AN ARCHAEOLOGICAL SURVEY FOR THE CITY OF PEÑITAS COLONIA WASTEWATER PROJECT IN HIDALGO COUNTY TEXAS

Antiquities Permit 3958

By
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Brazos Valley Research Associates
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AN ARCHAEOLOGICAL SURVEY FOR THE CITY OF PEÑITAS COLONIA WASTEWATER PROJECT IN HIDALGO COUNTY, TEXAS

BVRA Project Number 05-17

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ABSTRACT

An archaeological survey of 3 km of force main, three lift stations, and two proposed sites for a wastewater treatment plant in southwestern Hidalgo County, Texas was conducted by Brazos Valley Research Associates (BVRA) in November of 2005 for the City of Peñitas under Antiquities Permit 3958. In all, 20.8 acres were examined. No previously recorded archaeological sites have been recorded within any portion of the project area, and no new sites were found. One small scatter of three chert objects was found at Plant Site A and is discussed in this report as an Isolated Find. One historic cemetery (San Antonio) is located in the area, but it is outside the Area of Potential Effect (APE). No artifacts were collected.

ACKNOWLEDGMENTS

The authors acknowledge those individuals who provided assistance during this project. Julian J. Gonzales, City Administrator for the City of Peñitas, obtained landowner permission and provided a backhoe operated by Mario Rosales and Pedro Rosales under the supervision of Duane Bell. Maps and other information was provided by Hollie H. Nowlin and George E. Lazaro of J. F. Fontaine & Associates. The background search was provided by Jean Hughes, Records Conservator at the Texas Archeological Research Laboratory (TARL). Jennifer McMillan provided technical support, and Nora Rogers assisted with the editing chores. Joe Metz owns the property where the treatment plant will be constructed. He provided information about nearby Indian camps and local disturbance, specifically the settling basin.

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INTRODUCTION

The City of Peñitas is a small community located on Farm-to-Market Road 1427 in rural southwestern Hidalgo County, Texas (Figure 1). Currently, the city's service area is bounded on the south by the Rio Grande River, on the west by the city of La Joya, on the east by the city of Palmview, and on the north by farm and ranch lands. The proposed wastewater project will benefit approximately 1200 colonia families living in and around the incorporated city limits of Peñitas with first time wastewater service. Presently, there are 600 families living in colonias within the city limits of Peñitas. These families are presently provided water service by the La Joya Water Supply Corporation. Wastewater treatment in the project area consists of individual on-site septic tank systems. Lot sizes are typically 50' x 100' and are inadequate to treat efficiently the waste generated by these families with on-site septic tank systems. The development of this project will help eliminate the existing health hazard posed by the current method of treating waste.

The current project consists of a collection system, three lift stations, one grinder pump station, and a wastewater treatment plant. The gravity flow collection system will consist of approximately 109,000 linear feet of 8" PVC gravity sewer lines installed on grid with manholes spaced not more than 500 feet apart. The three lift stations with force mains ranging from 4" to 12" in diameter are proposed to transfer the wastewater to a new 750,000 gallon per day wastewater treatment plant. The project area is depicted on two USGS 7.5' topographic quadrangles, Citrus City (2698-132) and La Joya (2698-123).

All of the collection system will be installed within existing road rights-of-way. The three lift stations will be small (20' x 20') sites with frontage on existing road rights-of-way. The proposed wastewater treatment plant site will be constructed on an 8.7 acre tract of land owned by the city.

Removal of large trees within paths of pipelines will be avoided where possible by boring. Creek crossings will be encased, and creek bottoms and slopes restored to their original conditions. Maps will be evaluated for crossings of prime farmland, floodplains, and wetlands throughout the project area. It is anticipated that the project will not result in adverse effects on these resources since the majority of the proposed collection system will be placed in previously disturbed routes within the rights-of-way of existing roads and streets.

Proposed sewer line additions will be centered in a 15-foot wide permanent easement adjacent to the various road rights-of-way, which they parallel. The pipe will be placed in a trench two feet wide and four feet deep.

