ARCHAEOLOGICAL INVESTIGATIONS IN ZAVALA AND DIMMIT COUNTIES, TEXAS: THE INTERNORTH PIPELINE PROJECT

Eric C. Gibson

Center for Archaeological Research
The University of Texas at San Antonio
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Forward. For those with a detailed interest in South Texas Archaeology (and I assume if you are reading this that would be you), this is the "lost" manuscript of the Lost Peacock site (41ZV263). While not quite biblical, 34 years is a long time to be lost in the desert. As discussed by Tom Hester in Volume 27 of La Tierra in 2000, all copies of the manuscript were thought to have disappeared. The scan presented here is from a copy of the manuscript originally sent to Mack Pryor, the landowner of the site. Mack, with the assistance of Ms. Elaine Bretschneider, contacted the Center for Archaeological Research this year. It turns out that they did not know that the manuscript was lost, and more importantly they were willing to make their copy, which was most certainly the only copy, available. Thanks Mack for making this document available to the Center and to the archaeological community. While we can't do much for that Peacock, we promise not to misplace the manuscript (again).

Raymond Mauldin
CAR-UTSA
June, 2015

ABSTRACT

From March to June 1981, archaeologists of the Center for Archaeological Research, The University of Texas at San Antonio, under contract with Internorth, Inc., of Omaha, Nebraska, completed archaeological investigations of proposed localities for gas pipelines in Zavala and Dimmit Counties, Texas. The reconnaissance phase identified 13 archaeological sites dating from the Early Archaic through the Late Prehistoric periods in the project area. Two of these sites were recommended for further subsurface testing. One site, 41 ZV 263, revealed evidence of many stratified components and further test excavations were conducted. These subsequent investigations confirmed that 41 ZV 263, the Lost Peacock site, represents one of the oldest stratified sites yet excavated in south Texas. A decision was made by Internorth, Inc., based on these findings, to preserve the site by rerouting the pipeline corridor and thus avoiding it.

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ACKNOWLEDGMENTS

Several individuals from Internorth, Inc. contributed to the success of the project. In the Omaha office, Mr. Dennis Lessig was instrumental in handling liaison affairs and always responded quickly to our inquiries. In Uvalde, Texas, Mr. Laverne Fuller and Mr. Jim Ralston provided us with copies of their project maps. I would especially like to thank Mr. Fuller for his help in obtaining land access to the various ranches in the project area.

Mr. C. M. Pryor, of San Antonio, Texas, who owns the ranch where the Lost Peacock Site is located, was very cooperative with archaeological field crews and also very interested in our research. I am very grateful to Mr. Pryor for his hospitality.

As in most archaeological projects, the successs of this project is largely due to the skillful assistance of the staff and crew. Ken Brown did an excellent job of assessing the gas plant sites during the reconnaissance phase. Kevin Jolly was a very able assistant during the field reconnaissance. Steve Black and Dan Potter assisted in the test excavations at 41 ZV 260.

During the test excavations at the Lost Peacock site, I was fortunate to have a great crew and I thank them all: Field Assistant, Ron Holan and the crew of Elizabeth Bradley Day, Elizabeth Frkuska, Patricia Wallace, Penn Jenkins, Augustine Frkuska, Sylvia Bento, Maggie Mehrtens, and Elizabeth Gibson.

I also thank Dr. Thomas R. Hester, Director of the Center for Archaeological Research, for his valuable advice concerning the regional archaeology and Jack Eaton, Associate Director of the Center, for his encouragement and counsel on project operations.

Finally, Kathy Roemer should be recognized for her usual excellent renderings of all of the illustrations in this report.

INTRODUCTION

During the months of March to June 1981, archaeologists from the Center for Archaeological Research (CAR), The University of Texas at San Antonio (UTSA), conducted archaeological investigations in Zavala and Dimmit Counties, Texas (Fig. 1). The field work was conducted under contract with Internorth, Inc., of Omaha, Nebraska. The Internorth project area is the region of a proposed series of natural gas pipeline corridors, with two associated gas plant facilities (Figs. 2, 4). An intensive archaeological reconnaissance of 69 miles of proposed pipeline corridors was conducted. Field work was accomplished by CAR archaeologists under the direction of the author. Laboratory analysis, background research, and interpretation of the results were completed by Gibson. Dr. Thomas R. Hester, Director of CAR, and Jack D. Eaton, Associate Director, provided overall supervision of the project.

The investigations presented in this report were carried out in order to assess and document the archaeological sites in the project area because they may soon be altered by the proposed pipeline construction activities (Figs. 1-5). The investigations began with a trip to Austin to check for any known sites in the project area on file at the Texas Archeological Research Laboratory. Only one such site was found, 41 ZV 163 (Fig. 4). However, the approximate location documented for this site places it outside of the Internorth Pipeline Project area.

During the field reconnaissance 13 archaeological sites were discovered. These sites showed evidence of occupations dating from the Early Archaic through the Late Prehistoric periods. All of these sites were collected of diagnostic artifacts, mapped, and recorded on standard site forms (see Methodology, p. 18). Upon completion of the field reconnaissance, two sites, 41 ZV 260 and 41 ZV 263, were recommended for further test excavations. The results of these excavations showed no significant buried cultural remains at 41 ZV 260. However, 41 ZV 263 was determined to be a multicomponent, stratified site with cultural associations dating from approximately the Middle Archaic through the Late Prehistoric periods. Furthermore, the cultural debris from these small test excavations indicated that some of these occupations may have been of long term intensity, suggesting the site possibly functioned as a residential base camp during some of these periods.

Subsequent, more intensive, test excavations in May showed that the site did function as a residential base camp throughout the prehistoric sequence. However, the time depth indicated by the discovery of a *Lerma*(?) projectile point in Test Pit 1 was extended back to the Paleo-Indian period.

The decision was made by CAR, Internorth, the Office of the Texas State Historic Preservation Officer, and the National Advisory Council (Denver) to conduct salvage excavations at 41 ZV 263 in the proposed pipeline corridors. These investigations would also further assess the nature and degree of prehistoric occupations in site areas that had not been previously investigated (Units A and B, Fig. 5). However, 41 ZV 263 also showed evidence of intensive prehistoric occupations in this area. Internorth reevaluated the options involved in constructing the pipeline through site 41 ZV 263 and decided to avoid the site. The author conducted a reconnaissance of an alternate proposed route to avoid 41 ZV 263. During this subsequent reconnaissance one thin surface site,

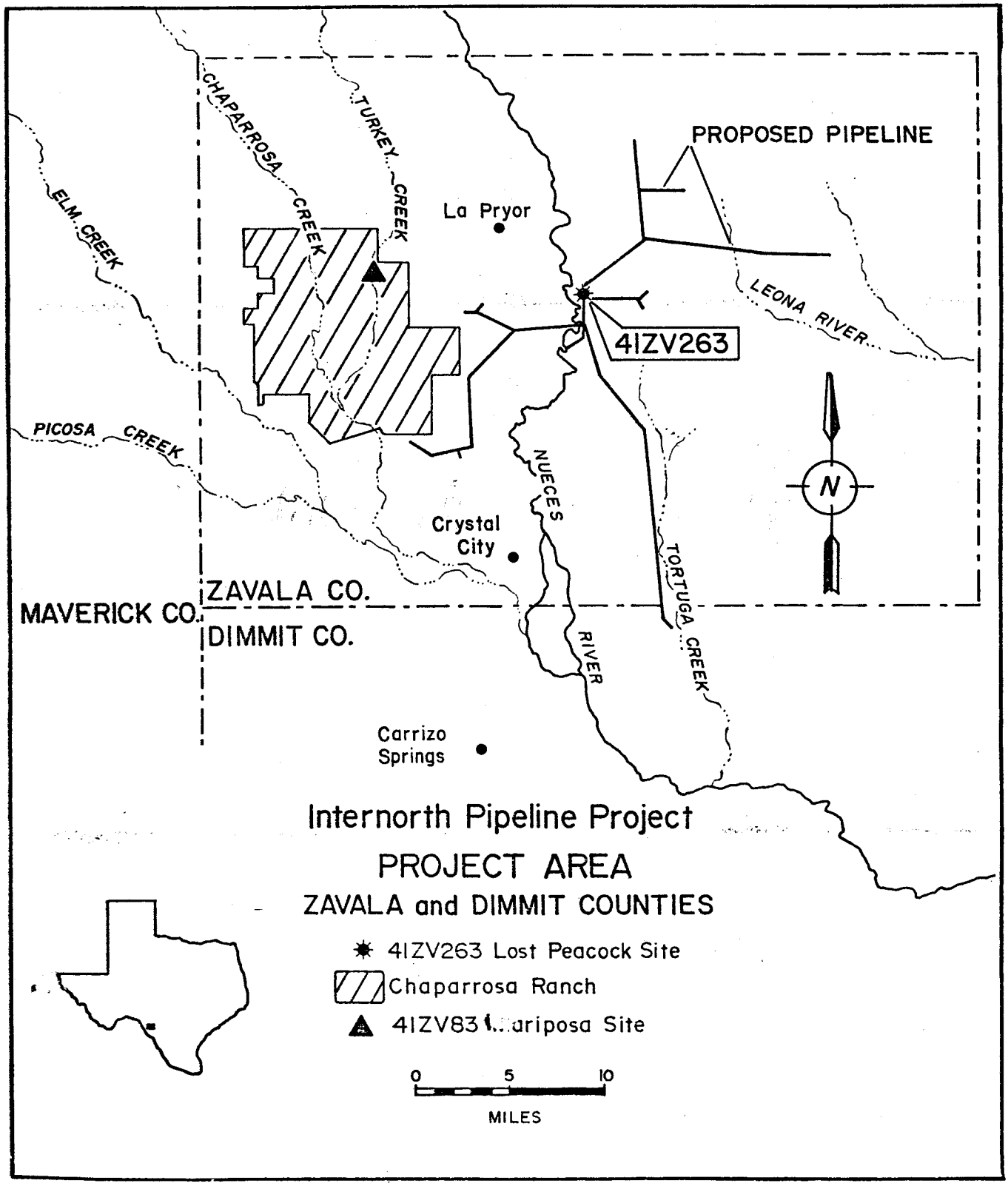

Figure 1. *Location of Internorth Pipeline Project, Chaparrosa Ranch, and Sites 41 ZV 263 and 41 ZV 83.*

Figure 2. Location of Sites 41 ZV 196, 41 ZV 261, and 41 ZV 262 in Proposed Pipeline and Station Corridors.

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Figure 3. *Location of Sites 41 ZV 254 to 41 ZV 260 in Proposed Pipeline Corridors.*

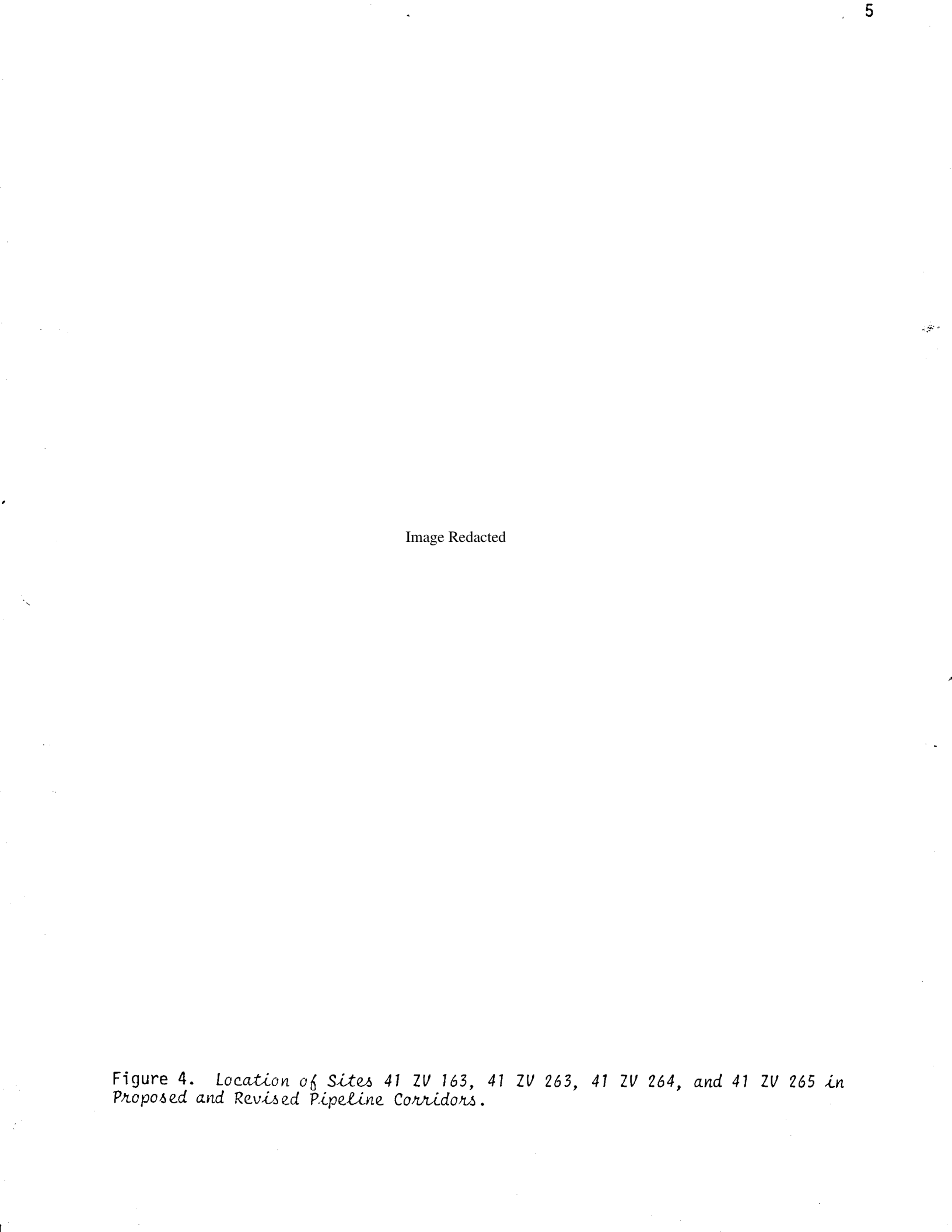
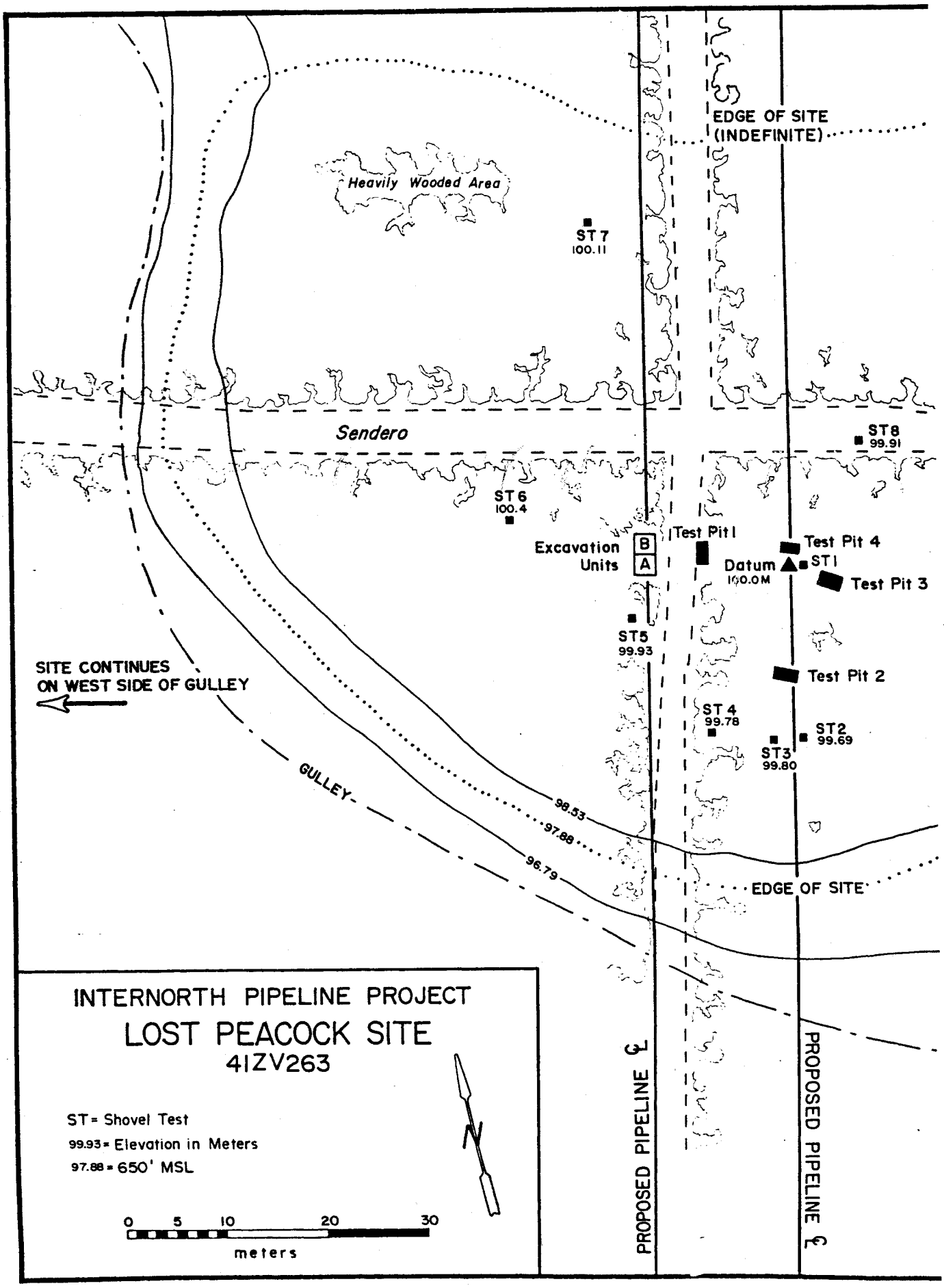


