

AN ARCHAEOLOGICAL SURVEY OF THE PROPOSED ROYAL OIL AND GAS  
CORPORATION FOSTER MINERALS D-1 WELL AND ACCESS ROAD  
IN THE SAM HOUSTON NATIONAL FOREST  
SAN JACINTO COUNTY, TEXAS

By

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Brazos Valley Research Associates

Project Number BVRA 94-04

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## **ABSTRACT**

An archaeological survey of a proposed well pad site of approximately 2.98 acres and access road (1680 feet) was conducted by Brazos Valley Research Associates on March 5, 1994. This project was conducted for the Royal Oil and Gas Corporation, Inc. of Corpus Christi, Texas. The project area is the Foster Minerals D-1 well and access road in the Sam Houston National Forest, San Jacinto County, Texas. This investigation was performed using the pedestrian survey method supported by shovel testing. No evidence of a prehistoric or historic site was found and it is recommended that construction be allowed to proceed as planned. All records and pertaining to this project are presently housed at Brazos Valley Research Associates awaiting permanent curation at the Texas Archeological Research Laboratory (TARL).

## **ACKNOWLEDGMENTS**

I would like to thank those whose cooperation made the completion of this project possible. William Gregorcyk of Royal Oil and Gas Corporation, Inc. provided me with maps and other information on request as did Shine & Associates in Silsbee, Texas. Geologist Davis S. Pettus visited the site and helped with the shovel testing. At TARL, Carolyn Spock, Head of Records, is acknowledged for her assistance in checking the site files and helping with the curation process. Lili Lyddon drafted the figures that appear in this report.

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## INTRODUCTION

Royal Oil and Gas Corporation, Inc. of Corpus Christi, Texas plans to construct a well pad and access road in the Sam Houston National Forest, San Jacinto County, Texas. This tract is the property of the National Forest Service, United States Department of Agriculture. The project area is located in the 107 acre Foster Minerals lease that is part of the W. L. Rhoton survey (Abstract 257). The proposed well pad site is the Foster Minerals D-1 well and access road and is approximately 2.98 acres in size (Figure 1). More specifically, the access road is 1680 feet in length with a 20 foot right-of-way, while the well pad is 360 x 360 feet (2.98 acres). Prior to this survey an environmental study was done which determined that there are no wetlands present within the 2.98 acre well pad site. The access road, with a right-of-way of 15 feet, follows an existing pipeline at the south end of the project area (Figure 1). It then turns to the north where it joins the well pad site. There are several areas of wetlands that are crossed by the access road. The nearest permanent stream is Winters Bayou that is located 3900 feet from the center hole in a southwest direction. Winters Bayou is a tributary of a major drainage in the county, the East Fork of the San Jacinto River, which is 5000 feet to the east of the project area.

This well pad location is part of the Mercy Oil Field that contains several similar well pad sites along with Central Coal and Coke Number 1-B and Central Coal and Coke Number 2-B, also owned by Royal Oil and Gas Corporation, Inc. These two well sites are to the west of the current project area at an approximate distance of 2431.78 and 2182.13 feet, respectively. The project area is situated in the southwest portion of San Jacinto County less than 10 miles (9.45 km) northwest of Cleveland, Texas that is located in adjacent Liberty County (Figure 2). Topographic coverage of the well pad site is provided by the USGS map Bear Creek (Figure 3).

Construction plans for the well pad will significantly alter the pad and access road. In order to make the area available for drilling activities all vegetation will have to be removed. Some of the larger trees have deep root systems and it is possible that several feet of soil will be disturbed during this phase. After the clearing process the tract will be leveled. The only plans for subsurface construction involves the center hole where the well head will be placed. The presence of a major drainage such as Winters Bayou close to the project area makes the Foster Minerals D-1 well pad and access road a likely location for a prehistoric site. Important sites are known to occur along this drainage in both San Jacinto and Walker counties. In fact, prehistoric site 41SJ48 was recorded by Brazos Valley Research Associates at the Central Coal and Coke Number 2-B well 2182.13 feet to the west during a recent survey (Moore 1993b). Therefore an archaeological survey was requested by the Department of Antiquities Protection, Texas Historical Commission. In order to comply with this requirement, Royal Oil & Gas Corporation, Inc. contracted with Brazos Valley Research Associates of Bryan, Texas to evaluate the well pad site. The project number assigned by Brazos Valley Research Associates is BVRA 94-04. No permit from the Texas Antiquities Committee was required for this project.