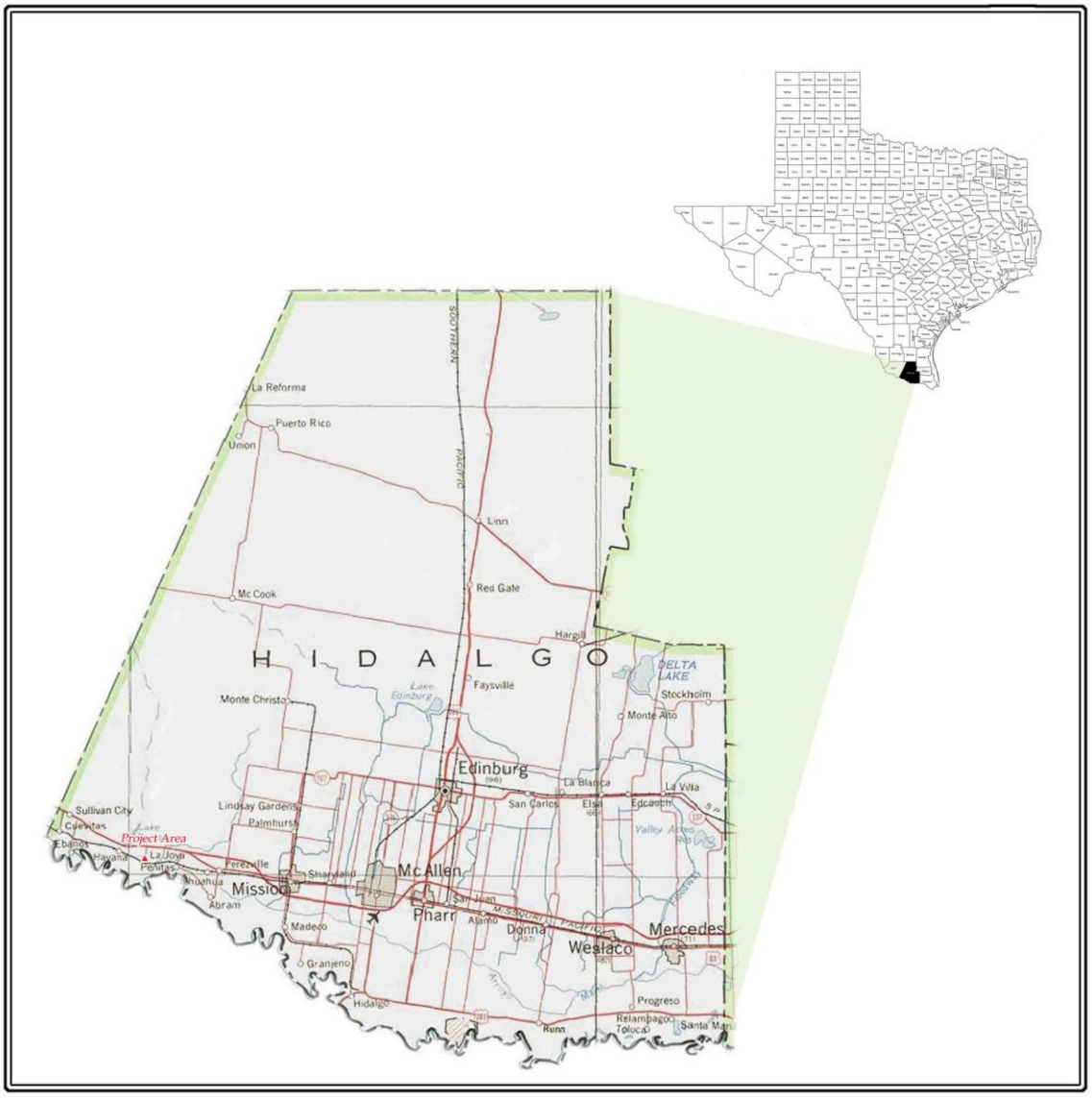

Figure 1. General Location

Funds for this project will come from the United States Department of Agriculture (USDA), Rural Utilities Services (RUS). The general location of the project area is depicted in Figure 1. After a field assessment and review of past disturbances to the overall project area, the area surveyed by BVRA was greatly reduced in size and is depicted on only one topographic quadrangle, La Joya (Figure 2).

An archaeological survey was requested in an email from Debra L. Beene of the THC to Hollie H. Nowlin of the engineering firm J. F. Fontaine & Associates, Inc. dated November 8, 2005. In order to satisfy this requirement, the City of Peñitas retained the services of BVRA to perform an archaeological survey per the requirements of the Texas Historical Commission (THC).

A field assessment and review of past work in the area by professional archaeologists revealed much of the area planned for construction has been disturbed to the point that archaeological survey is not necessary. It was also learned that shovel testing would not be possible in some of the rights-of-way where the line will be placed beneath existing pavement and that portions of the force main have already been installed. Because of the above-mentioned reasons, the two large subdivisions and other areas along the rights-of-way were eliminated from survey. At the time of this investigation two locations for the wastewater treatment plant were being considered, and this was an addition to the project area since only one location was depicted on the original maps submitted to BVRA. The methods. The survey methods for these areas are described in more detail in the *Methods* section below.

This survey followed the methods outlined in the Research Design submitted to the THC (Appendix I).