Figure 4. *Location of Sites 41 ZV 163, 41 ZV 263, 41 ZV 264, and 41 ZV 265 in Proposed and Revised Pipeline Corridors.*


EDGE OF SITE
(INDEFINITE)
Heavily Wooded Area
ST 7
100.11
Sendero
ST8
99.91
ST 6
100.4
Excavation
Units
B
A
Test Pit 1
Test Pit 4
Datum
100.0M
ST 1
Test Pit 3
ST5
99.93
SITE CONTINUES
ON WEST SIDE OF GULLEY
Test Pit 2
ST 4
99.78
ST2
99.69
ST3
99.80
GULLEY
98.53
97.88
96.79
EDGE OF SITE
INTERNORTH PIPELINE PROJECT
LOST PEACOCK SITE
41ZV263
ST = Shovel Test
99.93 = Elevation in Meters
97.88 = 650' MSL
N
0 5 10 20 30
meters
PROPOSED PIPELINE ℄
PROPOSED PIPELINE ℄

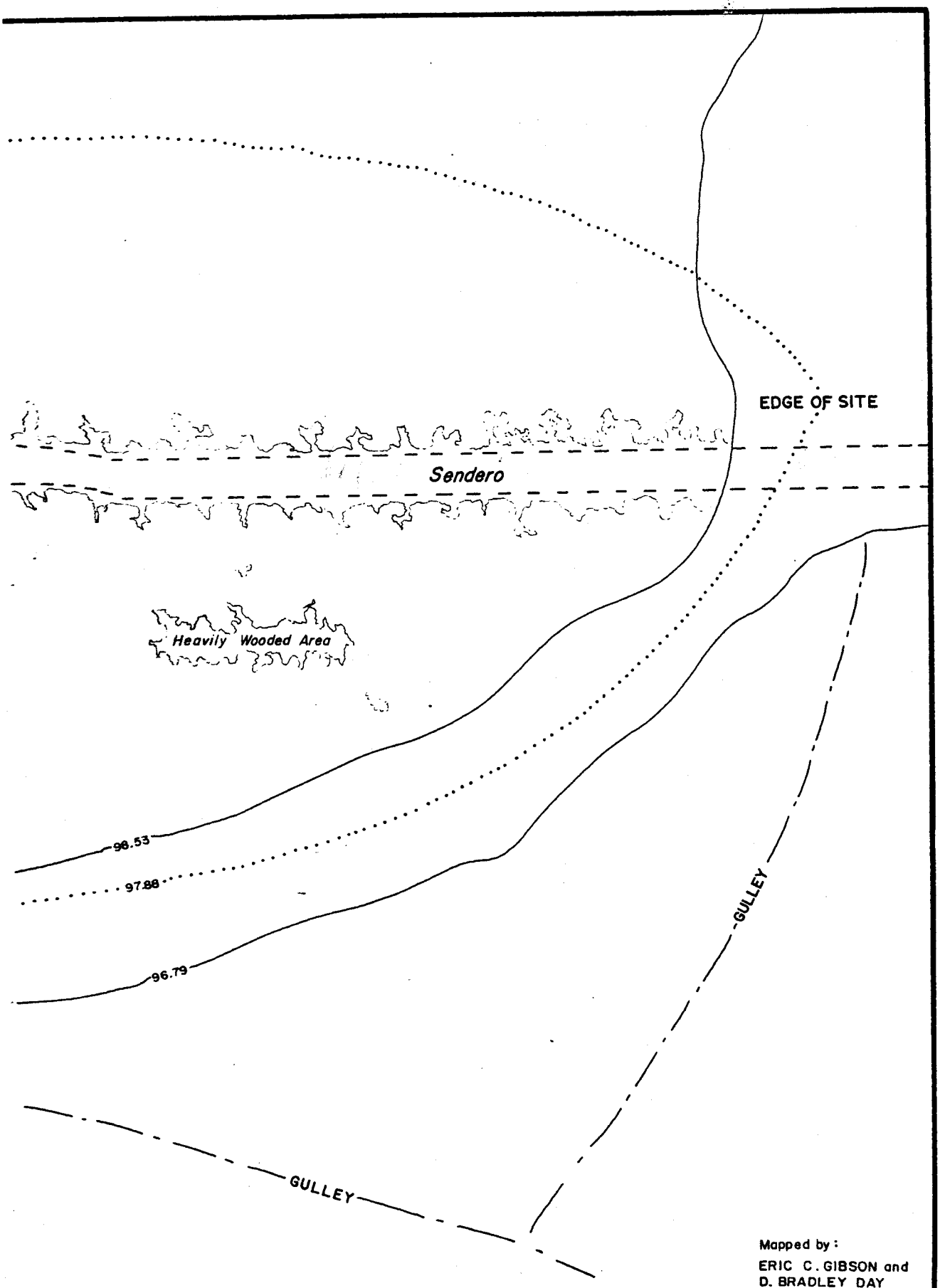

EDGE OF SITE
Sendero
Heavily Wooded Area
98.53
97.88
96.79
GULLEY
GULLEY
Mapped by:
ERIC C. GIBSON and
D. BRADLEY DAY
Drafted by:
KATHY ROEMER 1981

Figure 5. *Topographic Map of the Lost Peacock Site, 41 ZV 263.*

41 ZV 265, was found. Site 41 ZV 265 probably functioned as a field camp that was occupied briefly, it was severely eroded and the pipeline would have had minimal impact on it. No further work was recommended for this site. Furthermore, 41 ZV 263, a very important site was preserved through the efforts of Internorth, Inc. and the Center for Archaeological Research.

This report is organized into six sections. Section one presents the present environmental context of the project area, including the geological, climatic, and vegetational patterns. Section two provides a summary of the present understanding of the prehistoric sequence. Certain problems in interpretation of this sequence are also presented. Section three reviews previous archaeological research in the study area. Section four summarizes the results of the Internorth Project reconnaissance investigations. Section five describes the test excavations at the Lost Peacock site, 41 ZV 263. Section six summarizes the results of the Lost Peacock site excavations and presents recommendations for future research at the site.

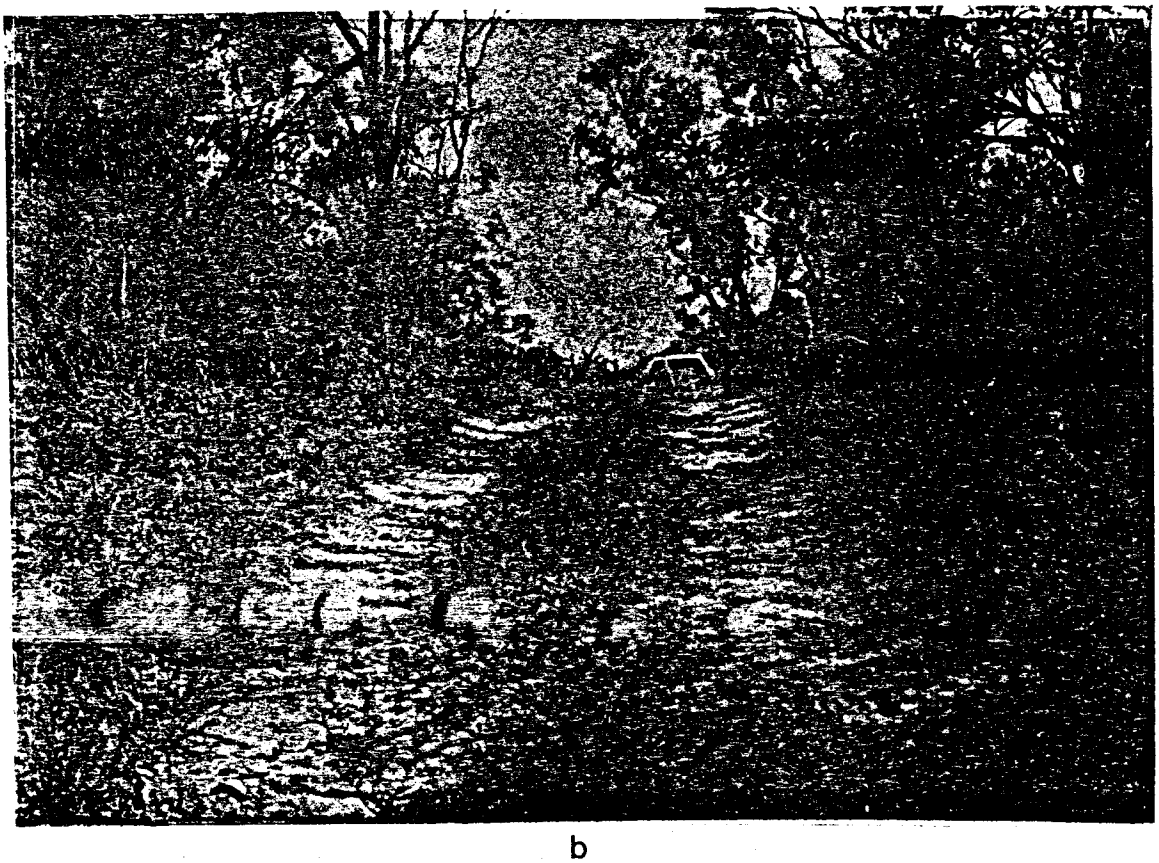
ENVIRONMENTAL SETTING

The environmental characteristics of the south Texas counties of Zavala and Dimmit are summarized in this section. The project area is situated in the northern periphery of the Rio Grande Plain, a subdivision of the West Coastal Plain (Inglis 1964; Thornbury 1965; Hester 1977). North of the Rio Grande Plain is the Edwards Plateau of central Texas and to the south lies the Chihuahuan Desert of northeastern Mexico. The Nueces River and its tributaties comprise the major drainage system which dissects the rolling hills of the project area. Elevations range from approximately 600 to 1000 ft above mean sea level.

The earliest geologic deposits in the project vicinity are loosely consolidated sediments of the Cretaceous Age (ca. 75 million years old). Most of the bedrock in the project area is classed as limestone and sandstone ranging in age from the Cretaceous to the recent period (Shimer 1972:7). Quartz, flint, and chert nodules are found as inclusions in the limestone beds. Also, these nodules are often found in outcrops of siliceous gravels that have eroded from the parent limestone material along some slopes. The soils in the project area are moderately permeable, gravelly, dark grayish or reddish brown, sandy loams.

Zavala and Dimmit Counties, like most of the Rio Grande Plain, are included within the Tamaulipan Biotic Province (Blair 1950). This region has a mild, semiarid climate. Mean annual precipitation is less than 30 inches. The most important rainfall months are April, May, June, September, and October (Montgomery 1978:5). However, the rainfall pattern is best described as being erratic, often with periods of droughts, thus requiring irrigation based agriculture. This climatic pattern has fostered the growth of a vegetational regime termed grassland by Smith *et al.* (1940:14), dominated by thorny brush encroachments. The predominant grasses in the area are buffalo grass and various grama species. Most large trees, including elm, live oak and cottonwood, occur along the tributary stream courses and on the Nueces River floodplain. Stands of mesquite and scrub oak are scattered throughout the project zone. The densest of these stands is located in the vicinity of 41 ZV 263, the Lost Peacock site (Fig. 6).

a



b

Figure 6. *Photographs of the Lost Peacock Site, 41 ZV 263.* a, initiation of excavation activities; b, site view facing northeast.

The faunal population of the project area is limited by the availability of water. Within this area there are many permanent water sources, the largest being the Nueces River, as well as many ranch tanks. Fauna observed in the area during field work included numerous white-tailed deer, jack rabbit, cottontail rabbit, turkey, quail, hawk, several species of lizard, western diamondback rattlesnake, and one peacock. Within the Tamaulipan Biotic Province, Blair (1950) identified 61 species of mammals, 36 species of snakes, 19 lizard species, and a few species of turtles and frogs.