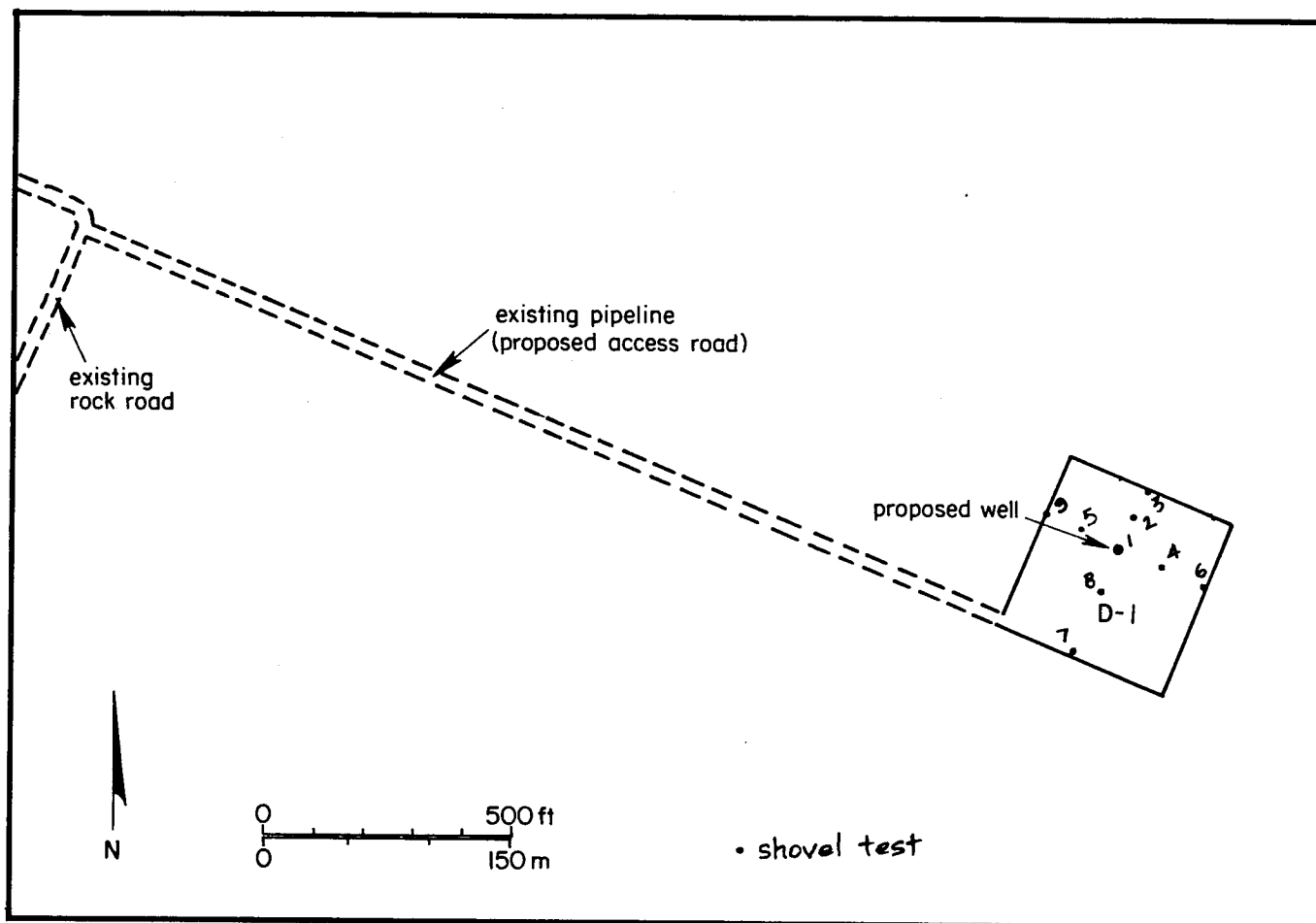


Figure 1. Well Pad and Access Road.