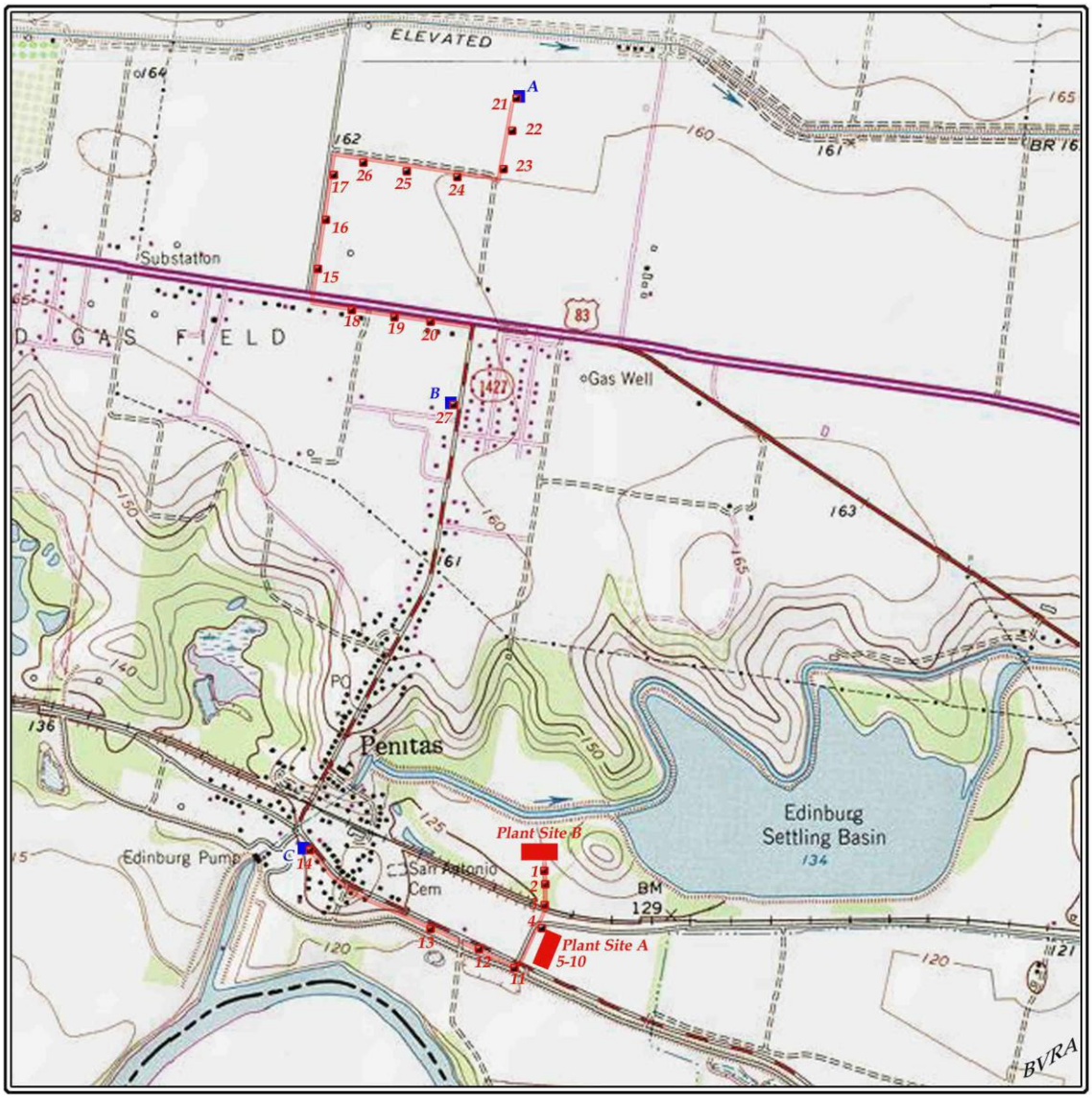

Figure 2. Project Area on Topographic Quadrangle La Joya

ENVIRONMENTAL SETTING

The following information was taken from the Hidalgo County soil survey (Jacobs 1981), a guide to Texas mammals Davis (1974), a planning document published by the THC (Mercado-Allinger et al. 1996), and The Handbook of Texas Online (2001).

Hidalgo County is in South Texas and is bordered by Cameron County on the east, Brooks County on the north, Starr County on the west, and Mexico on the south. The county seat is Edinburg, which is located at the junction of United States Highway 107 and United States Highway 281. The county is irregular in shape, measuring about 55 miles from north to south and about 50 miles from east to west. Hidalgo County comprises 1596 square miles of the Rio Grande delta. Its elevations range from 40 to 200 feet. The land surface is nearly level to gently sloping. Generally, drainage is in a northeastern direction. However, in the area around La Joya Creek in the southwestern part of the county, drainage is to the south, and on the Rio Grande flood plain drainage is to the east.

Hidalgo County is in the southernmost part of the Rio Grande Plain Land Resource Area. Many of the soils in the county were formed in sediments deposited by the Rio Grande River. These sediments are mostly clay and sand. The southern part of the county has moderately deep-to-deep loamy surfaces over clayey subsoils. Along the Rio Grande, brown to red clays occur.

Hidalgo County is in the South Texas Plains vegetation area, which features grasses, mesquite, live oaks, and chaparral. Many native plants have been reduced in recent years by extensive farming. These include chapote, guayacan, ebony, huisache, Brazilwood, and yucca. In 1982, 91% of the land was in farms and ranches with 52% of the farmland under cultivation and 85% was in irrigation. Primary crops were sorghum, cotton, corn, cantaloupes, carrots, and watermelons. The main fruit crops in the area are grapefruit, oranges, and pecans. Natural resources include caliche, sand, gravel, oil, and gas.

The climate is subtropical and subhumid. Temperatures range from an average low of 47 degrees Fahrenheit in January to an average high of 96 degrees Fahrenheit in July. The average annual temperature is 73 degrees Fahrenheit. Rainfall

Numerous species of mammals occur in Starr County today or were living there in the past. These include opossum, mole, shrew, black bear, raccoon, weasel, skunk, badger, fox, coyote, ocelot, cougar, jaguarundi, bobcat, squirrel, gopher, mouse, rat, beaver, rabbit, javelina, antelope, and deer (Davis 1974).

At the time of this survey very little natural vegetation or pristine landforms were found to exist within the APE. Much of the route of the force main was in disturbed rights-of-way along United States Highway 83 (Figure 3) and city streets in the colonias (Figure 4). The local soils consist of a clay loam over hard calcareous clay, clay and gravel over clay, and alluvial clay loam over clay.

Figure 3. View of Proposed Force Main Along Highway 83

Figure 4. View of Proposed Force Main Along Tom Gill Road

ARCHAEOLOGICAL BACKGROUND

According to a statistical overview published by the THC (Biesaart et al. 1985:76), Hidalgo County is located in the Southern Coastal Plains Cultural-Geographical Region of Texas. In 1985, when the overview was published, the number of archaeological sites in the region was 1516 or 7.50% of the state. In 1985, there were 89 recorded sites in the county. This accounted for 5.87% of the region and .44% of the state. Although three Paleo-Indian sites were reported, the majority of sites in 1985 were listed as Archaic (n=38) and Late Prehistoric (n=46). Site disturbance is common in the area. Biesaart et al. (1985:146) mention erosion disturbance (24 sites), construction disturbance (19 sites), disturbed and artificially capped (2 sites), deflated (5 sites), dispersed (73 sites), potted and/or surface collected (2 sites), and destroyed (25 sites). Sites with subsistence related features have been recorded with hearths present at 2 sites, burned rock features present at 11 sites, midden soil present at 1 site, bone beds present at 2 sites, and other (1 site). In 1985, 10 stone tool manufacturing areas were known to occur, and burials had been reported at four sites. Today there are approximately 200 recorded sites in Starr County.

According to a planning document for the Central and Southern Planning Region of Texas as defined by the Texas Historical Commission (Mercado-Allinger et al. 1996:13), Hidalgo County is located in the Rio Grande Plains Archeological Region. This is one of the major oil producing areas in the state. It also contains significant amounts of coal-bearing formations and is on the eastern edge of Falcon Reservoir. The area is rapidly changing due to an increase in tourists and seasonal residents (“Winter Texans”). These factors are major contributors to site disturbance in the area.

Sites defined as Paleo-Indian in South Texas are typically limited to surface discoveries of distinctive lanceolate spear points (Hester 1980a). As stated above, Archaic and Late Prehistoric sites are common and consist of campsites with subsistence-related features and, in some cases, burials.

According to Hester (1980b:57), there are two kinds of occupation sites in South Texas: surface-exposed sites and sites buried in stream silts. He states that “Erosion, often helped along by cultivation, cattle grazing, ranch roads, and droughts, has exposed many prehistoric occupation sites.” According to Hester (1980b:73), prehistoric cemeteries are present in the area. One of these is the Ayala site (41HG1) in Hidalgo County. This site contained multiple burials in flexed positions with associated grave goods. Ayala dates to the Late Prehistoric Brownsville Complex.