Historical records and verbal accounts from local residents show that the last 150 years have greatly altered the environment of the south Texas region, as Inglis (1964) and Hester (1980) have observed.

The widespread mesquite forests which infest the terrain today are a relatively recent occurrence reflecting alterations caused by farming and ranching since the 19th century. Several cultural and climatic factors have caused these changes. Overgrazing of commercial livestock led to the increased dispersal of mesquite seeds and short-term climatic fluctuations and the suppression of grass fires intensified the proliferation of mesquite forests.

Early Spanish accounts describe a country of gently rolling grassy hills with mesquite located primarily on upland gravel areas and in scattered thickets along stream courses. These records also show that the major rivers, creeks, and many smaller tributaries flowed year round. Surface water was more abundant historically in south Texas compared to present conditions (Inglis 1964). Water was carried in many of the larger creeks as recently as the late 1930s (Hester 1980:34). Overgrazing destroyed the watershed by causing muddy run-offs that clogged the springs which fed the creeks. This problem was further compounded by the lowering of the water table in many regions by deep-well irrigation farming. All of these cultural factors transformed the creeks into dry gullies that today only carry water after heavy rains (*ibid.*).

THE CHRONOLOGY OF PREHISTORIC OCCUPATION

Our current understanding of the succession of prehistoric peoples and their cultures in south Texas is summarized in this section. The archaeological record is the source of information for these prehistoric cultural periods. The archaeological record consists of data amassed from survey and excavation and is based primarily on the durable remains of human cultures (i.e., stone tools and ceramics). Perishable or less durable artifacts such as wood tools, leather and basketry are rarely preserved, and have only been reported from dry caves and rockshelters in adjacent lower Pecos Texas.

In the following discussion all dates for cultural-historical periods are approximate. The term "cultural historical period" in this report refers to a range of behavioral and cultural activities and their observed traits within a broad geographic and temporal setting (Gibson 1980a, 1981).

Recent excavations at Meadowcroft Rockshelter in western Pennsylvania show that North America has been inhabited for at least 15,000 years (Adovasio *et al.* 1978, 1980). Meadowcroft is one of the rare North American sites which contains stratified and dated evidence of artifacts in a precise context earlier than

13,000 years ago (Adovasio *et al.* 1978). During the long time span that North America has been inhabited by human populations, life-style patterns and their associated material culture changed dramatically. These changes can be divided into five sequential periods that outline the development of prehistoric cultures for most of south and west Texas (Hester 1980; Gibson 1981; Table 1).

TABLE 1. GENERAL CHRONOLOGY FOR SOUTHERN TEXAS

Cultural-Historical Period	Dates
Historic	After A.D. 1530
Late Prehistoric	A.D. 1000-1530
Archaic	3500 B.C.-A.D. 1000
Pre-Archaic	6000-3500 B.C.
Paleo-Indian	13,000-6000 B.C.

Paleo-Indian (13,000 to 6000 B.C.)

Paleo-Indian is the term most archaeologists use when referring to the earliest human inhabitants of North America. Other terms, such as "Early Man" or "Paleo-American," have equivalent meanings but are used less frequently (Jennings 1974). The Paleo-Indian period is the least understood cultural manifestation in the New World. Some archaeological data suggest that people were in North America as early as 30,000 years ago (Krieger 1964; Gagliano 1967). Also an initial occupation date of 40,000 years ago has been claimed (Bada and Helfman 1975).

From the Tlapacoya site near Mexico City some crudely flaked stones have been excavated in association with extinct fauna and dated to between 24,000 and 22,000 years ago (Mirambell 1978). However, all of these data remain controversial. Conclusive evidence places the peopling of the New World within the terminal stages of the Wisconsin Glaciation, ca. 13,000 to 11,000 B.C. (Jennings 1974; Adovasio *et al.* 1978, 1980).

At Meadowcroft a lancelike projectile point was found in a level dating to about 10,000 B.C. and is similar to projectile points recovered from Fort Rock Cave in eastern Oregon dated to ca. 11,300 B.C. (Bedwell 1973). These projectile points may be among the earliest indicators of human occupation in North America. However, such finds are rare and the majority of the reliable dates for Paleo-Indian occupation of North America fall between 10,500 B.C. and 6000 B.C.

During the maximum advance of the Wisconsin Glaciation, the ice extended as far south as the present location of St. Louis, Missouri. Paleoenvironmental data suggest the land in southern Texas was primarily piñon pine parkland during this time (Oldfield and Schoenwetter 1975). Two major cultural traditions have been recognized by Hester (1976:5) in Texas and northeastern Mexico at ca. 8000 to 9000 B.C. These traditions may indicate adaptation to local environments and subsistence resources. The first tradition that Hester has identified is the Plains-related Tradition which includes all of the Clovis and Folsom sites

containing characteristic fluted points (*ibid.*). Hester has also discerned the Small Projectile Point Tradition which seems to emerge from northeastern Mexico during this interval (ca. 8000-9000 B.C.). Based on the work of Epstein (1980), evidence from the La Calsada site in Nuevo Leon indicates this tradition began as early as 8600 B.C. (*ibid.*). The origins of this Small Project Point Tradition remain obscure but the data has been interpreted by Epstein (1980:81), to suggest that the prehistoric cultures of northeastern Mexico were derived from sources different than those of Texas.

One projectile point that is characteristic of the Paleo-Indian period in Nuevo Leon is the *Lerma* projectile point. This type of point was recovered during our field work from one of the lower levels of the Lost Peacock site (41 ZV 263). Also, this type of point was found in association with mammoth bones at Santa Isabel Iztapan in the valley of Mexico (Wormington 1957).

Epstein (1980:86-87) has described the *Lerma* projectile point type:

> The term "Lerma" is generally applied to a lanceolate biface that is pointed at both ends (MacNeish 1958:62, Fig. 23; Suhm, Krieger and Jelks 1954:440, Pl. 99). They have a fair range in length and width, depending upon where found; but the usual range is between 5.5 to 8.0 cm in length, and they average around 5.6 to 6.5 cm in width. The diagnostic feature of the *Lerma* point is its double pointedness, although this feature is highly variable, ranging from a true point to one end that is tapered and slightly rounded.

Many researchers agree that the *Lerma* point is a Paleo-Indian type, although there is also evidence that it persisted until Middle Archaic times (*ibid.*:87).

During the Paleo-Indian period in Texas and the western plains, megafauna such as mammoth, giant bison, camel, and horse were hunted. In North American prehistory much emphasis has been placed on the "Big-Game Hunters" of the Paleo-Indian period, even though many sites such as Meadowcroft, Lindenmeier, and La Calsada have yielded evidence that smaller game and wild plants were also exploited (Jennings 1974; Adovasio *et al.* 1980; Epstein 1980). Evidence from Nuevo Leon suggests that bison appeared not to be present in this region during this period (Epstein 1980:86).

Plains-related Paleo-Indian occupation of south Texas is indicated by surface finds of *Clovis*, *Folsom*, *Plainview*, *Golondrina*, and *Meserve* projectile points throughout the region (Hester 1976, 1977, 1980). Small Projectile Point or Nuevo Leon-related Paleo-Indian occupation in the area is indicated by scattered, rare surface finds of *Lerma* points.

In summary, these lanceolate projectile points (fluted and non-fluted) of various sizes and fine workmanship are diagnostic artifacts typical of Paleo-Indian assemblages. Other flaked stone artifacts, such as steeply-retouched end scrapers, are often found on Paleo-Indian sites. Human groups of this period probably lived in small nomadic bands and subsisted by hunting large and small game and by gathering edible plants. In general, this period is not well understood throughout North America, particularly in south Texas. Further evidence of subsistence and settlement patterns which reflect local adaptive strategies are required in addition to documentation of additional stratified, well-dated sites.

Pre-Archaic (6000 to 3500 B.C.)

Sollberger and Hester (1972) initially described the Pre-Archaic period which was further characterized as a significant cultural historical period across central and south central Texas by Hester (1976, 1980). As a cultural-historical construct it helps divide the transitional period between the Late Paleo-Indian and Early Archaic occupations of the region and refine our understanding of it. Alternatively, other researchers have questioned the utility of this term "Pre-Archaic" and prefer to divide the Archaic into three sub-periods, Early, Middle, and Late with the following general chronology (Story 1980:10; Table 2):

TABLE 2. AN ALTERNATIVE GENERAL CHRONOLOGY OF THE ARCHAIC PERIOD

Sub-Periods	Dates
Early Archaic (or Pre-Archaic)	6000-3500/3000 B.C.
Middle Archaic	3500/3000-1000 B.C.
Late Archaic	1000 B.C.-200 B.C. (in some regions, to as late as A.D. 1200 in other regions)

A basic requirement for constructing a framework for archaeological research is the establishment of a well-defined cultural historical sequence. As is indicated by the ongoing disagreement over which general chronology is most useful, the transitional period between Paleo-Indian and Archaic occupations of Texas is somewhat ambiguous. In this respect, the Archaic period itself is poorly understood (*ibid.*). Until archaeological research clearly defines the Pre-Archaic and Archaic periods, they must be discussed in provisional terms.

Early in this period paleoenvironmental data indicate the piñon pine parkland of Texas was gradually replaced by a grassland savanna (Bryant 1969; Bryant and Shafer 1977). During the interval of ca. 5000 to 3000 B.C. there may have been a prolonged period of aridity (Story 1980:12). This climatic warming trend seems to have occurred throughout most of western North America (Jennings 1974). This increasingly semiarid climate probably diminished the amount of available ground water in the Rio Grande Plain.

The warm climatic oscillation had diverse effects from region to region. Throughout Texas and northeastern Mexico, cultural groups of the Pre-Archaic appear to have adapted to this environmental variability reflected by the diversified tool assemblages from the different regions. As Pleistocene megafauna became extinct, other mammals such as bison, deer, rabbit, squirrel, and various species of small game were hunted (Marmaduke 1978). Due to arid conditions, game populations probably fluctuated and may have been frequently scarce in the region.

Techniques and tools for hunting and plant processing gradually became more specialized during this time span. Evidence suggests, however, that throughout the region Pre-Archaic human population densities were probably quite low

(Sollberger and Hester 1972; Weir 1976; Story 1980). The Pre-Archaic settlement pattern has been summarized as follows (Story 1980:13):

> The sites are characteristically small, widely distributed, and non-specialized. They are often surface or slightly buried scatters of lithic tools and debitage on knolls and fossil floodplains, many times mixed with later materials. Less common are components deeply buried in alluvial terrace deposits. When deeply buried components are found, they usually underlie larger Middle and Late Archaic occupations.

During the field work, described in this report, evidence of Pre-Archaic occupations in the region was recovered. Of particular interest is the Pre-Archaic component of the Lost Peacock Site (41 ZV 263). It is what Story (*ibid.*) would call "less common," in that a Pre-Archaic artifact, an Early Triangular biface (with an associated assemblage) was buried ca. 60-70 cm below surface, at a site situated on alluvial terrace deposits. Further, the Pre-Archaic component at the Lost Peacock site does underlie large Middle and Late Archaic occupations. Whether these occupations are larger than the Pre-Archaic occupation is problematic since only a small portion of the site was excavated.

In summary, the climate of the Pre-Archaic period was probably warmer and more arid than the preceding Paleo-Indian period. Tools, as well as food gathering techniques became more varied. Typical Pre-Archaic bifaces and projectile points are triangular, corner notched, and stemmed varieties. Significant Pre-Archaic sites in southwestern and southern Texas are Devil's Mouth, Baker Cave, and Devil's Rockshelter (Hester 1980:147-148).

Archaic (3500 B.C. to A.D. 1000)

Drying conditions that began in the Pre-Archaic continued into the Archaic period as is indicated by paleoenvironmental data from south and east central Texas (Table 3). Though comparable information is lacking for Zavala and Dimmit Counties, these data show that climatic fluctuation may have been more frequent in some regions and less so in others. Research conducted in central Texas has suggested that the interval from 3000-2000 B.C. was marked by the driest conditions (Gunn and Weir 1976:32). In these regions the climatic fluctuations probably influenced but did not determine prehistoric human patterns of adaptation (Story 1980).

Archaic sites are generally more varied and numerous than those of the Pre-Archaic and are probably indicators of an increase in population (*ibid.*). This increase in population has been discerned by many archaeologists to be a sudden occurrence (Sollberger and Hester 1972:338; Weir 1976:124; Gunn and Weir 1976:32). However, this perceived sudden population increase is largely derived from surface finds. Stratified, excavated sites such as the Lost Peacock site do not show a sudden increase in occupation between the two periods. Perhaps, the sudden increase in population during the Archaic period is more of an intra-regional rather than an interregional phenomenon in south Texas. This possibility is discussed further in the Summary and Conclusions section of this report.

Sollberger and Hester (1972) have also suggested that the arid conditions diminished in Texas at this time and thus the habitat became more productive. Also, Hester (1978, 1981) has observed that in south Texas where food resources were (and are) irregularly spaced, short-term climatic fluctuations would have an adverse impact on the prehistoric inhabitants.

TABLE 3. SUMMARY OF ARCHAIC PERIOD PALEOENVIRONMENTAL DATA FROM SOUTH AND EAST-CENTRAL TEXAS

Dates	Pollen Data (Bryant and Shafer 1977)	Phytolith Data (Robinson 1979)
A.D. 300		
-0-	Establishment of modern vegetation communities	
400 B.C.		
800 B.C.		Tall grasses; dense riverine forests
1200 B.C.		Short grasses; reduction in riverine forests
1600 B.C.	Gradual loss of arboreal elements (except oak); increase in grasses and herbs	
2000 B.C.		
2400 B.C.		
2800 B.C.		
3200 B.C.		
3600 B.C.		

Southern Texas was predominantly characterized by a savanna (or prairie) vegetational pattern during the Archaic period. However, the region probably was as ecologically diverse then as it is now. At present, high densities of food resources cluster along the major river systems (Rio Grande, Nueces, Frio, and San Antonio) and the coast (Hester 1978). This same pattern of resource clustering may have been characteristic of prehistoric conditions.

Seed-bearing plants and succulents (such as prickly pear) became increasingly important food resources to the local inhabitants of south Texas during the Archaic period. As in the Pre-Archaic, hunting continued to be focused on deer, bison (in some areas), and small game.

Evidence of bison hunting in the Amistad region (near Del Rio) is present at Bonfire Shelter and is dated to ca. 3200 B.C. (Dibble and Lorrain 1967). Evidence also suggests that bison were not always available. A study by Dillehay (1974) indicates that bison were absent during two different periods from ca. 5800-3200 B.C. and from 1000 B.C.-A.D. 200. Dillehay also suggested that warmer climatic fluctuations may have causes these hiatuses.