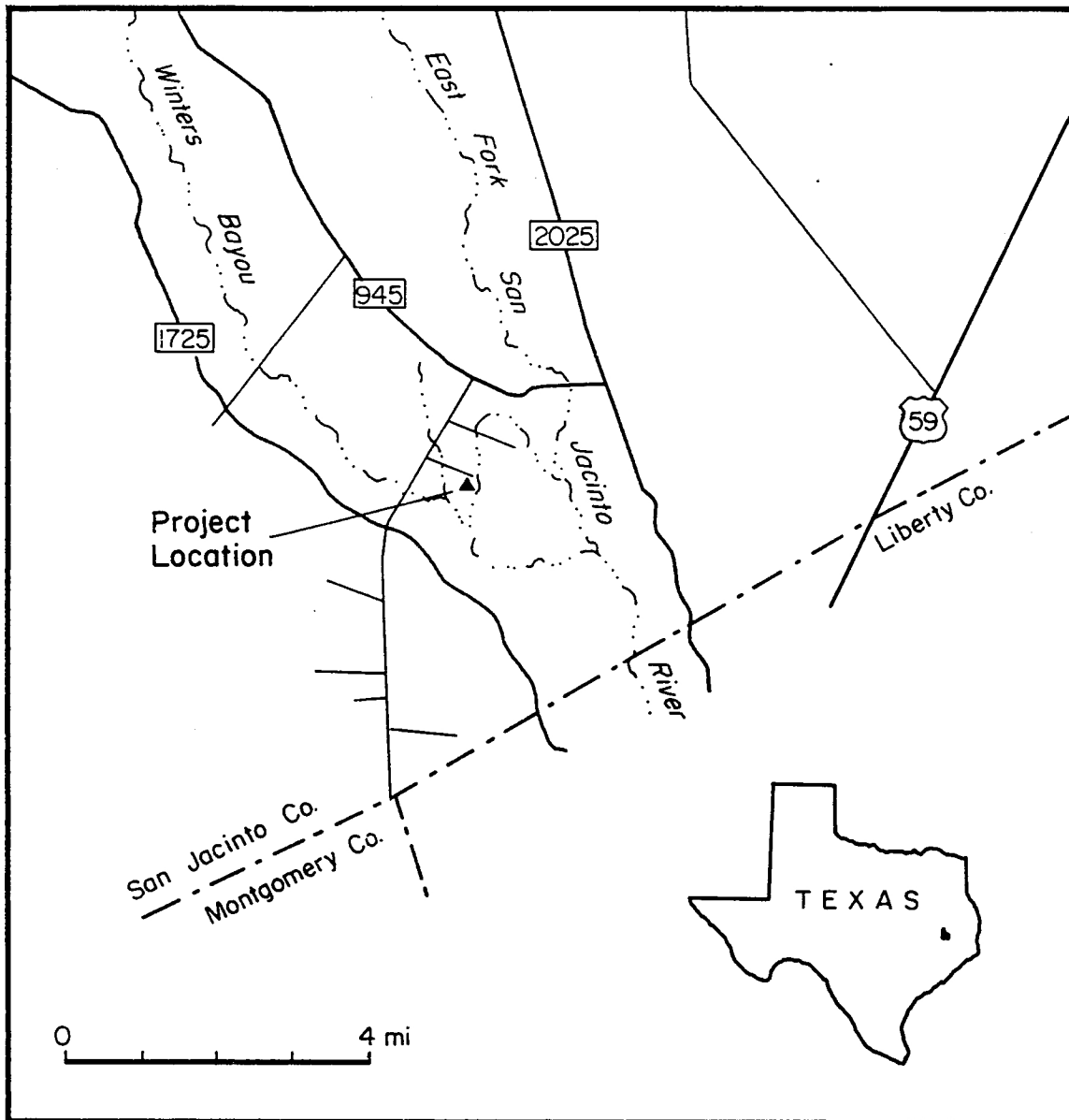


Figure 2. General Location Map.