Several archaeological surveys have been performed in the vicinity of the project area. These projects were associated with oil and gas production (i.e., pipelines and well pads) and water drainage projects (canals). The kinds of sites found include prehistoric camps (41HG96), lithic scatters (41HG97, 41HG99, 41HG101, and 41HG102), and unknown prehistoric (41HG148). The only historic site recorded in the area appears to be a capped wall associated with the railroad (41HG143). The location of these sites and areas surveyed may be found on the maps at TARL and the Texas Archeological Sites Atlas. A listing of the surveys in the area, including those that recorded the above-mentioned sites, is presented as Appendix II.

Additional small area surveys have been conducted in Hidalgo County. For more information regarding other work in the area researchers are advised to consult the site files at TARL and the THC. No bibliography has been published for that part of South Texas that includes Hidalgo County. There is a published series entitled *Abstracts in Texas Contract Archeology* (published by the THC and compiled by William E. Moore) that documents all work in Texas from 1988 through 1992. As mentioned above, there are several overviews of South Texas that provide excellent data for the area. These are *Archeology in the Central and Southern Planning Region, Texas: A Planning Document* (Mercado-Allinger et al. 1996), *Digging Into South Texas Prehistory: A Guide for Amateur Archaeologists* (Hester 1980b), *Texas Graveyards: A Cultural Legacy* (Jordan 1988); *Prehistoric Archeological Sites in Texas: A Statistical Overview* (Biesaart et al. 1985), and *Traces of Texas History: Archeological Evidence of the Past 450 Years* (Fox 1983).

METHODS OF INVESTIGATION

Prior to the field survey, the Principal Investigator conducted a review of previous work in the general area and talked with other archaeologists. The Texas Historic Sites Atlas was checked for previously recorded sites and areas surveyed, and a records check by Jean Hughes at TARL was performed.

The project area was examined by a 100% Pedestrian Survey, shovel tests, and backhoe trenches. Shovel test locations along the route of the force main and at the lift station sites are depicted in Figure 2. Excavated earth from each shovel test was screened using ¼" hardware cloth, and a shovel test log was maintained (Appendix III). One shovel test was dug at each lift station (n=3), 19 tests were dug along the route of the force main, and 5 tests were dug at Plant Site A. All tests were terminated when the clay subsoil was encountered.

Pedestrian Survey was conducted where the ground surface was visible and was mainly carried out at the treatment plant site. This changerequired survey of two plant sites instead of one as depicted on the original maps and described in the Research Design (Appendix I). At the time of this survey, the location of the treatment plant had not been determined. Therefore two areas (A and B) were being considered by the city. At Plant Site A, a 100% Pedestrian Survey was carried out, and parallel transects at 30 meter intervals were walked across the plowed field. Two backhoe trenches were excavated in those areas where the subsurface disturbance will be the greatest, and each trench was dug to beyond the vertical limits of the APE. Selected areas along the walls of the backhoe trenches were profiled and photographed (Appendix IV). Also, selected samples of earth were screened, and the walls were examined for features and soil change. It was learned in the field that Plant Site B had been excavated for a levee borrow pit and then used as a settling basin. The present fill is recent silt from the abandoned basin. Therefore, no Pedestrian Survey was conducted at this disturbed site, and no subsurface work was performed. Figure 5 illustrates the use of the backhoe at Plant Site A, and Figure 6 is a view of Plant Site B. In addition, five shovel tests were dug in this area and were excavated to depths of 40 cm before reaching the clay subsoil. The approximate location of these tests appears in Figure 7. The project was documented through digital photography, and control was achieved by the use of a handheld GPS.

Originally, the project called for 2.7 km of force main to be examined. In the field, however, an additional .3 km was added to create a total of 3 km.

No cultural materials were found in any of the shovel tests or backhoe trenches. Three chert artifacts were found on the surface at and near Plant Site A. These specimens were examined in the field and not collected.