During the Archaic period the regional cultural diversification that began in the Pre-Archaic became more pronounced (Story 1980). However, Kelley (1959) proposed the "Monte Aspect" as part of the "Balcones Phase" and within this concept he included most of the Texas Archaic. Kelley contended that the Texas Archaic could be viewed as a linkage of the Eastern Midcontinent Tradition with the Desert Archaic of western North America. Kelley's viewpoint has been supported by Jennings (1974:32). But this concept may be too general since the Texas Archaic was not as homogenous as Kelley has suggested. Instead the Archaic period in Texas has been demonstrated to be quite diverse at the interregional level (Hester 1975a, 1976).

The Archaic period in south Texas is characterized by such lithic artifacts as percussion flaked, triangular, leaf-shaped and stemmed projectile points, various manos, metates, and other grinding stones, unifacial and bifacial choppers, gouges, various large scrapers, drills, and utilized flakes. Such less durable artifacts as baskets, mats, nets, fur and leather cloth, sandals, cordage, wooden darts, atlatls (spear throwers), and clubs have been reported from Archaic components in southwest Texas rockshelters (Kelley 1959:281).

During our field work we found a wide variety of sites with evidence of Archaic occupations. However, the problems that characterize research of the Archaic period are similar to those discussed for the Pre-Archaic period. A well-defined regional chronology based on radiocarbon dates is lacking. More research is also needed for paleoenvironmental reconstruction, and for defining relationships between interregional settlement patterns (Gibson 1981).

Late Prehistoric Period (A.D. 1000 to A.D. 1530)

The Archaic and the Late Prehistoric period are separated by technological innovations, the most significant being the introduction of the bow and arrow (Hester 1980). The transitional period from the Late Archaic to the beginning of the Late Prehistoric period is indicated by *Ensor* and *Frio* projectile points. Small, very light, and thin pressure-flaked projectile points of various types (*Scallorn* and *Perdiz* for example) are diagnostic artifacts of the Late Prehistoric period.

The bow and arrow diffused into some regions of Texas earlier than in others so that the beginning of the Late Prehistoric period (and the duration of the transitional interval) varies across the state. Other indicators of this period are new kinds of lithic tools (blade technology, end scrapers, beveled knives), pottery making, and agriculture in some areas. Thus, regional diversification of material culture and other adaptation seem to become most pronounced during the Late Prehistoric period.

Historic Period (A.D. 1530 to A.D. 1900)

No historical sites were discovered during our field work. The first documented contact between Spanish explorers and the aboriginal inhabitants of Texas are Cabeza de Vaca's travels in the region during the 1520s and 1530s. This encounter marks the beginning of the Historic period. However, the Europeans had minimal cultural impact on the natives of south Texas until the arrival of the Spanish missionaries during the late 1600s and early 1700s (Hester 1980:160).

Southern Texas throughout the Historic period was the domain of possibly hundreds of bands of Indians who spoke Coahuilteco ("Coahuiltecan") and other poorly-known languages. Hester (*ibid.*:40) has described the generalized lifeways of these bands:

> The Coahuilteco and other hunting and gathering Indians in southern Texas lived in small groups, each with a distinctive name and territory utilized for the hunting, plant food gathering and fishing necessary to obtain subsistence. They moved throughout their territories, sometimes overlapping into the territories of other groups, in a seminomadic fashion. More detailed population and territorial estimates are difficult, as many groups were often found in widely separated areas during the seventeenth and eighteenth centuries. Villages were established at favored locations near rivers or creeks, occupied for a short time, and then the group would move on.

As the missions were established more Spaniards settled south Texas and the cultural impact on the region's aboriginal inhabitants resulted in their either being missionized, displaced to remote areas, assimilated into Spanish-Mexican groups or killed by newly introduced European diseases (Montgomery 1978:22).

PREVIOUS ARCHAEOLOGICAL RESEARCH

The drainage of the upper Nueces River area is not well understood archaeologically. The most intensive archaeological work has been done on the Chaparrosa Ranch property within the last 10 years (Hester 1978, Montgomery 1978). The Internorth Project area is situated in the northern periphery of the south Texas-Northeastern Mexico archaeological area (Hester 1980:33; Suhm, Krieger, and Jelks 1954:26). This is a region where the south Texas, Trans-Pecos Texas and central Texas areas are in close proximity (Suhm, Krieger, and Jelks 1954:26). In considering these separate "cultural" areas, the following stipulation is emphasized, "The divisions are partly geographical, partly cultural. While each culture complex is generally confined to one of these areas, it may be found to extend into one or more of the others" (*ibid.*).

This section briefly reviews the archaeological research conducted in the two counties. A more detailed synthesis of archaeological research in south Texas is available in Hester (1980).

Dimmit County

A site in southwest Dimmit County (41 DM 1) was investigated in 1932 by A. T. Jackson. This site yielded a collection of Archaic dart points, choppers, knives, and hammerstones (site report on file, Texas Archeological Research Laboratory, Austin).

Many investigations were conducted in Dimmit County during the 1950s and 1960s by the Carrizo Springs High School Archeological Society which was organized by J. W. House in 1953 (Hester 1964, 1965). This group prepared several special reports on subjects such as type descriptions, rockshelters, and burned rock middens (Nunley and Hester 1966).

The Dimmit County Archeological Survey carried out investigations in Dimmit and Zavala Counties during 1964 and 1965. Twenty-four sites were recorded dating from the Archaic to the Late Prehistoric period (*ibid.*:1).

During 1965, M. K. Scheutz of the Witte Memorial Museum excavated an Archaic Indian burial in southeast Dimmit County.

An archival research project was completed in 1979 by Espey, Huston and Associates, Inc. The published report produced by this project summarized the known (or recorded) archaeological sites of the middle Rio Grande region as of 1979 (Nichols, Voellinger, and Hale 1979).

Recently the Center for Archaeological Research at The University of Texas at San Antonio conducted portions of a survey in Dimmit County (Gibson and Uecker 1981) during which no archaeological sites were found.

Zavala County

The earliest archaeological activity from Zavala County was reported by Hester and Hill (1971). This publication marked the beginning of a series of reports that described archaeological research directed by Hester at Chaparrosa Ranch from 1970 to 1975 and by Hill, an avocational archaeologist in Crystal City (Hill and Hester 1971, 1973; Hester 1974, 1977, 1978; Hester *et al.* 1975; Holdsworth 1972; Montgomery 1978; Montgomery, Moffatt, and Richie 1975).

Nichols, Voellinger, and Hale (1979) also examined the cultural resources of Zavala County. At a regional level of investigation, Hester considered several important sites from Dimmit and Zavala Counties in a 1975 paper (Hester 1975a). Some of the findings reported in these publications as well as unpublished materials are considered in the concluding section of this report.

THE INTERNORTH PIPELINE RECONNAISSANCE INVESTIGATIONS

The reconnaissance investigations conducted in the Internorth Pipeline project area are presented in four sections. First, the field research methods are described. Second, artifact categories and terms are defined (derived from Crabtree 1972; Gibson 1980a:9; Gibson 1981:11-14). Third, the sites and their associated artifacts are described. Fourth, the conclusions based on these findings are presented.

Methodology

Because Internorth, Inc. needed to commence construction at the two plant sites (Figs. 2, 4), these areas were surveyed first. After the completion of the plant site surveys, we located the proposed pipeline routes and began our 69 mile long reconnaissance. These routes had previously been staked by land surveyors and were relatively easy to locate. Several maps of the proposed pipeline routes and well locations had been provided by the Internorth, Inc. Uvalde office, and these were valuable aids for checking our compass bearings and transects.

The reconnaissance transects were conducted on foot with the aid of a Brunton compass (and following the staked lines). In some areas the lines had been staked over a year earlier; the vegetation had grown back and some of the stakes were gone. The compass helped us keep on the line in these circumstances. Two people conducted these surveys. Both persons held to the compass and the line and stayed parallel to each other at a distance of 32 m. When a site was discovered, each person marked where they left their transects with a stake or flagging tape, then proceeded to document, photograph the sites, and collect diagnostic artifacts. Diagnostic artifacts are man-made objects that are evidence of aboriginal prehistoric functions or activities and often indicate chronological or cultural-historical affinities. Upon completion of these documentation procedures the reconnaissance team would resume surveying the proposed pipeline routes. When one section was completed, landowner access was obtained and an adjoining route survey was initiated. These procedures were repeated until the intensive reconnaissance of the 69 miles of proposed pipeline routes was completed. A total of 13 sites was discovered.

Artifact Terminology

Bifaces: These are tools which have had flake removals from both the dorsal and ventral surfaces and also along at least one edge of the implement. In this report bifaces are separated into thin (less than 5 mm) or thick categories. In some cases thin bifaces were probably used as cutting tools or knives and thick bifaces may have had other uses (such as chopping and/or cutting). They may also have been "preforms" which are bifaces that may have been intended for further modification into knives or projectile points.

Biface Thinning Flakes: "Flakes removed from a preform either by pressure or percussion to thin the piece for artifact manufacture. Thinning flakes are also removed to thin a biface or uniface. Usually shows special platform preparation" (Crabtree 1972:94). In particular biface thinning flakes have small ridges (called lips) on the ventral face between the bulb and the platform.

Chunk: These are angular pieces of raw material removed during initial reduction of the core. They are often brittle and fragmentary and usually have one or more cortex faces, but lack an identifiable bulb and/or platform.

Cores: Cores are pieces of siliceous stone or other raw materials which have at least one surface from which flakes have been removed.

Core Tools: These tools exhibit characteristics of cores, but additionally show marginal retouch, modification, or wear (observable alteration caused by use) along portions of the edge.

Cortex: A stone's natural, weathered surface.

Flake: A piece of stone that has been removed from a core (or other artifact) through the introduction of force into the core. In this report, flakes are considered to be only the result of human flintworking activities. Diagnostic attributes of a flake are: a striking platform, ripples, fissures, and a bulb of percussion (Crabtree 1972).

Flakes with Edge Modification: These are flakes which show modification on one or more edges. However, whether the edge modification resulted from cultural or natural processes is indeterminate on these specimens.

Hammerstones: These are usually round or rounded nodules of stone which show evidence of battering (small craters, abrasions, etc.,) on one or more ends.

Interior Flake: A flake lacking cortex, usually the most common flake form found at a site. Interior flakes are flintworking debitage produced from a core, another flake, or a tool which has had all cortex detached from previous flake removals.

Primary Cortex Flake: A flake characterized by a cortex dorsal surface.

Projectile Point: Usually a bifacial tool used on the distal end of a projectile such as an arrow, atlatl dart, or spear, commonly known as an "arrowhead."

Scrapers: These formalized tools show either unifacial or bifacial modification. They may also have steep edge angles. Wear patterns are often common along edges in the form of edge damage, striations and/or polish.

Secondary Cortex Flake: A flake characterized by some cortex remaining on the dorsal surface. These flakes are indicative of flintworking activities.

Unifaces: Unifaces are tools which have been modified on only one surface and one edge. Edge modification in this case was the result of intentional retouch and use. The uniface category applies to any non-formalized unifacially worked tool (does not apply to scrapers).

Utilized Flakes: These are tools which have been modified on one or more edges or surfaces through use and not intentional retouch.

Site Investigations

Sites are considered in this report to be the location of one or more prehistoric activity areas. These are spatially restricted areas where a specific task or related tasks occurred (hunting, camping, cooking, tool manufacturing and/or replacement, hide-working, etc.,). Sites and their associated activity areas are generally characterized by waste products, a scatter of tools and/or raw materials (Flannery 1976:34). Thirteen prehistoric sites were located and documented during the reconnaissance phase of the project. The locations of these sites are shown in Figures 1-4.

The Analytical and Descriptive Framework

In discussing archaeological sites, one is essentially addressing the material remains of a cultural system. When analyzing and interpreting such archaeological data fundamental assumptions are necessary and should be stated. These are presented here as an extension of those discussed by Fitzhugh (1972) and Gibson (1980b). In broad terms, humans are part of an ecosystem and are limited partially by the environment and by their ability to alter it. An assumption derived from this concept is that culture can be analyzed as a system that is the chief means of survival for humans (Gibson *ibid.*:56).

In this report, culture is assumed to be an adaptive system which articulates with the environment through a complex set of patterned relationships (such as a settlement pattern), occurring in two environmental contexts, social and physiographic (Fitzhugh 1972:7). Archaeologists are concerned with defining patterns in both aspects of the environment. However, in archaeology the bulk of the evidence concerns physiographic aspects.

Like many archaeologists the author assumes that the most accessible and dynamic relationship between a culture and its environment is expressed in its economic and technological adaptations which are partially expressed in material cultural remains. Another assumption archaeologists make is that technological behavior is directive (e.g., focused on economic exploitation) and a major part of a society's adaptation. Yet it must be emphasized that technology is only part of the whole cultural system (*ibid.*).

An important archaeological assumption is that technological and economic behavior observed ethnographically and experimentally and the material remains produced by this behavior, may represent similar prehistoric behavior as evidenced in the archaeological record. We also assume that an assemblage of artifacts indicates various activities which have occurred at a particular place at a particular time (Fitzhugh 1972:7).

Recently these assumptions have been expressed in a detailed model for hunter-gatherer cultural systems (Binford 1980). This model is used in this report as a descriptive and analytical framework. A brief review of the characteristics of Binford's model provides a departure point in presenting the results of the reconnaissance.

Binford (*ibid.*:10) defined hunter-gatherer subsistence and settlement into two basic types "foragers" and "collectors," and expressed these types in terms of

a model. Upon examination of the evidence which follows, the prehistoric hunter-gatherers in the project area would appear to have been collectors.

In discussing foragers, Binford (1980:5) writes, "One distinctive characteristic of a foraging strategy is that foragers typically do not store foods but gather foods daily. They range out gathering food on an 'encounter' basis and return to their residential bases each afternoon or evening." By contrast "collectors" are hunters, who supply themselves with specific resources through specially organized task groups (*ibid.*:10). In order to demonstrate this hypothetical adaptation in the study area, Binford's model is presented in terms of its components.

If the technoenvironmental adaptation was of the forager mode, the following types of sites with the associated criteria for their identification and placement would be expected in the study area (Binford 1980:9; Gibson 1981:29; Table 4).

TABLE 4. COMPONENTS OF BINFORD'S FORAGER MODEL FOR HUNTER-GATHERERS

Sites	Definition	Archaeological I.D. Criteria
Residential Base	Center of subsistence activities where most processing, manufacturing and maintenance activities take place. Short term in forager mode. Longer term in collector mode.	Features, consisting of hearths, lithic workshops, ground stone tools for plant processing, mixture of diverse floral and faunal remains. Depth of deposit would be minimal due to brief occupation.
Location	Where extractive activities are exclusively conducted, low-bulk procurement. Very brief usage.	Difficult to identify due to brief occupation and low bulk extraction, possibly some modified floral materials and remains (Binford 1980:9). No hearths or evidence of long term occupation would be present.