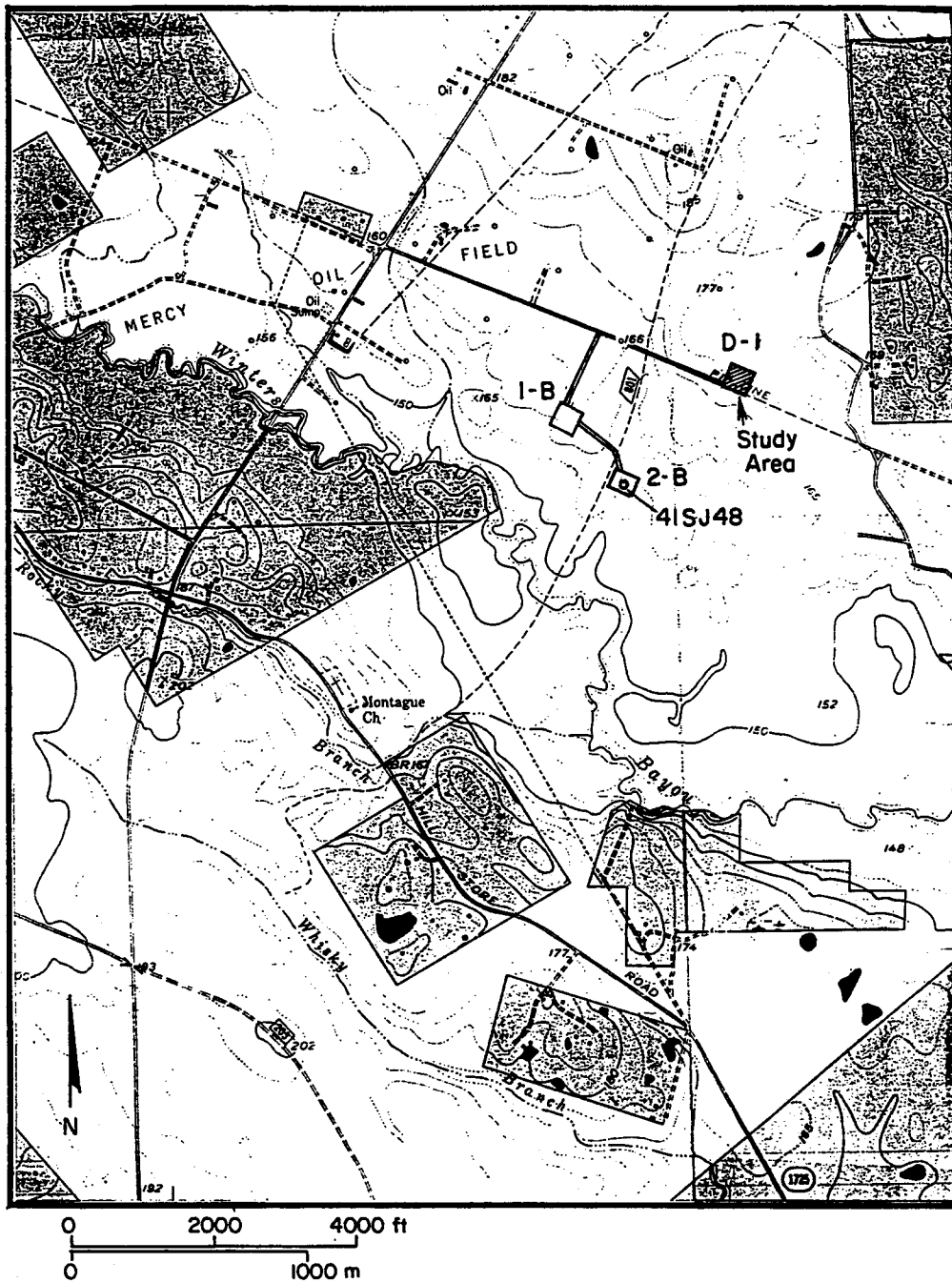


Figure 3. Project Area as Depicted on 7.5' Topographic Map

## ENVIRONMENTAL SETTING

### General

The project area is located within the West Gulf Coast Plain physiographic province and the Austropriarian biotic province as defined by Blair (1950:98-100). The overstory vegetation in the project area is primarily large pines while the understory consists of various shrubs and forbs. A more detailed discussion of the environmental setting for the Sam Houston National Forest is presented in Ippolito's (1983) thorough overview of Texas National Forests. The surface geology is the Willis Formation which consists of various sands and clays containing some small gravels. The reader is referred to Volume I (Stratigraphy) of the Geology of Texas by Sellards et al. (1932) for a more in-depth discussion of the geology of this area. In terms of its topographic setting the well pad and access road are situated on an upland divide between Winters Bayou to the west and the East Fork of the San Jacinto River to the east.

### Soils

The project area is depicted in the soils book for San Jacinto County (McEwen et al. 1988) on Sheet Number 88. The entire area is comprised of Dallardsville loamy very fine sand, 0 to 2 percent slopes (DaA). This soil is part of the Sorter-Otanya-Waller map unit as described in McEwen et al. (1988:11). The soils in this unit are in the southern part of San Jacinto County. Slopes range from 0 to 3 percent and the landscape is characterized by broad, smooth, nearly level areas and some gently sloping areas. Drainage areas are poorly drained. Pines are more common in the better drained areas.

The Dallardsville soil type is described by McEwen et al. (1988:22-23) as a nearly level to gently sloping soil near the head of flat, poorly defined drainage ways and on nearly level flats that typically are interspersed with low mounds and ridges. Individual areas are irregular in shape and range from 15 to about 300 acres. The average slope is about 0.5 percent.

Typically, this soil has a loamy very fine sand surface layer about 19 inches thick. The upper part of the surface layer is grayish-brown with a pale brown in the middle part and very pale brown in the lower part. The subsoil extends to a depth of 70 inches and is light gray loamy very fine sand tongued and mixed with pale brown very fine sand loam in the upper part that grades to light gray clay loam. A perched water table is at a depth of 1 to 2 feet during the winter and spring.