Figure 5. View of Proposed Plant Site A

Figure 6. View of Proposed Plant Site B

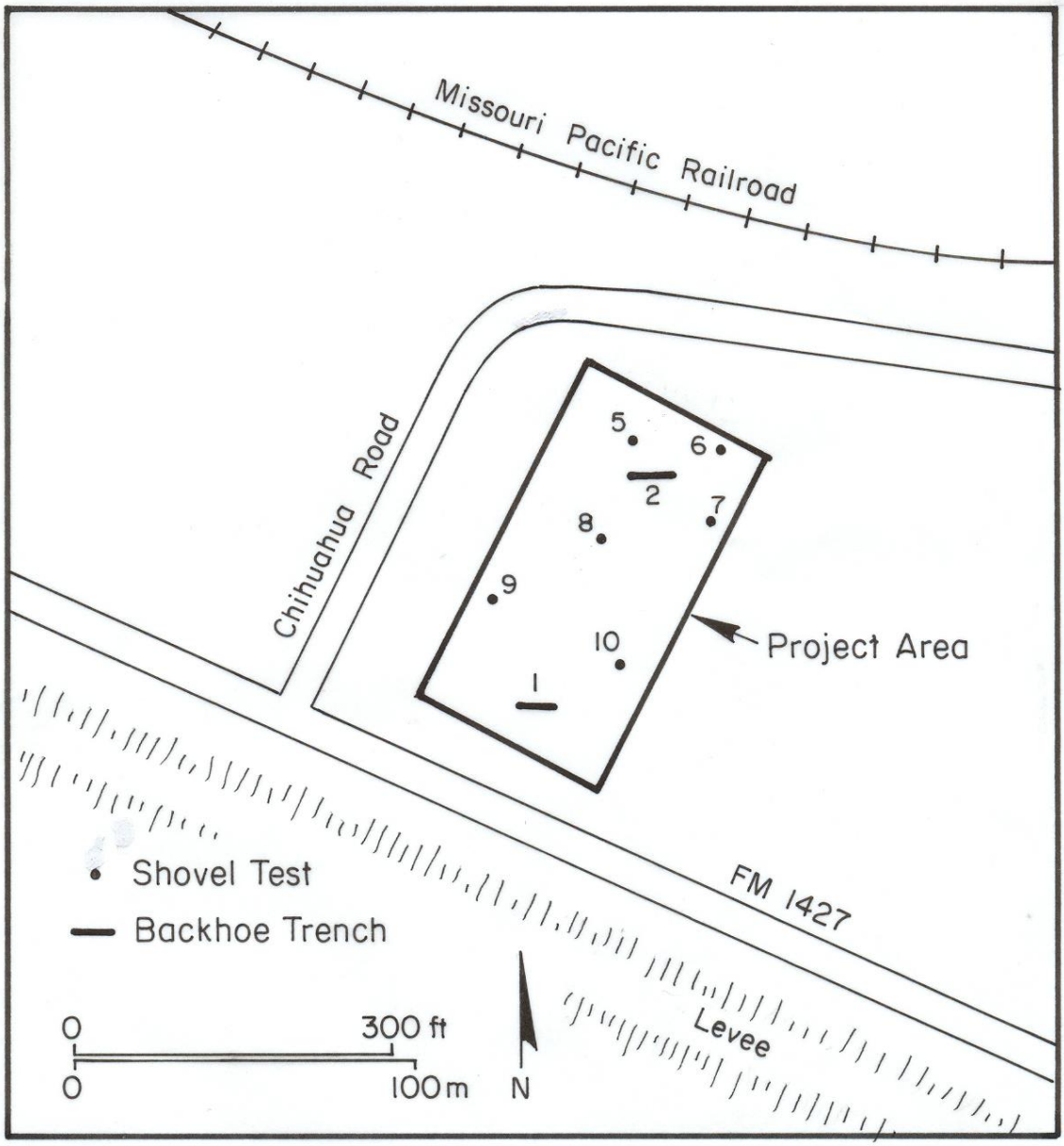

Figure 7. Shovel Test Locations at Plant Site A

RESULTS AND CONCLUSIONS

Pre-Field

A search of the site records at TARL revealed no previously recorded sites in the APE. Several professional surveys have been conducted in the area, and some of these recorded sites (see *Archaeological Background* above).

Field Survey

At the time of this survey, the majority of the proposed 12" force main was in very disturbed areas with little or no natural vegetation or pristine landforms present. Some of the areas had been cultivated (orchards) prior to street construction. Past and present farming activities as well as grading and filling for street construction have completely disturbed the original surface and near subsurface in these areas. Other observed forms of disturbance include drainage ditch construction, underground gas pipelines, phone utilities, a railroad, levee borrow pit, and numerous paved and unpaved entrances to local businesses. The soils in these areas consisted of a clay loam over a hard calcareous clay at depths between 20 and 40 cm.

The three lift station sites were found to be disturbed through cultivation, field roads, and buried gas and utility lines. The soils at lift stations "A" and "B" were clay loam over a hard calcareous clay at 40 cm, and the soils at Lift Station C was clay and gravel over clay at 30 cm.

Proposed Plant Site A is located in a plowed field north of Farm-to-Market Road 1427 (Figure 2) and east of Chihuahua Road. The soils in this area consisted of alluvial clay loam over clay at 40 cm. Three chert objects were found on the disturbed surface. They are a flake, a shattered quartzite cobble fragment, and a crude unifacial scraper made on a split cobble probably made from local chert. These specimens are referred to in this report as an Isolated Find, and their location is shown on a map in Appendix V. An interview with the landowner, Joe Metz, revealed that he has never found artifacts in this area. Mr. Metz is an artifact collector who regularly collects at a site in his orange grove on a hill to the north of Plant Site A. The Isolated Find may be related to this site.

Proposed Plant Site B is located in a plowed field that is currently surrounded by a levee that is now breached in several places for the passage of field roads. An interview with Mr. Metz revealed that the plant site had been used in the past as a borrow pit for the creation of the levees surrounding the field. The area was then used as the Edinburg Settling Basin for irrigation water. When it filled with silt it was abandoned. A new basin was constructed to the west and is in use today (Figure 2).

One cemetery that meets the age criterion for a historic cemetery is located near the project area (Figure 2). San Antonio Cemetery, however, is well outside the APE and will not be affected by construction as currently planned.

The current survey was performed according to the “Minimum Survey Standards for Project Areas of 200 Acres or Less” as defined by the Texas Historical Commission, Archeology Division.

RECOMMENDATIONS

No prehistoric archaeological sites were found to be within the APE, and the San Antonio Cemetery is well outside the APE (400 meters). Therefore, it is recommended that the City of Peñitas be allowed to proceed with construction as planned throughout the project area. If any prehistoric or historic sites within the APE are encountered during construction, all work must cease until the Texas Historical Commission, Archeology Division can assess the situation. Should construction plans change to include new areas that will affect undisturbed ground the THC must be notified as a return visit by a professional archaeologist may be required.

REFERENCES CITED

Biesaart, Lynne A., Wayne R. Roberson, and Lisa Clinton Spotts
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1980b *Digging Into South Texas Prehistory: A Guide for Amateur Archaeologists.* Corona Publishing Company, San Antonio.

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1981 *Soil Survey of Hidalgo County.* United States Department of Agriculture in cooperation with the Texas Agricultural Experiment Station. Government Printing Office, Washington, D.C.

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1988 *Texas Graveyards: A Cultural Legacy.* University of Texas Press. Austin.

Mercado-Allinger, Patricia A., Nancy A. Kenmotsu, and Timothy K. Perttula
1996 *Archeology in the Central and Southern Planning Region, Texas: A Planning Document.* Office of the State Archeologist, Special Report 35 and the Department of Antiquities Protection, Cultural Resource Management Report 7. Texas Historical Commission.

APPENDIX I

RESEARCH DESIGN

CITY OF PEÑITAS, TEXAS

Records Check

Brazos Valley Research Associates (BVRA) will contact the Texas Archeological Research Laboratory (TARL), the state repository for site records, to determine if previously recorded sites are present in the project area. In addition, a review of relevant archaeological reports was conducted. This action revealed that adjacent areas have been examined by professional archaeologists and sites have been found in the vicinity. These sites are mainly surface lithic scatters.