In addition to the two types of sites described above, if the hunter-gatherer groups were collectors, one would expect the following types of sites with their associated criteria for identification (Binford 1980:10-12;Table 5):

TABLE 5. COMPONENTS OF BINFORD'S COLLECTOR MODEL FOR HUNTER-GATHERERS

Sites	Definition	Archaeological I.D. Criteria
Field camp	Temporary occupational center for a task group which maintains itself while away from the residential base. Field camps may be expected to be further differentiated by specialized tools and the nature of the target resources, thus caribou hunting camps, fishing camps, mastodon hunting camps, etc.	Small discrete scatter of cultural debris, fire-cracked rock from hearth, flakes from tool maintenance, and abundance of one kind of fauna. Lost or discarded specialized tools.
Station	Where special-purpose task groups are localized in information gathering, i.e., game movement, may be ambush locations or hunting stands.	Minimal to low cultural debris and faunal remains, etc., if associated nearby with a field camp I.D. of station may be facilitated.
Cache	Common components of a logistical strategy, i.e., successful procurement of resources by relatively large groups generally means large bulk. This bulk must be transported to consumers, temporary storage is required. Such field storage facilities may be constructed to deal specifically with the bulk obtained.	Evidence of large bulk processing large amounts of split bone, discarded tools, butchering marks on the bone, storage features, pits, racks, platforms, etc., (evidence of postholes).

Within each site type one can expect further variability which may relate to the seasonal availability of, and to the character of the resources being exploited by logistically organized task groups. Another source of intrasite variability is that all of the functions may not necessarily be independently located. As Binford (1980:12) points out, "In some situations one might be able to use the field camp as an observation point, in others, it may equally serve as a hunting stand. Many other combinations can be imagined. The point is simple, the greater the number of possible combinations, the greater the range of intersite variability which we may expect." This is an important point for consideration, evidence of contemporaneous, extensive, intersite variability indicates the collector cultural system.

The author recently tested the applicability of Binford's model in extreme southern Texas (Gibson 1981) and found it to be useful, particularly as a site classification aid. Further aspects of Binford's (1978, 1980) research should be presented, in that these factors provide limitations to the analysis: (1) not all behavior results in the patterned deposition of cultural materials; (2) of that behavior which does result in the patterned deposition of cultural materials, not all of it will be preserved at an exposed, surface site like many of those found during the reconnaissance. These considerations frame the conclusions presented at the end of this report.

Site Descriptions

41 ZV 196

Elevation: 232-235 m or 760-770 ft above mean sea level.

Map Nate: Batesville NW 7.5'.

Map Coordinates: UTM Zone 14 Easting 428920 Northing 3200870.

Environmental Location: Site is located on ridgetop along eastern edge of the Nueces River valley. Ridgetop drains to the southeast. Area is vegetated with heavy sagebrush, acacias, and persimmons occurring on gravel deposits. Guayacan, mesquites, and acacias tend to occur on sandy loam flats. Various grasses and weeds are scattered throughout both areas. Soils are a light brown sandy loam in lower areas, mixed with Uvalde gravels on ridges. Nearest potential water source is a dry creek bed ca. 250 m to the southwest.

Artifacts Recovered: 1 possible *Guadalupe* tool, 3 cobble cores, 2 biface preforms (thick), 1 retouched flake, 8 primary cortex flakes.

Artifacts Observed: A variety of small waste flakes; most are primary cortex and interior flakes.

Description: This site appears to have been a flintworking activity location that was perhaps briefly occupied. Because of the severe disturbance it has recently suffered, the shape and dimensions of the site cannot be confidently estimated.

Probable Cultural Association: The possible *Guadalupe* tool has a Pre-Archaic association.

Condition: Totally destroyed by cut and fill operations, plowing, and burning.

Proximity to Proposed Pipeline Route: Site is located within the perimeter of Internorth Natural Gas Compressor Station No. 1.

Recommendations: The site surface was severely disturbed. There was no indication of buried, undisturbed, cultural deposits. Further work is not recommended.

41 ZV 254

Elevation: 250-253 m or 820-830 ft above mean sea level.

Map Name: Batesville NW 7.5'.

Map Coordinates: UTM Zone 14 Easting 431970 Northing 3206330.

Environmental Location: This site is located along the western edge of an intermittent stream. Drainage is oriented to the east. The most concentrated occupation of the site is on the southern edge of the stream bank. The site is part of the western slope of a long ridge. The erosional channel of the stream bed is over 1.5 m deep in places and is ca. 12 m wide. Predominant vegetation in the site area is acacia and sagebrush. Some prickly pear is also scattered along the south side of the stream bank. Soils are a light orangish brown sandy loam mixed with Uvalde gravels. Several deflated hardpans dissect the site area.

Artifacts Recovered: 1 *Nolan* projectile point (Fig. 7,j), 2 unclassified dart points, 3 thin bifaces (probably used as knives).

Artifacts Observed: A large number of flakes of every variety, 2 exhausted cores, a large number of primary cortex flakes, several utilized flakes, numerous scattered fire-cracked and fire-burned rocks.

Description: 41 ZV 254 was probably a residential base camp. There are literally hundreds of flakes scattered across the site surface. Also, a quantity of burned and fire-cracked rock was observed in scatters across the site. The site is irregular in shape and covers an area larger than 90 m^2. Site shows evidence of longer term occupation and may have been used repeatedly or seasonally.

Probable Cultural Association: The *Nolan* dart point has an Early Archaic period association.

Condition: This site has been disturbed by root plowing, sheetwash, and wind erosion. There may be some isolated portions of it that are still buried.

Proximity to Proposed Pipeline Route: Pipeline would affect about 8 m^2 of the most eroded portion of 41 ZV 254 along the western periphery of the site. There is no evidence of buried deposits in the impact area.

Recommendations: Since the pipeline will affect a marginal area of the site no further work is recommended at 41 ZV 254. However, if the pipeline route should be altered and moved eastward, testing should be conducted.

41 ZV 255

Elevation: 229-232 m or 750-760 ft above mean sea level.

Map Name: Batesville NW 7.5'.

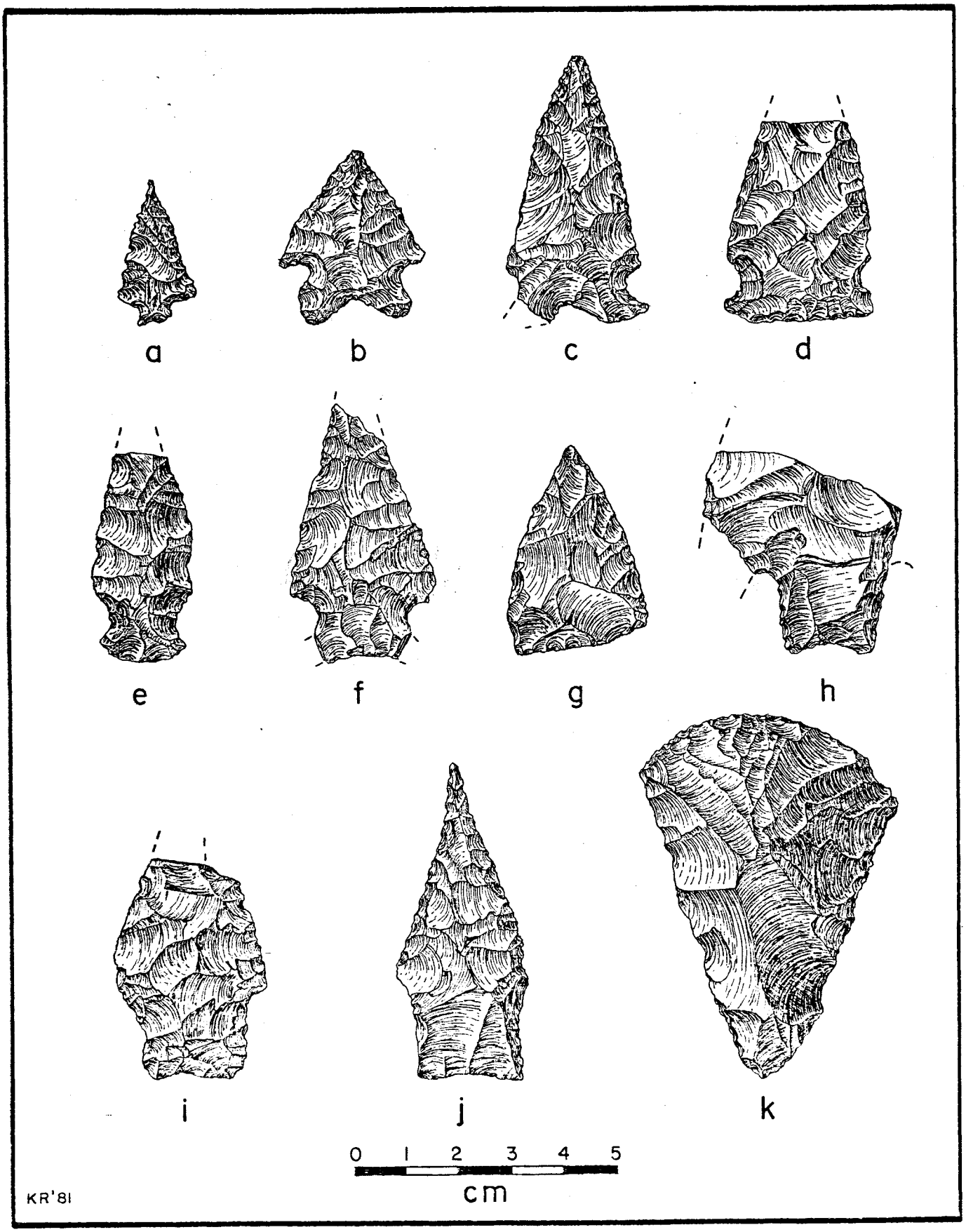


Figure 7. *Selected Artifacts from Internorth Project Sites.* a, 41 ZV 263, *Scallorn* projectile point; b,c, 41 ZV 263, *Frio* projectile points; d, 41 ZV 257, unclassified projectile point; e, 41 ZV 263, *Ensor* projectile point; f, 41 ZV 255, unclassified projectile point; g, 41 ZV 264, *Tortugas* projectile point; h, 41 ZV 263, *Pedernales* projectile point; i, 41 ZV 257, *Travis* projectile point; j, 41 ZV 254, *Nolan* projectile point; k, 41 ZV 259, *Clear Fork* tool.

Map Coordinates: UTM Zone 14 Easting 433950 Northing 3205520.

Environmental Location: 41 ZV 255 is located in an area of nearly flat topography (upland plain) and along the south bank of an intermittent stream. Drainage is in a general eastward orientation. Area is densely vegetated, primarily in sagebrush, acacia, and persimmon. Some low mesquites occur on stream edge. The soil is a light brown sandy loam with some Uvalde gravels intermixed.

Artifacts Recovered: 1 unclassified corner notched projectile point (Fig. 7,f), 2 thin bifaces (knives), 1 thick biface (chopping tool), 6 primary cortex flakes.

Artifacts Observed: Less than 10 interior flakes were observed in the site area. Less than 5 pieces of fire-burned rock were observed in the site area.

Description: The recovered artifacts, the other low density artifacts (various interior flakes) observed but not collected and the presence of fire-burned rock indicate that this site may have been a field camp, where various hunting related activities took place (tool maintenance and possibly butchering). 41 ZV 255 is circular shaped and covers an area of approximately 10 m^2. Occupation was probably brief.

Probable Cultural Association: The corner notched projectile point has a general Archaic association.

Condition: Slightly disturbed by sheetwash. There is no evidence of buried cultural deposits.

Proximity to Proposed Pipeline Route: The pipeline will go through this site.

Recommendations: Since this site was mapped and collected of all diagnostic artifacts and there is no evidence of buried cultural deposits, no further work is recommended.

41 ZV 256

Elevation: 235-238 m or 770-780 ft above mean sea level.

Map Name: Batesville NW 7.5'.

Map Coordinates: UTM Zone 14 Easting 433400 Northing 3205480.

Environmental Location: 41 ZV 256 is located on an upland plain in an area of no significant topographic features. The nearest possible water source is a dry creek bed approximately 1000 m to the south. Site area is densely vegetated in low mesquite, sagebrush, and some persimmon. A few clumps of prickly pear are scattered throughout the site vicinity along with various weeds and grasses. Soil is a light brown sandy loam with some gravel intermixed.

Artifacts Recovered: No collection was made.

Artifacts Observed: The following list contains all of the artifacts observed in the site area: 1 thick biface (preform), 4 primary cortex flakes; 2 secondary cortex flakes, 2 interior flakes.

Description: 41 ZV 256 was probably a flintworking activity location that was briefly occupied. The site has been eroded by sheetwash. There was no evidence of buried cultural deposits. The site is roughly circular with an approximate size of 16 m^2.

Probably Cultural Association: Unknown.

Condition: Eroded by sheetwash, exposed on surface.

Proximity to Proposed Pipeline Route: Pipeline will affect the southern half of the site.

Recommendations: The site surface was eroded. There was no indication of buried, undisturbed, cultural deposits. Further work is not recommended.

41 ZV 257

Elevation: 235 m or 770 ft above mean sea level.

Map Name: Batesville NW 7.5'.

Map Coordinates: UTM Zone 14 Easting 43330 Northing 3205420.

Environmental Location: 41 ZV 257 is located on an upland plain along the east bank of an intermittent stream that drains to the northeast. The area is moderately vegetated in scattered sagebrush, low mesquite, acacia, persimmon, prickly pear, and various grasses. In the channel and along the edge of the intermittent stream are tall stands of live oak, mesquite, and other hardwoods. Stratigraphy exposed in the stream bed (which is over 2 m deep in places), shows that the light brown sandy loam has a concentrated zone of gravel about 10 cm below the present ground surface. This gravelly loam strata is ca. 60 m thick and underlain by an orangish clay. Sandstone bedrock is under the clay and is exposed in the bottom of the channel.

Artifacts Recovered: 1 *Travis* projectile point (Fig. 7,i), 1 *Ensor* projectile point, 1 unclassified projectile point (Fig. 7,d), 1 corner notched, thin, biface.

Artifacts Observed: A large number of flakes (several hundred) and several scatters of fire burned and cracked rock were observed on the site surface.

Description: 41 ZV 257 was probably a residential base camp that may have been occupied from the Middle Archaic to Late Prehistoric periods. The density of flakes suggests either repeated or long-term occupations, or both. Also, the quantity of fire cracked and burned rock supports this interpretation. This site is roughly ovoid in shape and covers an area of about 80 m^2.

Probable Cultural Association: *Travis* points have Mid-Archaic association. *Ensor* points are considered Late Prehistoric.

Condition: About one-half of the site surface has been eroded by sheetwash. Possibly some buried archaeological components are located upslope from the exposed material.

Proximity to Proposed Pipeline Route: This site is located 18 m north of the pipeline corridor. 41 ZV 257 will not be affected by the proposed pipeline route.

Recommendations: Since this site is located outside of the pipeline impact area, no further work is recommended. However, if the pipeline is moved 18 m north this site should definitely be tested.

41 ZV 258

Elevation: 241-244 m or 790-800 ft above mean sea level.

Map Name: Batesville NW 7.5'.