## PREVIOUS INVESTIGATIONS

San Jacinto County is located in the Southeast Texas region as defined by Biesart et al. (1985:76) in a statistical overview of prehistoric sites in Texas published by the Office of the State Archeologist, Texas Historical Commission. This is an area that was well documented in terms of numbers of sites in 1985 when compared to other regions of Texas. When the statistical overview was compiled, a total of 1630 prehistoric sites (8.06% of the state) were recorded in the entire region. Only four of the thirteen regions in Texas reported more sites or had a higher percentage statewide. In terms of county statistics only two counties (Chambers and Harris) had more recorded sites (132) in 1985. The 132 sites recorded in the county in 1985 consisted of 8.10% of the region and .65% of the state. The reader is referred to the overview for additional statistical information concerning San Jacinto County and its relation to the rest of Texas. The total number of sites, both prehistoric and historic, as of March 4, 1993 is 153.

Although numerous archaeological investigations have been conducted in San Jacinto County, the vast majority has been small area surveys, often resulting in negative findings. Many of these investigations resulted from the demand placed on the landscape by the oil and gas industry. A bibliography of the Southeastern Region of Texas by William E. Moore (1989) contains a listing of all work done in San Jacinto County through 1989. In addition, an ongoing project sponsored by the Department of Antiquities Protection, Texas Historical Commission is engaged in abstracting contract reports by year. To date, volumes have been published for 1987 (Moore 1991), 1988 (Moore 1990a), 1989 (Moore 1993a), 1990 (Moore 1992a), and 1991 (Moore 1992b). The volume for 1992 is almost complete at this time. These reports are the most current source for data regarding contract work in Texas.

Two overviews of the archaeology of the National Forests of Texas have been published. In 1979, Ross C. Fields (1979) prepared a report that discussed the cultural resources of each forest. This was followed by Ippolito's (1983) more extensive work in 1983. Ippolito's effort provides a comprehensive discussion of the archaeology of all four forests and is the most recent and thorough review of the archaeology of the Texas national forests available.