Project Description

The City of Peñitas, Texas in southwestern Hidalgo County proposes to construct a wastewater collection system, three lift stations, one grinder pump station, and a wastewater treatment facility in order to serve its customers who are currently using septic tanks. The gravity flow collection system will consist of approximately 109,00 linear feet of 8" PVC sewer line. This system will be installed with existing road rights-of-way and, in some cases, beneath the paved streets. The three lift stations will be small (20' x 20') and will be located on highway frontage adjacent to the existing road rights-of-way. Grinder Pump Station 1 will be located within the existing road right-of-way. The proposed wastewater treatment plant site will be constructed on an 8.7-acre tract of land owned by the city. The three lift stations with a 12" force main are proposed to transfer the wastewater to a new 750,000 gallon per day wastewater treatment plant.

Removal of large trees within paths of pipelines will be avoided where possible by boring. Creek crossings will be encased, and creek bottoms and slopes restored to their original condition. It is anticipated that the new line will not adversely affect prime farmland, floodplains, and/or wetlands since the majority of the proposed line will follow along previously disturbed routes of the road right-of-way.

RESEARCH DESIGN (PAGE TWO)

Areas to Survey

The 8” collection system will pass through two colonias, *Dos Jardines* and *Colonia Martinez and King Ranch Phases 1-3.* These colonias are recent, having been constructed in the 1980s. Therefore, there are no historic structures present. The line will be placed in the existing rights-of-way (borrow ditch) and/or beneath the narrow paved streets. These areas have been disturbed through construction of the houses and streets, and utilities are present in the borrow ditches. In some areas, previous disturbance has resulted from agricultural practices in the form of citrus orchards. BVRA believes that there is little chance of encountering undisturbed prehistoric archaeological sites in the Area of Potential Effect (APE) in either of these colonias. Therefore, it is recommended that these areas be exempted from survey.

The 8” collection system will also be constructed along Farm-to-Market Road 1427 and within the city of Peñitas. These areas have also been disturbed. Therefore, it is recommended that these areas be exempted from survey.

Much of the 12” force main is already in place. The only areas of proposed force main are north of United States Highway 83 and adjacent to the proposed wastewater treatment plant. It is recommended that these areas be examined through shovel testing and/or backhoe trenching as needed.

The three lift stations will affect undisturbed ground. Even though they are small in size, it is recommended that they be examined through shovel testing and/or backhoe trenching as needed.

The proposed wastewater treatment plant will affect undisturbed ground in deep alluvial soils. It is recommended that it be examined through backhoe trenching.

The proposed grinder pump station is in an already disturbed area. Therefore, no survey is recommended.

Site Types

Based on previous work in the area, prehistoric archaeological sites are known to occur in a variety of settings. Habitation sites are mostly commonly found on the lower terraces adjacent to streams, while lithic quarries have been recorded in all settings where chert cobbles were available in prehistoric times. Lithic scatters and hearths are found on terraces and uplands. Buried sites may be found in the floodplains of major streams. Historic archaeological sites are not always tied directly to water and may be found in areas between streams.

RESEARCH DESIGN (PAGE THREE)

Survey Methods

The Principal Investigator for this project is William E. Moore, and the Project Archaeologist is Edward P. Baxter. No fieldwork will commence until an Antiquities Permit has been issued for this project. The entire project area was assessed by the Principal Investigator accompanied by George E. Lazaro, P.E. of J. F. Fontaine and Associates, Inc., the engineering firm associated with this project. The following methods are based on this "windshield survey" and a review of previous work in the area.

All exposed ground surfaces will be carefully inspected for cultural materials and features. Normally only diagnostic artifacts will be collected from the surface of a site. Quarry or lithic procurement sites will be treated differently. In these areas, a controlled collection of cultural materials may be made to identify the kinds of raw materials present and the ways in which these materials were used.

Non-diagnostic artifacts observed in the back dirt of the backhoe trench or trenches will not be collected. Selected shovels full of earth will be screened at each backhoe trench location. Since only a small portion of the wastewater treatment facility will contain subsurface disturbance it is estimated that no more than two trenches will be adequate to evaluate the APE in this area.

Shovel tests will be excavated at the discretion of the Project Archaeologist and will be dug in arbitrary 10 cm levels. All excavated earth will be passed through ¼ inch hardware cloth. Artifacts found in shovel tests will be collected and analyzed in the laboratory prior to curation. Shovel tests will be dug to the underlying clay or rocky subsoil (caliche) when possible and to depths of about 100 cm when clay or rock is not reached. If clay or rock can't be reached through shovel testing, backhoe trenches will be excavated where appropriate. When a site is found, an attempt to determine its boundaries through shovel testing and surface inspection will be made.

The project will be documented through a shovel test log, backhoe trench log, field notes, and digital photography. A map will be drafted that depicts the location of all areas surveyed, including shovel tests and backhoe trenches.

All archaeological sites will be located on the landscape using a hand-held GPS, and each site will be plotted on the proper USGS topographic quadrangle. Field numbers will be assigned to all sites until an official trinomial can be obtained TARL.

RESEARCH DESIGN (PAGE FOUR)

The number of shovel tests and/or backhoe trenches will meet or exceed that number requested in the Minimum Survey Standards for projects of 200 acres or less.

Artifact Analysis and Curation

All significant artifacts will be collected for analysis in the laboratory. They will be described and measured. Those specimens deemed worthy of permanent curation will be processed and turned over to TARL. All artifacts not viewed as containing research potential for future researchers will be discarded following a written document authorizing this action from the Texas Historical Commission (THC), Archeology Division. Artifacts found on private property will be offered to the landowner.

Report Preparation

A report documenting the findings of this project will be written by the Principal Investigator and Project Archaeologist. This report will follow the guidelines established by the Council of Texas Archeologists and THC. Two draft copies will be submitted to the THC for review. Upon acceptance of this report, 20 copies will be submitted to the THC for distribution to regional libraries.