Map Coordinates: UTM Zone 14 Easting 432370 Northing 3205150.

Environmental Location: 41 ZV 258 is located near the bottom of the east slope of a low ridge. The nearest possible water source is ca. 300 m to the south (an intermittent stream). Area is densely vegetated in sagebrush, acacia, persimmon, and mesquite. The soil in the site vicinity is a light brown sandy loam.

Artifacts Recovered: No collection was made.

Artifacts Observed: 4 primary cortex flakes, 1 secondary cortex flake. This comprises all of the artifacts seen on the site.

Description: This site appears to have been a flintworking activity location that was probably occupied for a brief time. The site covers about 4 m^2 and is roughly circular in shape. There is no evidence of buried cultural deposits.

Probably Cultural Association: Unknown.

Condition: Site has suffered some sheetwash erosion.

Proximity to Proposed Pipeline Route: 41 ZV 258 is located about 15 m south of the proposed pipeline.

Recommendations: Since this site is outside of the pipeline impact area, no further work is recommended.

41 ZV 259

Elevation: 250-253 m or 820-830 ft above mean sea level.

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deeper than most localities in the project area). Area is vegetated in sagebrush, low mesquite, acacia, and short grasses. Soil is a light brown sandy loam. The nearest potential water source is ca. 600 m to the southeast (a dry creek bed).

Artifacts Recovered: 1 biface (a probable *Guadalupe* tool).

Artifacts Observed: 3 utilized flakes and several interior flakes on site surface. A scatter of fire-burned and cracked rock occur in the site vicinity.

Description: 41 ZV 260 probably was an upland field camp. Perhaps it was associated with the large occupation site of 41 ZV 254 which would have been the nearest water source. Site is roughly circular and is approximately 100 m^2 in diameter.

Probable Cultural Association: The *Guadalupe* tool has a Pre-Archaic association.

Proximity to Proposed Pipeline Route: Site is located within the right-of-way of the main pipeline and a spur line (Fig. 3).

Recommendations: The soil in the site vicinity appears to be deep. There is a potential for buried cultural deposits. Shovel testing is recommended to determine if there are such buried deposits.

41 ZV 261

Elevation: 210-220 m or 690-720 ft above mean sea level.

Map Name: Batesville NW 7.5'.

Map Coordinates: UTM Zone 14 Easting 428410 Northing 3199830.

Environmental Location: 41 ZV 261 is located on top of and down the southern slope of a ridge along the eastern edge of the Nueces River valley. The ridgetop drains to the southeast. The ridge is vegetated primarily in dense clumps of huisache and some scattered prickly pear. Soils are a light brown sandy loam at the bottom of the slope, mixed with large amounts of Uvalde gravels on the ridge. Nearest potential source of water is a dry creek bed ca. 650 m to the southwest.

Artifacts Recovered: No collection was made.

Artifacts Observed: 3 large thick bifaces (preforms), a number of primary cortex flakes (30+), and over 50 interior flakes. Diagnostic artifacts and fire-burned rocks were not seen.

Description: 41 ZV 261 was probably a flintworking activity location that was probably repeatedly used. Therefore, it could be considered a "quarry" site. The largest amount of good quality cryptocrystalline silicate stones (pebble and cobble sized) seen during the reconnaissance occurs here. Site is irregularly shaped and covers an area of ca. 200 m^2.

Probable Cultural Association: Unknown.

Condition: The entire site has been heavily scoured by sheetwash.

Proximity to Proposed Pipeline Route: 41 ZV 261 is located within the pipeline right-of-way.

Recommendations: Site surface is heavily eroded. There is no evidence of buried cultural deposits. Further work is not recommended.

41 ZV 262

Elevation: 204-210 m or 670-690 ft above mean sea level.

Map Name: Batesville NW 7.5'.

Map Coordinates: UTM Zone 14 Easting 428200 Northing 3199500.

Environmental Location: 41 ZV 262 is located on an ancient terrace of the Nueces floodplain. The nearest water source is a dry creek bed less than 100 m to the south. The site area has been heavily eroded by sheetwash. Vegetation is light and consists of huisache, acacia, and prickly pear scattered in random clumps. Soil is a light brown sandy loam, with high gravel content.

Artifacts Recovered: No collection was made.

Artifacts Observed: 3 small thick bifaces (preforms), less than 12 interior flakes, less than 5 secondary cortex flakes.

Description: 41 ZV 262 may have been a small flintworking activity location. Perhaps it was associated with the quarry site at 41 ZV 261 which is ca. 1200 m to the northeast. Occupation appears to have been light, probably brief. The small amount of cultural material is scattered in an area roughly 500 m^2 and appears to have been displaced.

Probable Cultural Association: Unknown.

Condition: Heavily eroded by sheetwash.

Proximity to Proposed Pipeline Route: 41 ZV 262 is located within the pipeline right-of-way.

Recommendations: There was no evidence of buried, undisturbed, cultural deposits. Site surface is badly eroded. No further work is recommended.

41 ZV 263 (the Lost Peacock site)

Elevation: 198 m or 650 ft above mean sea level.

Map Name: La Pryor SE 7.5'.

Map Coordinates: UTM Zone 14 Easting 425240 Northing 3193740.

Environmental Location: 41 ZV 263 is located along the edge of a remnant terrace of the Nueces River, midway between present Nueces channel and a deeply eroded dry creek gully. The site is heavily vegetated in tall mesquite, live oak, and sagebrush. Without question, it is the most densely vegetated segment of the project area. The soil is a light brown sandy silt that occurs from surface to a depth of ca. 80-90 cm, underlain by a subsoil of reddish clay. Very slight gravel content is present in these soils. Site has suffered some light sheetwash erosion.

Comments: This site is more fully described in the Excavations at the Lost Peacock site section of this report. During the reconnaissance, only Late Archaic and Late Prehistoric diagnostic artifacts were found. However, subsequent test excavations revealed 41 ZV 263 was a stratified multicomponent residential base camp that was probably occupied frequently from the Late Paleo-Indian through the Late Prehistoric periods. However, only the reconnaissance data is summarized here.

Artifacts Recovered: 2 *Frio* projectile points (Figs. 7,b,c), 1 *Scallorn* projectile point (Fig. 7,a), 1 *Ensor* projectile point (Fig. 7,e), 2 thin biface fragments, 1 freshwater mussel shell.

Artifacts Observed: Over 200 flakes with all types represented, scattered fire-cracked and burned rocks.

Description: 41 ZV 263 was a large residential base camp that was occupied intensively and perhaps repeatedly. Its proximity to the Nueces River made it an attractive location. Site is irregularly shaped and covers an area over 1000 m^2.

Probable Cultural Association: Late Archaic and Late Prehistoric (see above Comments).

Condition: Site has been disturbed by two dirt roads (Fig. 5). Surface has suffered some slight sheetwash erosion.

Proximity to Proposed Pipeline Route: The pipeline right-of-way would go through the center of this site.

Recommendations: Subsurface testing is strongly recommended.

41 ZV 264

Elevation: 198 m or ca. 650 ft above mean sea level.

Map Name: La Pryor SE 7.5'.

Map Coordinates: UTM Zone 14 Easting 426210 Northing 3194800.

Environmental Location: This site is located on a ridgetop which is flanked on the east, west, and south by deep, dry creek beds. Predominant vegetation in

the site area is mesquite, live oak, and sagebrush growing in dense condentrations. Soil is a light brown sandy silt with very low gravel content.

Artifacts Recovered: 2 *Tortugas* projectile points (Fig. 7,g).

Artifacts Observed: 2 primary cortex flakes (1 utilized), 7 interior flakes.

Description: Because of its low artifact density, 41 ZV 264 appears to have been a field camp where various hunting related activities occurred. This site is roughly circular shaped and covers an area of less than 200 m^2.

Probable Cultural Association: The two *Tortugas* points have possible Middle Archaic associations.

Condition: Severely disturbed and eroded by *sendero* and sheetwash. There is no evidence of buried cultural deposits.

Proximity to Proposed Pipeline Route: Pipeline right-of-way includes southern periphery of the site. The pipeline would be placed in the present location of the *sendero*.

Recommendations: This site was mapped and collected of all diagnostic artifacts and there is no evidence of buried cultural deposits. No further work is recommended.

41 ZV 265

Elevation: 198-201 m or 650-660 ft above mean sea level.

Map Name: La Pryor SE 7.5'.

Map Coordinates: UTM Zone 14 Easting 425880 Northing 3193550.

Environmental Location: 41 ZV 265 is located on a ridge along the south bank of a dry creek bed. Site area is densely vegetated in low mesquite and scrub oak. Soil is a light brown sandy loam with moderate gravel content. Sandstone bedrock outcrops are exposed in the site vicinity.

Artifacts Recovered: 1 *Clear Fork* tool, 1 end scraper.

Artifacts Observed: Less than 10 scattered flakes, most were interior flakes.

Description: 41 ZV 265 probably was a field camp where hunting related activities, such as food processing and tool maintenance, occurred. Site is irregularly shaped and covers less than 100 m^2. Occupation was probably brief.

Probable Cultural Association: The *Clear Fork* tool has a general Archaic association.

Condition: This site has been totally eroded by sheetwash and is in very poor condition.

Proximity to Proposed Pipeline Route: The pipeline will affect the southwest periphery of this site. It will miss 98 percent of 41 ZV 265.

Recommendations: This site will be affected minimally by the pipeline. Severe erosion has already disturbed the site. Diagnostic artifacts were collected and the site was mapped. Further work is not recommended.

41 ZV 163

Elevation: 192-198 m or 630-650 ft above mean sea level.

Map Name: La Pryor SE 7.5'.

Comments: This site was not discovered by our reconnaissance investigations. However, 41 ZV 163 is in the project vicinity and was noted during archival research at the Texas Archeological Research Laboratory (TARL) in Austin. It is included here because it represents part of the prehistoric settlement pattern in the local region. The data presented here are derived from a site form recorded by Mr. T. C. Hill, Jr., of Crystal City, on August 30, 1971.

Environmental Location: 41 ZV 163 is located on top of the east bank of the Nueces River channel. The site is approximately 9 m above the surface of the river. The Nueces River at this locality is characterized by a gravel bottom with eddies and rapids. Site vegetation is very dense large mesquite trees and brush. The soil is a dark black sandy loam.

Artifacts Recovered: 2 fragments of *Leon Plain* pottery.

Artifacts Observed: None described.

Description: This site appears to have been a field camp based on the low density of artifacts reported. Actual site dimensions and shape were indeterminate. Occupation was probably brief.

Probable Cultural Association: *Leon Plain* pottery dates from the last phase of the Late Prehistoric period and is bone tempered.

Condition: Slightly disturbed by *sendero*.

Proximity to Proposed Pipeline Route: The pipeline will not be near 41 ZV 163.

Recommendations: No further work is necessary.

Subsurface Testing at Two Sites

Upon completion of the surface reconnaissance, two sites (41 ZV 260 and 41 ZV 263) were selected for subsurface testing. A series of small shovel test pits were dug at each site. These shovel tests had an average depth of 80 cm, were approximately 40 cm in diameter, and circular in shape. All of the excavated soil was sifted through 1/4-inch mesh screen. The results of these subsurface shovel tests are described below.

41 ZV 260

Two proposed pipeline routes intersected at 41 ZV 260, the main pipeline corridor which was oriented northwest to southeast and the Jackson spur line which is oriented 90° to the axis of the main pipeline (Fig. 3). The crew excavated four shovel test pits at this site: Shovel Tests 1 and 2 were located in the intersection to a depth of 70 cm. Shovel Test 2 was excavated ca. 16 m southeast of the intersection to a depth of 75 cm. Shovel Test 3 was excavated 15 m northeast of the intersection along the Jackson spur line to a depth of 65 cm. Shovel Test 4 was located 25 m northeast of the intersection along the Jackson spur line and excavated to a depth of ca. 80 cm. Consistent results were obtained from all of the shovel tests. The stratigraphy can be summarized as follows.

Stratum 1. This is a dark brown clayey silt with high gravel content, very moist and sticky at time of excavation. The cultural debris (primarily interior flakes) is confined to the upper 5 cm. Stratum 1 occurs from the surface to a depth of 50 cm.

Stratum 2. This is a layer of broken and crushed caliche mixed with brown clay. It is devoid of cultural debris. Stratum 2 occurs from ca. 50 cm to at least 80 cm below surface. The actual bottom limit of Stratum 2 was not reached.

Site 41 ZV 260, as evidenced by the layer of broken and crushed caliche, had probably been disturbed by such ranching activities as chaining or root plowing. This disturbance has probably occurred within the last 20 years. Furthermore, there was no evidence of significant buried cultural remains. Those flakes found 5 cm below the surface in Stratum 1 were mixed and jumbled. Additionally, the site has suffered some aeolian deflation. Upon completion of the shovel tests no further work was recommended.

41 ZV 263

The main corridor of the proposed pipeline passed through the center of 41 ZV 263. Most of the cultural debris observed on the site surface during the reconnaissance was located in the two *senderos* that intersect near the center of the site (Fig. 5). Two shovel tests were excavated at this site to a depth of ca. 80 cm.

Shovel Test 1 was located ca. 30 m north of the southern edge of the site along the proposed pipeline center line. Shovel Test 2 was located ca. 15 m north of the southern edge of the site, also along the proposed pipeline center line. Consistent results were obtained from both shovel tests. The materials recovered from these shovel tests were:

Shovel Test 1

Fire-cracked rock: 3 fragments
Flakes: 32 (various types)
River Mussels: 5 fragments
Diagnostic artifact: 1 basal section of a *Pedernales* projectile point (Fig. 7,h)

Shovel Test 2

Fire-cracked rock: 8 fragments
Flakes: 21 (various types)
River mussels: 2 fragments
Diagnostic artifact: none

The stratigraphy can be summarized as follows:

Stratum 1. This is a layer of reworked colluvium, loosely compacted with numerous root intrusions. This stratum contains the topsoil present at the site. Its thickness varies from less than 5 cm to ca. 10 cm, depending on how much sheetwash erosion it has suffered. The color of this soil is moderate brown when wet and light grayish brown when dry.

Stratum 2. This is a layer of fine silty loam alluvially derived. The numerous root intrusions and insect casts within this stratum suggest that it is an old stratum that has never been root plowed or chained. Further, the absence of gravel lenses and discontinuities indicate that this stratum was probably deposited by several episodes of overbank flooding of the Nueces and/or its nearby tributary. This stratum begins approximately 10 cm below surface and extends to an approximate depth of 80 cm. Most of the cultural material at the site occurs in this stratum. This soil is dark brown when wet and grayish brown when dry.

Stratum 3. This is a layer of silty clay with silt content decreasing as depth increases. This layer is devoid of cultural material. The Stratum 2-3 boundary is well defined and may indicate that an older strata above the clay was scoured and subsequent overbank episodes established Stratum 2. Stratum 3 soil is an orangish tan.