The first major archaeological investigation to be conducted in San Jacinto County was the survey and testing in the Livingston Reservoir. The initial survey was conducted in 1963 by the Texas Archeological Salvage Project (TASP) and recorded sites within and adjacent to the proposed lake. Most of the sites located were found to occur towards the southeastern end of the lake. The results of the survey have been reported by Nunley (1963).

Two of the sites found during the Lake Livingston survey in San Jacinto County were tested in 1965. These were the Trichel site (41SJ16) excavated by TASP personnel and the Houston site (41SJ19) excavated by members of the Houston Archeological Society. Both sites have been classified as Late Archaic to Late Prehistoric in age based on the presence of dart points, arrow points, and ceramics.

The only other prehistoric site to be excavated in San Jacinto County is the Strawberry Hill site (41SJ160). This site was investigated by the Texas Highway Department in 1974 (Keller and Weir 1979). Strawberry Hill yielded a large quantity of artifacts but, according to the authors, produced little new information. It is described as a multi-component site containing both Archaic and Late Prehistoric materials.

A site in San Jacinto County dating to the mid-nineteenth century was excavated by Dick Ping Hsu (1969) for the Office of the State Archeologist.

Most recent, and very applicable to the present study, are two surveys of well pad sites in the Mercy Oil Field, the location of Foster Minerals D-1 well and access road. These well sites are depicted in Figure 3 along with the current project area. In 1992, James E. Corbin examined the Central Coal and Coke Number 1-B well and access road 2431.78 feet west of the current project area. Corbin's (1992) study found no sites.

In 1993, the Central Coal and Coke Number 2-B well and access road was examined by Brazos Valley Research Associates (Moore 1993b). One prehistoric site was found and recorded as 41SJ48. This site was described as a sparse lithic scatter of only four flakes occurring just beneath the humus zone at a depth of between 10 and 34 cm. No diagnostic artifacts or features were found. Therefore, the age and function of this site are not known. After consultation with William A. Martin of the Department of Antiquities Protection, Texas Historical Commission, it was decided that this site was not worthy additional work.

## CHRONOLOGY

The cultural chronology of this part of Texas is, according to Story (1981), by no means completely understood. Other researchers such as Aten (1983), Bement et al. (1987), Bond and Moore (1980), Ippolito (1983), Keller and Weir (1979), Moore (1978, 1990b), Patterson (1979a, 1979b, 1979c, 1983, 1986, 1989), Shafer and Stearns (1975), Shafer et al. (1975), Story (1974, 1981), Story et al. (1990), and Wheat and Gregg (1988) have discussed the chronology of Southeast Texas and the Texas National Forests in more detail and the reader is advised to consult these sources for additional information.

The following prehistoric chronology has been summarized from work at Scott's Ridge by Shafer and Stearns (1975:8-11). According to these authors, the earliest period recognized for Southeast Texas is that time just after the Pleistocene and prior to the introduction of ceramics and the bow and arrow. This time period is referred to as the Lithic Period and is divided into early, middle, and late.

The Early Lithic Period (8000 B.C. - 4000 B.C.) is the least known. Sites of this period seem to be located on the crests of high ridges overlooking stream valleys or old geomorphic features whose original surfaces are reasonably intact. The Scott's Ridge site (41MQ41), located in the Sam Houston National Forest, is an example of this period. Data on size and content of Early Lithic sites are lacking. Artifacts that represent this period include dart point types *San Patrice*, *Angostura*, *Merserve*-like, *Big Sandy*-like, *Plainview-golindrina*-like; gouges; notched pebbles, and perhaps small end scrapers.

The Middle Lithic Period (4000 B.C. - 1000 B.C.) is usually evidenced by projectile point types *Morrill*, *Calf Creek*, *Yarbrough*, *Evans*, *Wells*, and *Bulverde*-like. Also, some corner-notched and straight-stemmed forms, some of which have serrated or bifacially beveled blades, have been reported. Data concerning other materials associated with sites of this period are virtually non-existent. Stone beads have been reported from a Middle Lithic Period site near Lake Livingston.