APPENDIX II

PREVIOUS INVESTIGATIONS IN VICINITY OF PROJECT AREA

Day, D. William, Jane-Laurens Day, and Elton R. Prewitt

1981 *Cultural Resources and Assessments in Portions of Hidalgo and Willacy Counties, Texas.* Prewitt & Associates, Inc., Report of Investigations 15.

This project recorded sites 41HG28-41HG42 and 41HG81-41HG98.

Etchieson, Gerald Meeks, and Douglas K. Boyd

1982 *Cultural Resources Survey for Proposed Rehabilitation and a New Drain for Hidalgo County Irrigation District Number 16.* Bureau of Reclamation, Southwest Region, USDI, Amarillo.

This project recorded sites 41HG99-41HG113.

Godwin, Molly G.

2005 *A Cultural Resources Survey of the Valero Logistics LP, Penitas to Edinburg Extension, Hidalgo County, Texas.* Antiquities and Consulting, Heritage Management Series Survey Report 41.

This project did not record any sites.

Harrington, Laverne

1986 Field Trip Report for the Willacy-Hidalgo Drainage Project conducted for the Federal Regulatory Commission.

This project recorded sites 41HG39, 41HG91, and 41HG96.

Rue, David J., John F. Doershuk, Heidi Fassler, Norman A. Haywood, Christopher A. Bergman, and John S. Jacobs

1992 *Phase I Cultural Resources Project on the Pemex-HPL 36-Inch Pipeline Project in Hidalgo County, Texas.* 3-D Environmental Project C7168-01.

This project recorded sites 41HG146-41HG15_.

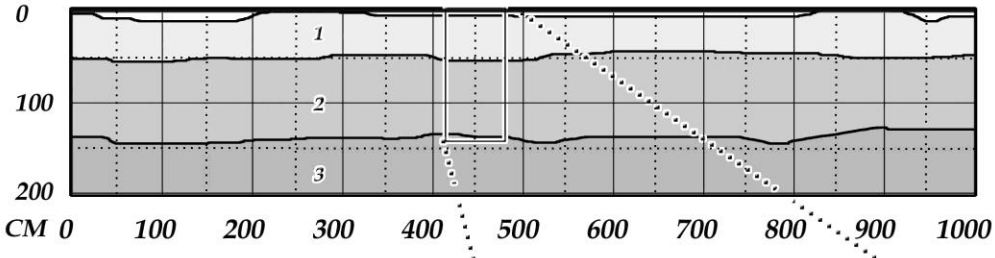
Appendix III
Shovel Test Log*

Shovel Test	Depth (cm)	Soils	Comments
1	40	Clay loam/Clay	Force main. From proposed plant site B to FM 1427.
2	40	Clay loam/Clay	Force main. From proposed plant site B to FM 1427.
3	30	Clay loam/Clay	Force main. From proposed plant site B to FM 1427.
4	40	Clay loam/Clay	Force main. From proposed plant site B to FM 1427.
5	40	Clay loam/Clay	Proposed plant site A. Plowed field.
6	40	Clay loam/Clay	Proposed plant site A. Plowed field.
7	40	Clay loam/Clay	Proposed plant site A. Plowed field.
8	40	Clay loam/Clay	Proposed plant site A. Plowed field.
9	40	Clay loam/Clay	Proposed plant site A. Plowed field.
10	40	Clay loam/Clay	Proposed plant site A. Plowed field.
11	20	Clay loam/Clay	Force main along FM1427 by levee.
12	20	Clay loam/Clay	Force main along FM1427 by levee.
13	30	Clay loam/Clay	Force main along FM1427 by levee.
14	30	Clay loam/Clay	Lift Station C disturbed by gas line.
15	30	Clay loam/Clay	Force main along Tom Gill Road. Disturbed by ditch and two gas lines.
16	30	Clay loam/Clay	Force main along Tom Gill Road. Disturbed by ditch and two gas lines.
17	20	Clay loam/Clay	Force main along Tom Gill Road. Disturbed by ditch and two gas lines.
18	20	Clay loam/Clay	Force main along Highway 83. Disturbed by ditch and phone utilities.
19	20	Clay loam/Clay	Force main along Highway 83. Disturbed by ditch and phone utilities.
20	20	Clay loam/Clay	Force main along Highway 83. Disturbed by ditch and phone utilities.
21	40	Clay loam/Clay	Lift Station A. Disturbed by street construction.
22	30	Fill/Clay loam/Clay	Force main. East side of new street. Disturbed by construction.
23	30	Fill/Clay loam/Clay	Force main. East side of new street. Disturbed by construction.
24	30	Fill/Clay loam/Clay	Force Main. South side of Diamond Avenue, Disturbed by street consturction.
25	30	Fill/Clay loam/Clay	Force Main. South side of Diamond Avenue, Disturbed by street consturction.
26	30	Fill/Clay loam/Clay	Force Main. South side of Diamond Avenue, Disturbed by street consturction.
27	40	Clay loam/Clay	Lift Station B, Flat lot, disturbed by small road.

*All Tests Were Negative

APPENDIX IV: BACKHOE TRENCH PROFILES

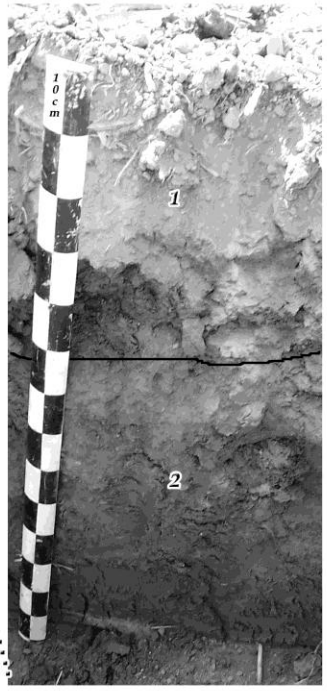
BACKHOE TRENCH 1
SOUTH WALL PROFILE



Zone 1: Plow zone. Dry clay loam, 10YR7/3.