Based on the surface finds of two *Ensor* projectile points and one *Scallorn* projectile point as well as the subsurface recovery of a *Pedernales* projectile point, 41 ZV 263 was judged a multiple component site. We concluded that there was high potential for three possible cultural historical occupations at this site from approximately the Middle Archaic, Late Archaic, and Late Prehistoric periods. These diagnostic artifacts, coupled with the numbers of flakes recovered and observed on the site, suggested that some of these occupations may have been of long term intensity. Also, the presence of river mussel shells in a buried context indicated faunal remains might be preserved at 41 ZV 263. Further subsurface testing was recommended, and controlled, hand excavated test pits was the proposed methodology. These further excavations at 41 ZV 263 are described in the following section of this report.

Summary of Reconnaissance Data

The major interpretations obtained from the reconnaissance phase of the Internorth Project concerning the principal activities performed at, and the primary prehistoric functions of, the sites are described below (see also Table 6).

Sites 41 ZV 256, 41 ZV 258, and 41 ZV 262, with their low amounts of occupational debris, were used briefly by people of unknown cultural/historical association. All of these sites functioned as flintworking locations. Another flintworking location, 41 ZV 196, has ambiguous Archaic period associations.

The evidence from 41 ZV 261 suggests it was repeatedly used as a flintworking location, probably as a quarry site. Unfortunately diagnostic artifacts were not found, therefore, the cultural/historical associations of the site are unknown.

TABLE 6. INTERNORTH PIPELINE PROJECT SITE TYPES, THEIR ESTIMATED INTENSITY OF OCCUPATION, DIAGNOSTIC ARTIFACTS, ENVIRONMENTAL SETTING, AND ASSOCIATED CULTURAL/HISTORICAL PERIODS

Site	Type	Degree of Occupation	Diagnostic Artifacts	Environmental Setting	Cultural/Historical Association	Nearest Potential Water Source	Distance to Water
41 ZV 163	Field Camp	Brief	2 *Leon Plain* ceramic fragments	River terrace	Late Prehistoric*	Nueces River	5 m or less
41 ZV 196	Flintworking Location	Brief	1 possible *Guadalupe* tool	Ridge top w/ lag gravels	Archaic†	Dry Creek Bed	250 m
41 ZV 254	Residential Base Camp	Long-term¶	1 *Nolan* projectile point	Ridge slope w/ lag gravels	Early Archaic	Dry Creek Bed	5 m or less
41 ZV 255	Field Camp	Brief	1 corner notched projectile point (unclassifiable)	Upland Plain	Archaic*†	Dry Creek Bed	5 m or less
41 ZV 256	Flintworking Location	Brief	None	Uplain Plain w/ lag gravels	Unknown	Dry Creek Bed	1000 m
41 ZV 257	Residential Base Camp	Long-term¶	1 *Travis* and 1 *Ensor* projectile point	Upland Plain w/ lag gravels	Mid-Archaic to Late Archaic and Late Prehistoric	Dry Creek Bed	5 m or less
41 ZV 258	Flintworking Location	Brief	None	Ridge slope w/ lag gravels	Unknown	Dry Creek Bed	300 m

*in excavations, we found diagnostics from the Late Paleo-Indian to Late Prehistoric.
†ambiguous.
¶possibly used repeatedly and/or seasonally.

TABLE 6. (continued)

Site	Type	Degree of Occupation	Diagnostic Artifacts	Environmental Setting	Cultural/Historical Association	Nearest Potential Water Source	Distance to Water
41 ZV 259	Flintworking Location and Field Camp	Brief	1 *Clear Fork* tool	Ridge slope w/ lag gravels	Archaic†	Dry Creek Bed	250 m
41 ZV 260	Field Camp	Brief	1 probable *Guadalupe* tool	Upland Plain	Archaic*†	Dry Creek Bed	600 m
41 ZV 261	Flintworking Location (Quarry site)	Long-term¶	None	Ridge top and slope w/ lag gravels	Unknown	Dry Creek Bed	650 m
41 ZV 262	Flintworking Location	Brief	None	Ancient Flood-plain terrace	Unknown	Dry Creek Bed	100 m or less
41 ZV 263	Large Residential Camp	Long-term¶	2 *Frio*, 1 *Ensor*, and 1 *Scallorn* projectile points*	Remnant River terrace	Paleo-Indian to Late Prehistoric	Nueces River and Dry Creek Bed	5 m or less
41 ZV 264	Field Camp		2 *Tortugas* projectile points	Ridge top	Mid-Archaic*	Dry Creek Bed	15 m or less
41 ZV 265	Field Camp	Brief	1 *Clear Fork* tool	Ridge top	Archaic*†	Dry Creek Bed	5 m or less

*in excavations, we found diagnostics from the Late Paleo-Indian to Late Prehistoric.
†ambiguous
¶possibly used repeatedly and/or seasonally.

Several field camp sites were found during the reconnaissance. Only one such site, 41 ZV 163, shows Late Prehistoric cultural/historical affinities. Three sites, 41 ZV 255, 41 ZV 260, and 41 ZV 265, have ambiguous Archaic associations. A more specific identification is not possible as the diagnostic artifacts recovered from these sites occur in most subperiods of the south Texas Archaic.

There is a similar problem involved in interpreting the cultural/historical relationship of site 41 ZV 259. The evidence suggests it functioned both as a flintworking location and as a field camp. Unfortunately the *Clear Fork* tool specimen type has been found in both Early and Middle Archaic contexts in south Texas.

Three residential base camps were found. Most significant of these is site 41 ZV 263, a multicomponent stratified site dating from the Paleo-Indian to the Late Prehistoric period (see following sections of this report). Site 41 ZV 254, because of the *Nolan* projectile point recovered, dates at least from the Early Archaic period. However, it may also have been used during other periods. Site 41 ZV 255 has at least two periods of occupation represented by the recovered diagnostic artifacts. The corner notched projectile point has possible Middle or Early Archaic associations and the *Ensor* artifact has Late Archaic to Late Prehistoric affinities.

A further note should be made of isolated artifacts observed during the reconnaissance. Some artifacts (usually non-diagnostic bifaces and unifaces) were often found--particularly in the uplands--singly, without any other associated cultural debris, and often over a mile from the nearest archaeological site. These artifacts may be indicators of prehistoric activities or what Binford (1980:9) calls a location. Perhaps some plant extractive activities occurred prehistorically where these isolated artifacts are now found.

In conclusion, the site sample obtained from the reconnaissance is too small for the formulation of hypotheses concerning the prehistoric settlement/subsistence pattern. However, these data do support a model similar to the Collector Model defined by Binford as being present during most of the regional prehistoric sequence. Other settlement subsistence interpretations are offered in the conclusions of this report.

EXCAVATIONS AT THE LOST PEACOCK SITE, 41 ZV 263

As noted in the Site Descriptions section of this report, 41 ZV 263 is located along the edge of a remnant Nueces River terrace, midway between the present Nueces channel and a deeply eroded dry creek gully (Fig. 4). The site is vegetated in dense stands of tall mesquite, live oak, and sagebrush. The site has suffered some light sheetwash erosion. Two ranch roads or *senderos* bisect the site, and the main proposed pipeline corridor runs through its center. Because of the potential of severe impact from pipeline construction to the site's buried deposits, the excavation area was confined to that part of the site where the actual pipeline would be located (Fig. 5).

Excavation Methodology

After clearing the working area of vegetation, two 1 x 4 m excavation units were staked out in the zone where the severest impact from pipeline construction activities could be expected (or the impact zone). Test Pit 1 was located midway between the two pipeline center lines in order to assess the nature of the site in an area that would be heavily graded. Test Pit 2 was located along the east pipeline route in order to ascertain the nature of the site in an area that would be graded and excavated by construction activities.

Also, six more shovel tests were excavated in the site area with the objective of defining the horizontal and vertical extent of buried deposits located throughout the site. The shovel tests revealed that the subsurface integrity of the site was unchanged in the areas checked. However, the cultural debris recovered from Shovel Test 7 was markedly less than that excavated from the other shovel tests. Admittedly, shovel tests are rather coarse measurements of buried deposits in that they are excavated in rough 20 cm levels, however, they do enable the archaeologist to quantify and assess the expected horizontal distribution of a site's buried components. This is valuable information when time is limited and the choice of where to locate excavation units can determine whether or not the maximum amount of information is recovered from the site. Based on the data gained from the shovel tests, we were able to locate subsequent excavation units in areas where we could expect to recover the most cultural debris. These were also areas where the potential of adverse impact from construction activities was high.

All test pits were excavated by hand. The northwest corner of each test pit was the control datum for each unit. Horizontal provenience of excavated items was measured by triangulation from the northwest corner. Vertical provenience was obtained by using a level line and metric tape to measure depth below the northwest corner datum of each unit. Additionally, vertical provenience was controlled and frequently checked by using a transit and stadia rod in conjunction with the established site datum (Fig. 5) which was arbitrarily referred to as 100 m above sea level. This arbitrary datum aided in comparing vertical levels from the different test pits.

Each unit was excavated by a combined natural and arbitrary level method. The natural strata at the Lost Peacock site (as has previously been described) were not well defined. Essentially most of the cultural debris (aside from surface material) was confined to Stratum 2. Stratum 1 consisted of the loose, unconsolidated topsoil. Stratum 3 was sterile clay. The topsoil was removed as one level (usually not exceeding 10 cm in depth). Stratum 2 was then excavated in 10 cm arbitrary levels. However, when features were encountered, this procedure was altered. We excavated 20 cm into Stratum 3, Test Pit 1, in order to be certain it was devoid of cultural debris.

Material Types

Stone used in prehistoric tool manufacturing from the Lost Peacock site was classified according to 10 categories. These types were inductively derived from archaeological specimens and have not been confirmed on the ground to

specific outcrop locations. Therefore, inference concerning material acquisition behavior based upon these material types should be viewed as provisional.

Many of these material varieties have either been intentionally or haphazardly exposed to heat. Some are of the waxy lustrous appearance that indicates intentional heat treatment; while other materials are brittle, pot lidded, and charred, perhaps as a result of burning. In some cases, characteristics of these materials were present which distinguish heated from unheated states. These characteristics are described below. In future research at this site it may be useful to conduct heat experiments with material type samples and further refine this tentative typology.

GRAY CHERT

Interior color: medium to dark gray

Luster: dull

Texture: moderately coarse grained

Inclusions: none

Cortex color: light gray to orangish gray

Cortex forms: very coarse and angular

Heat induced changes: color change to nearly black, damage in the form of fractures and pot lid spalling

YELLOW CHERT

Interior color: sometimes occurs in concentric bands, whitish yellow to caramel colored; commonly dusky yellow

Luster: moderate

Texture: very fine grained

Inclusions: none

Cortex color: reddish brown

Cortex forms: nodular-soft, rounded

Heat induced changes: color changes to an orange, surface has a waxy texture

BANDED TAN CHERT

Interior color: banded combinations of light tans and light browns

Luster: moderate

Texture: very fine grained

Inclusions: none

Cortex color: highly variable, grays, tans, light browns

Cortex forms: cobble; hard, smooth

Heat induced changes: unknown

PURPLE CHERT

Interior color: dark purple grading to a reddish purple

Luster: dull

Texture: very coarse grained

Inclusions: very fossiliferous

Cortex color: moderate to dark brown

Cortex forms: cobble; moderately hard, rounded

Heat induced changes: forms are heavily pot lidded and brittle

TAN CHERT

Interior color: medium brown to light tan

Luster: moderate to high

Textures: moderately fine grained to moderately coarse

Inclusions: rare fossils, some chalcedony "bird's eyes"

Cortex color: highly variable tans, dark browns, light browns

Cortex forms: hard smoothed cobble, some rare coarse angular forms

Heat induced changes: increased luster (becomes waxy), color changes to pink

DARK BROWN CHERT

Interior color: dark brown

Luster: moderate

Texture: moderately coarse

Inclusions: quartzite inclusions, sometimes so numerous material has a speckled appearance

Cortex color: cortex specimens rare, but generally tan in color

Cortex forms: sample too small to confidently identify

Heat induced changes: unknown

WHITE CHERT

Interior color: chalky white

Luster: high

Texture: very fine grained

Inclusions: none

Cortex color: unknown

Cortex forms: unknown

Heat induced changes: unknown

BLACK CHERT

Interior color: dark gray to black

Luster: moderate

Texture: moderately fine grained to moderately coarse grained

Inclusions: ferric specks; rare fossils

Cortex color: dark gray

Cortex forms: smooth rounded cobble

Heat induced changes: unknown

The Excavations

Six work areas, designated Test Pits 1 through 4, and Units A and B were excavated to various depths. Each work area is summarized in this section. Test Pits 1 through 4 were rectangular shaped, 1 m wide and 2 m long. Units A and B were 2 x 2 m squares. For exact location of these units see Figure 5.

TEST PIT 1

Level 1 (100.06-99.96 m)

Stratum 1

Sandstone count: 4 fragments
Sandstone weight: 3 grams

Fire-burned and fractured stone count: 19 fragments
Fire-burned and fractured stone weight: 111 grams

Umbo shell weight: absent
Bone: absent
Charcoal: absent

Total flake count: 96
Primary flake count: 26
Secondary flake count: 10
Interior flake count: 34
Chunks: 13

Flake Material Types:		
	Gray	18
	Yellow	0
	Banded tan	17
	Heat treated	6
	Purple	19
	Tan	19
	Dark brown	17
	White	0
	Black	0

Bifaces: 1 distal fragment of a projectile point

Bifacial thinning flakes: 11; representative percentage--11%

Utilized flakes: 0

Flakes with edge modification: 2

Discussion: Level 1 was excavated from Stratum 1, the loosely compacted topsoil layer. Some erosion and mixing of materials occurred in this level. These factors limit the discussion of this level. In terms of general observations, it may be more informative to compare these data with those of Units A and B, Level 1, as is shown in the Inter-Unit Level Comparisons section.