The Late Lithic Period (1000 B.C. - 200 B.C.) is characterized by parallel and contracting stemmed dart points such as the *Gary* type, unstemmed biface failures, pitted stones, retouched flakes, and burned clay balls. Sites tend to be found on recent geomorphic features such as sandy ridges, knolls, and low bluffs along permanent streams of all sizes. Sites of this period vary in size but "the distribution of the refuse usually correlates with the suitable habitation area of the particular geomorphic features" (Shafer and Stearns 1975:9).

The Ceramic Period began with the introduction of pottery in Southeast Texas. The Early Ceramic Period (200 B.C. - A.D. 900) is characterized by the same kinds of lithics as found in the Late Lithic Period and sites are situated on the same kinds of landforms. The addition of sandy paste pottery is the main difference between the two assemblages.

During the Late Ceramic Period (A.D. 900 - A.D. 1700) sandy paste pottery remained the dominant ware although bone-tempered and grog-tempered ceramics were utilized. The use of the bow and arrow is evidenced by the presence of arrow points such as *Alba*, *Catahoula*, *Friley*, and *Perdiz*. The preference for sandy locations on recent, as well as older landforms, along permanent streams continued into this period. It is believed that cultural interaction between Indian groups of Southeast Texas and the Caddoan populations of central and northeast Texas occurred but the nature of this interaction has yet to be investigated (Shafer and Stearns 1975:10).

### Historic Period

The Historic Period is marked by the introduction of European-made materials into the prehistoric lifestyle. Although no well-defined historic Indian sites have been recorded in the vicinity of the project area, historic materials associated with aboriginal deposits have been found in the Wallisville area (Gilmore 1974; Dillehay 1975). These historic materials are believed to represent French and Spanish interaction. In the Lake Livingston area at least two sites containing materials believed to represent Alabama or Koasati Indian settlements have been examined (Hsu 1969).

According to Newcomb (1961:316), the main indigeneous Indian groups in Southeast Texas south of the Caddo were the Bidais, Deadose, Patiri, and Akokisa. These groups were closely related and spoke the Atakapan language. McClurkan (1968:109) believes there is good linguistic evidence that the Atakapan speakers formed a separate cultural entity for at least 4000 years. It has also been suggested that the Atakapan speakers of historic times may be the remnants of the groups responsible for the archaeological materials of late prehistoric times, especially those included in the Early and Late Ceramic periods as defined by Shafer and Stearns (1975).

San Jacinto County was created in 1869, organized in 1879, and named for the Battle of San Jacinto in 1836 (Moore 1975). Much of the following discussion was taken from The Handbook of Texas (Webb 1952:555), Ippolito (1983), and the 1992-1993 Texas Almanac (Kingston and Crawford 1991). It is perhaps best known as the site of Raven Hill Plantation, home of Sam Houston. Although early settlement occurred there was no post office until 1847. The earliest available population figures are from 1880 when the county had 6186 inhabitants. In 1881, the Houston, East, and West Texas Railroad was constructed along the southeast corner of the county and a number of mills were established along the route. The six-mile Trinity Valley Southern Railroad was chartered in 1901. In 1909, a peak population of 12,205 was reported. The census of 1940 showed 9056. This decline is believed to have resulted from the development of mills in adjacent counties and to poor transportation facilities within the county. By 1950, the population had dropped to 7162. Today the population of the county is 16,372.

The main economic pursuits of San Jacinto County were agriculture and logging. In 1940, the production of hogs was the principal livestock industry although some beef and dairy cattle were raised. Crops included cotton, corn, peas, peanuts, sweet potatoes, and truck. The county is located in a major timber producing area of Texas. From the middle 1880s until the 1920s nearly all of the six million acres of timberland in east Texas was cut.

## METHODS

The project was divided into three phases - background and archival research, field investigation, and report preparation. The research phase consisted of a check of the site records at TARL. The Principal Investigator performed this task.

