests were negative