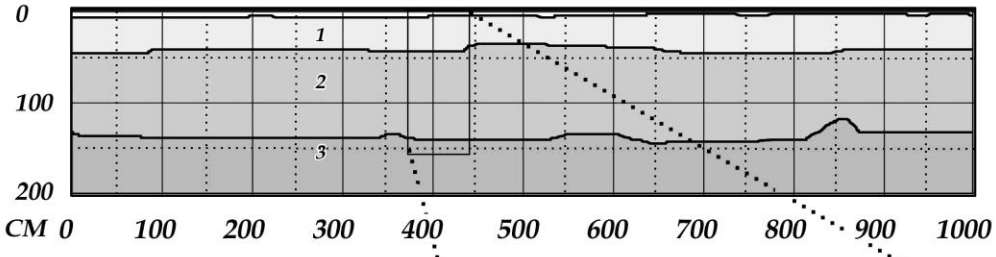
Zone 2: Hard packed moist clay, 10YR4/4.

Zone 3: Unexcavated.



Photograph taken from an oblique angle causing vertical perspective distortion.

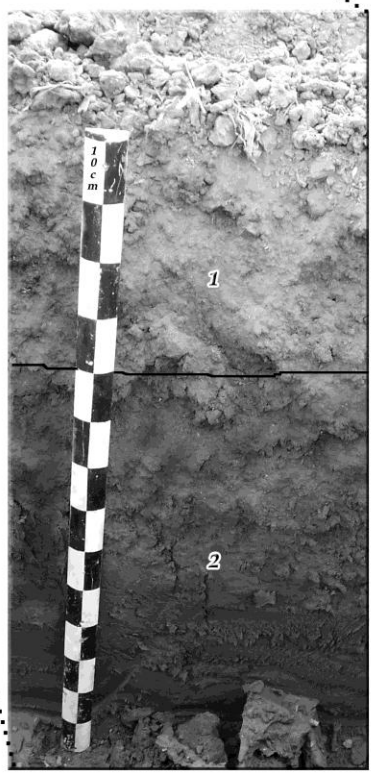
BACKHOE TRENCH 2
SOUTH WALL PROFILE



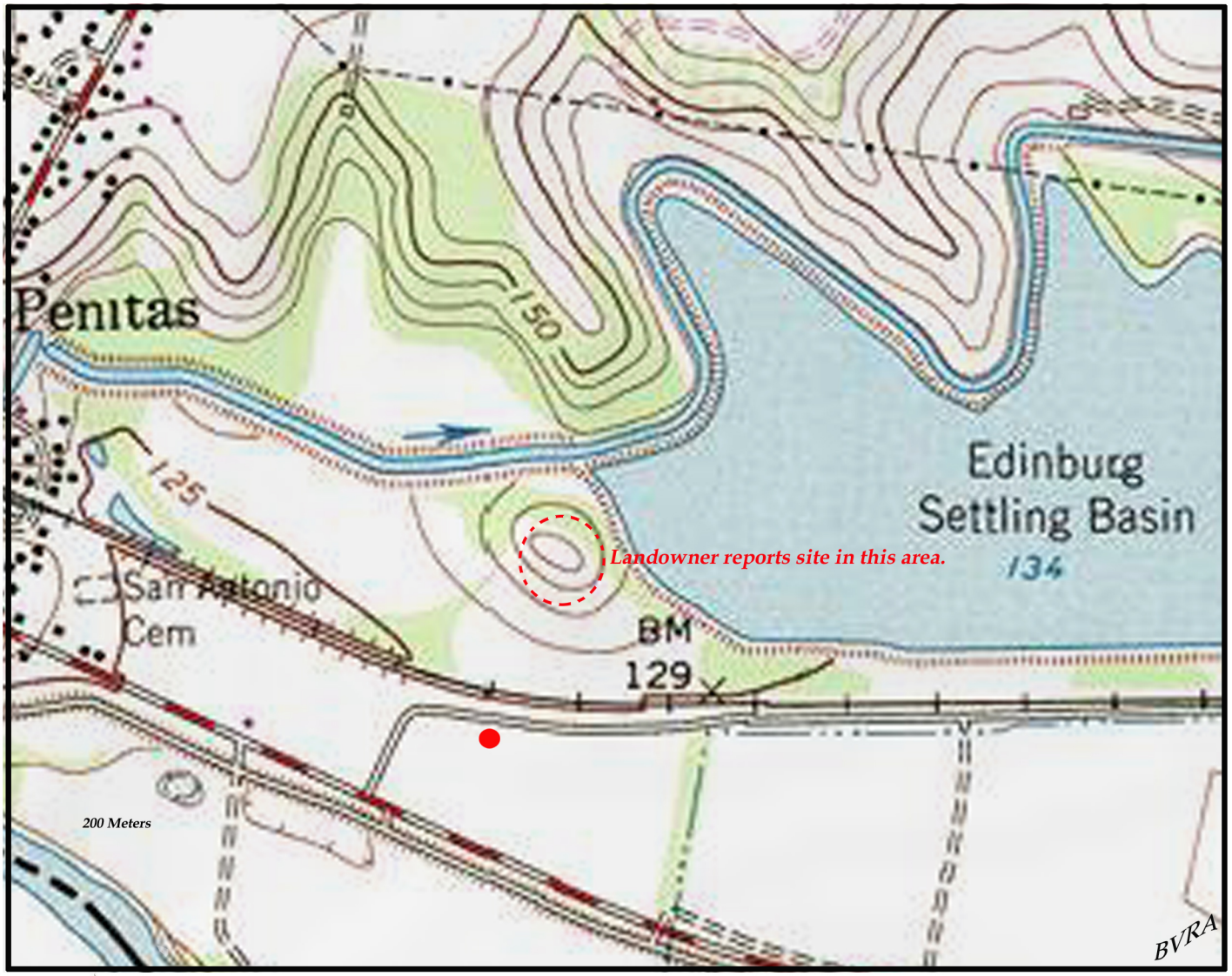
Zone 1: Plow zone. Dry clay loam, 10YR7/3.

Zone 2: Hard packed moist clay, 10YR4/4.

Zone 3: Unexcavated.



Photograph taken from an oblique angle causing vertical perspective distortion.



N
W E
S

Isolated Find

USGS La Joya, Texas
Quadrangle 2698-123

Appendix V. Isolated Find Location