A check of the site records at TARL revealed no sites have been recorded within the project area. The nearest recorded site is 41SJ48 which was found during a 1993 survey of the Central Coal and Coke 2-B well 2182.13 feet to the southwest by Brazos Valley Research Associates (Moore 1993b). Other nearby sites is 41SJ38 and 41SJ156 on Winters Bayou and 41SJ45, 41SJ46, and 41SJ136 on the East Fork of the San Jacinto River. In order to better understand the nature of previous archaeological work in the region, the archival research included a review of the following documents: a statistical overview of Texas archaeology prepared by the Texas Historical Commission (Biesaart et al. 1985), an overview of the National Forests in Texas by Forest Service Archeologist, John E. Ippolito (1983) a bibliography of Southeast Texas (Moore 1989), and a series of reports containing abstracts for Texas contract archaeology (Moore 1990a, 1991, 1992a, 1992b, 1993a, 1994).

The field investigation was conducted on March 5, 1994. On this day, William E. Moore (Principal Investigator) and David S. Pettus (Geologist) examined the well pad site and access road. Because of poor ground visibility shovel testing was necessary. One test was dug at the center hole; the remaining eight tests were dug in all four directions from the center hole, two in each direction. The access road was determined to cross an area of low probability for prehistoric site occurrence and lies in a disturbed area where an existing pipeline is in place. Therefore, it was not shovel tested except for its approach to the well pad at the top of the sandy ridge. In all, nine shovel tests were excavated over an area of approximately three acres. Excavated matrix was screened through 1/4 inch hardware cloth. Shovel test data were recorded on a shovel test log and in the field notes. Tests were dug until we were forced to quit because of roots, clay, or a shallow water table. Depths of the tests varied from 50 to 75 cm below the ground surface.

The report was written in-house by the Principal Investigator. Field notes were typed and a draft report prepared for review by the Department of Antiquities Protection, Texas Historical Commission.



## **RESULTS AND CONCLUSIONS**

This survey did not locate any evidence of cultural resources within the project area. It is believed that the topographical setting for the Foster Minerals D-1 well and access road is not a preferred location for a prehistoric site. Although the project area is in sandy soils, the presence of a shallow water table at approximately 50 cm below the ground surface is viewed as a negative factor in terms of site location. The presence of Winters Bayou 3900 feet to the west is viewed as a positive factor for prehistoric site occurrence; however, the project area is further from water than the previously surveyed Central Coal and Coke Number 2-B well and access road where a prehistoric site (41SJ48) was found. Therefore, the combination of distance to water, a more upland setting, and shallow water table, probably accounts for the lack of a prehistoric setting at this location.

## **RECOMMENDATIONS**

No cultural resources were found during the archaeological survey of the Foster Minerals D-1 well pad and access road in San Jacinto County, Texas by Brazos Valley Research Associates. It is, therefore, recommended that Royal Oil & Gas Corporation, Inc. be allowed to proceed with construction as planned. The presence of an archaeologist to act as monitor during the construction phase is not considered necessary. There is always the possibility that cultural materials or features are missed during the course of any archaeological survey. Should the presence of cultural materials or features not discussed in this report be discovered during construction, the client is advised to cease work and contact the Texas Historical Commission so the situation can be properly evaluated.

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## APPENDIX I: SHOVEL TEST LOG

| Test | Date   | Depth | Diameter | Results |
|------|--------|-------|----------|---------|
| 01   | 3-5-94 | 70 cm | 30 cm    | sterile |
| 02   | 3-5-94 | 60 cm | 30 cm    | sterile |
| 03   | 3-5-94 | 70 cm | 30 cm    | sterile |
| 04   | 3-5-94 | 60 cm | 30 cm    | sterile |
| 05   | 3-5-94 | 50 cm | 30 cm    | sterile |
| 06   | 3-5-94 | 60 cm | 30 cm    | sterile |
| 07   | 3-5-94 | 60 cm | 30 cm    | sterile |
| 08   | 3-5-94 | 75 cm | 30 cm    | sterile |
| 09   | 3-5-94 | 70 cm | 30 cm    | sterile |