Level 2 (99.96-99.86 m)

Stratum 2

Sandstone count: 23 fragments
Sandstone weight: 240 grams

Fire-burned and fractured stone count: 19 fragments
Fire-burned and fractured stone weight: 364 grams

Umbo shell weight: 3 grams
Bone: absent
Charcoal: absent

Total flake count: 229
Primary flake count: 42
Secondary flake count: 37
Interior flake count: 94
Chunks: 18

Flake material types:		
	Gray	36
	Yellow	12
	Banded tan	23
	Banded gray	4
	Heat treated	18
	Purple	6
	Tan	96
	Dark brown	30
	White	0
	Black	0
	Miscellaneous	4

Bifaces: 0

Bifacial thinning flakes: 32; representative percentage--14%

Utilized flakes: 1

Flakes with edge modification: 0

Cores: 1 (exhausted core)

Level 3 (99.86-99.76 m)

Stratum 2

Sandstone count: 9 fragments
Sandstone weight: 360 grams

Fire-burned and fractured stone count: 30 fragments
Fire-burned and fractured stone weight: 1.4 kilograms

Umbo shell weight: 22 grams
Bone: absent
Charcoal: absent

Total flake count: 329
Primary flake count: 22

Secondary flake count: 41
Interior flake count: 171
Chunks: 10

Flake material types:		
	Gray	7
	Yellow	6
	Banded tan	35
	Banded gray	0
	Heat treated	65
	Purple	41
	Tan	140
	Dark brown	33
	White	0
	Black	0
	Miscellaneous	2

Bifaces: 0

Bifacial thinning flakes: 71; representative percentage--22%

Utilized flakes: 9

Level 4 (99.76-99.66 m)

Stratum 2

Sandstone count: 34 fragments
Sandstone weight: 311 grams

Fire-burned and fractured stone count: 34 fragments
Fire-burned and fractured stone weight: 755 grams

Umbo shell weight: 1 gram
Bone: absent
Charcoal: present

Total flake count: 212
Primary flake count: 34
Secondary flake count: 38
Interior flake count: 82
Chunks: 5

Flake material types:		
	Gray	56
	Yellow	10
	Banded tan	15
	Banded gray	0
	Heat treated	3
	Purple	20
	Tan	60
	Dark brown	45
	White	0
	Black	0
	Miscellaneous	0

Bifaces: 0

Bifacial thinning flakes: 45; representative percentage--21%

Utilized flakes: 2

Level 5 (99.66-99.56 m)

Stratum 2

Sandstone count: 31 fragments
Sandstone weight: 500 grams

Fire-burned and fractured stone count: 54 fragments
Fire-burned and fractured stone weight: 500 grams

Umbo shell weight: 5 grams
Bone: absent
Charcoal: present in flecks only

Total flake count: 223
Primary flake count: 50
Secondary flake count: 29
Interior flake count: 85
Chunks: 1

Flake material types:		
	Gray	55
	Yellow	12
	Banded tan	9
	Banded gray	3
	Heat treated	13
	Purple	37
	Tan	63
	Dark brown	31
	White	0
	Black	0
	Miscellaneous	0

Bifaces: 1 distal fragment of a *Pedernales* projectile point

Bifacial thinning flakes: 57; representative percentage--26%

Utilized flakes: 0

Flakes with edge modification: 1 steep angled combination end and side scraper (Fig. 8,a)

Discussion: This is the first level where a temporally diagnostic artifact was recovered. The *Pedernales* projectile point has Middle Archaic affiliations (3500/2000-1000 B.C.). The increased frequency of bifacial thinning flakes (26%) suggests that biface manufacture and/or maintenance was a common flintworking

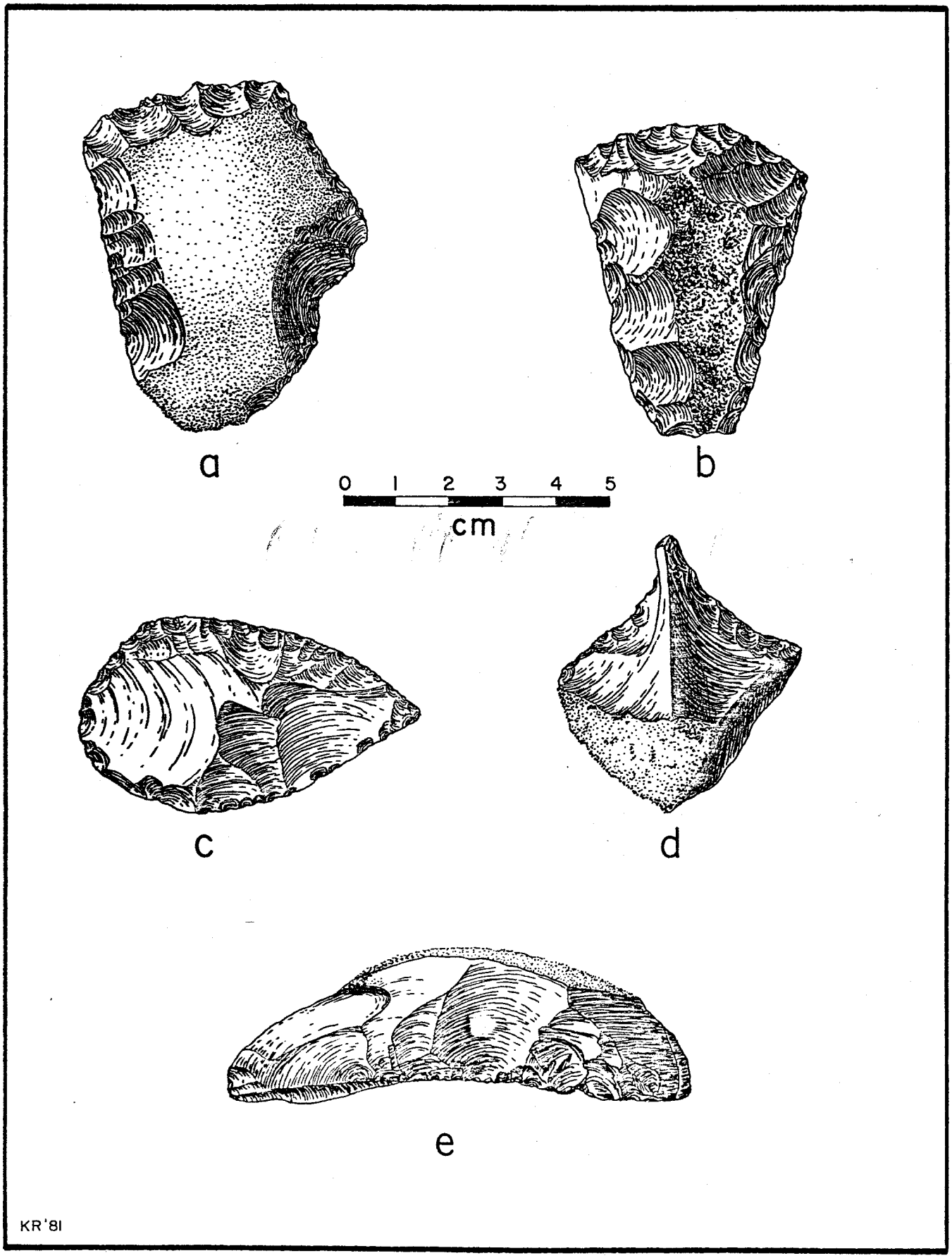


Figure 8. *Selected Tools from Excavations at the Lost Peacock Site.* a, scraper from Test Pit 1, Level 5; b, scraper from Unit A, Level 10; c, thin biface from Test Pit 1, Level 7; d, scraper/drill from Unit B, Level 5; e, chopper (edge view) from Unit B, Level 9.

activity. The edge damage evidence on the scraper suggests it had multifunctional (cutting and scraping) usage. In terms of frequency of flake material types, this level seems to have relationships with Level 4.

Level 6 (99.56-99.46 m)

Stratum 2

Sandstone count: 7 fragments
Sandstone weight: 111 grams

Fire-burned and fractured stone count: 61 fragments
Fire-burned and fractured stone weight: 511 grams

Umbo shell weight: 3 grams
Bone: absent
Charcoal: present; radiocarbon sample taken from bottom of level dated 2890 ± 150 B.P. MASCA corrected 1150 B.C. ± 220.

Total flake count: 162
Primary flake count: 30
Secondary flake count: 12
Interior flake count: 78
Chunks: 7

Flake material types:

Gray	24
Yellow	1
Banded tan	17
Banded gray	2
Heat treated	1
Purple	33
Tan	43
Dark brown	41
White	0
Black	0
Miscellaneous	1

Bifaces: 1 *Pedernales* projectile point base

Bifacial thinning flakes: 19; representative percentage--12%

Utilized flakes: 12

Flakes with edge modification: 1 cobble chopper

Discussion: The radiocarbon date was derived from a charcoal sample that was taken from the bottom of the floor of this level. The sample was obtained from charcoal chunks scattered throughout the floor and was not from a single well-defined feature. Considering that in Level 5 a *Pedernales* projectile point fragment was also found, it seems that this date is a little too recent based on our current conceptions of the Middle Archaic period. The problem with radiocarbon dates in this region of south Texas is discussed in the summary

of this report. The intensity of occupation and biface tool manufacturing and/or maintenance activities appears to be less in Level 6 than it was in Level 5. However, both levels would appear to date to the Middle Archaic period.

Level 7 (99.46-99.36 m)

Stratum 2

Sandstone count: 0
Sandstone weight: 0

Fire-burned and fractured stone count: 28 fragments
Fire-burned and fractured stone weight: 140 grams

Umbo shell weight: 24 grams
Bone: 2 fragments of unidentified bird bone
Charcoal: present

Total flake count: 212
Primary flake count: 13
Secondary flake count: 6
Interior flake count: 117
Chunks: 8

Flake material types:			
	Gray	55	
	Yellow	0	
	Banded tan	34	
	Banded gray	0	
	Heat treated	29	
	Purple	0	
	Tan	54	
	Dark brown	21	
	White	0	
	Black	0	
	Miscellaneous	19	(heavily burned)

Bifaces: 1 thin biface (Fig. 8,c), 1 Early Triangular biface (Fig. 8,b)

Bifacial thinning flakes: 64; representative percentage--30%

Utilized flakes: 3

Flakes with edge modification: 0

Hammerstones: 1

Discussion: The Early Triangular biface (Fig. 9,b) is alternately beveled and has Early Archaic period affinities (Hester 1980). The metric attributes of this artifact are as follows: length 40 mm; thickness 5 mm; distal width 9 mm (tip is missing); medial width 22 mm; basal width 27 mm.

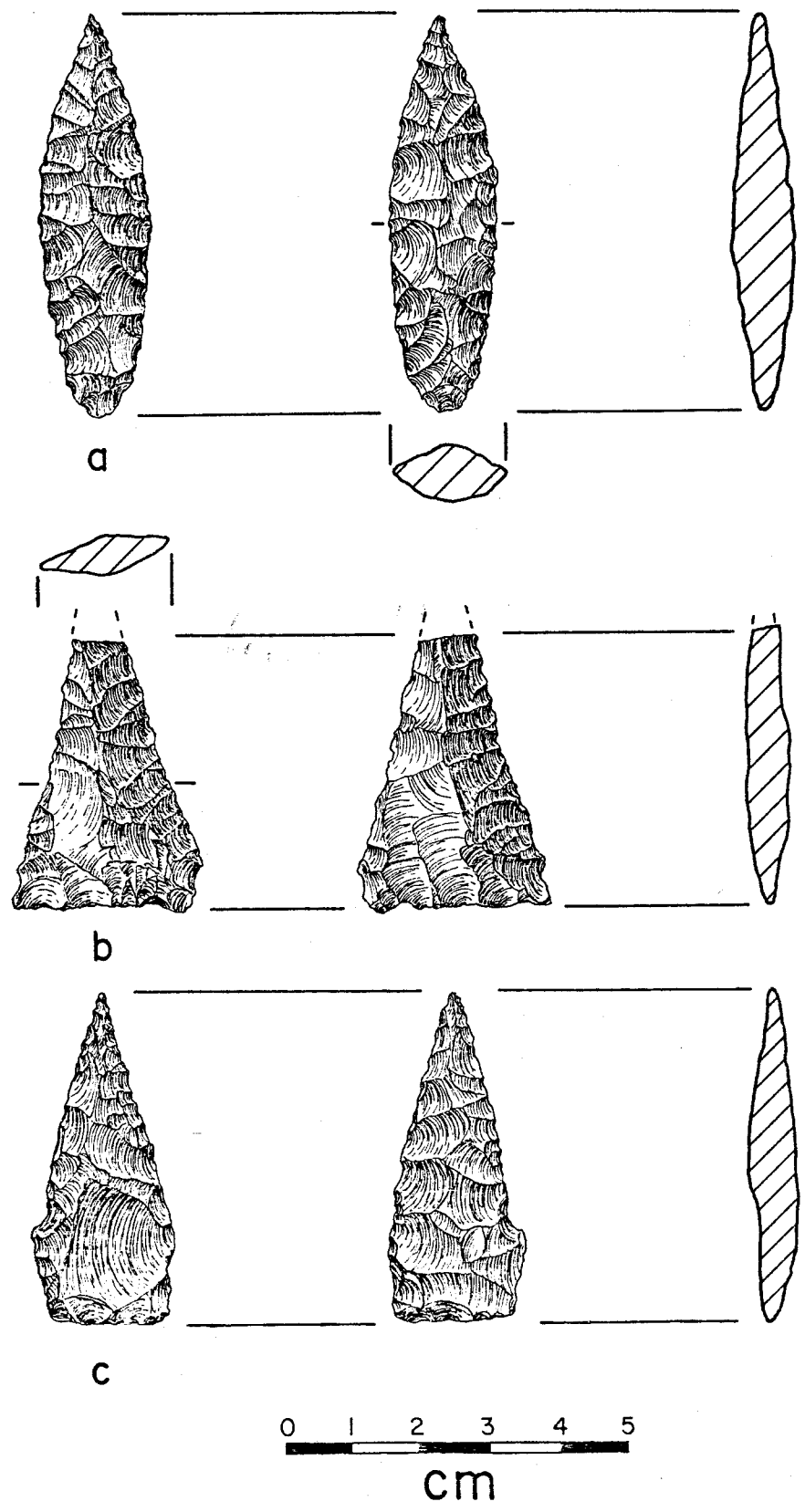


Figure 9. *Selected Artifacts From Early Components at the Lost Peacock Site.* a, *Lerma* projectile point from Test Pit 1, Level 8; b, Early Triangular biface from Test Pit 1, Level 7; c, unknown projectile point types from Unit A, Level 8.

There is some question concerning the function of these Early Triangular bifaces. Are they projectile points, knives, or both? This particular specimen shows edge damage indicative of use as a cutting tool (such as step fractures). However, this does not mean that it was not used also as a projectile point.

The increased amounts of umbo shells and the presence of bird bones probably reflect a change in soil conditions affecting preservation. However, the two recovered bifaces and the fact that 30 percent of the flakes are biface thinning flakes indicate that biface manufacturing and/or maintenance was a major flintworking activity in this Early Archaic period occupation. Furthermore, the frequency of flake material types suggests that this occupation has a more distinctive usage pattern than the Middle Archaic Levels 5 and 6.

Level 8 (99.36-99.26 m)

Stratum 2

Sandstone count: 0
Sandstone weight: 0

Fire-burned and fractured stone count: 26 fragments
Fire-burned and fractured stone weight: 170 grams

Umbo shell weight: 28 grams
Bone: 3 fragments of unidentifiable mammal bone
Charcoal: present in flecks only

Total flake count: 198
Primary flake count: 6
Secondary flake count: 12
Interior flake count: 110
Chunks: 0

Flake material types:

Gray	32
Yellow	0
Banded tan	20
Banded gray	0
Heat treated	17
Purple	0
Tan	83
Dark brown	46
White	0
Black	0
Miscellaneous	0

Bifaces: 1 *Lerma* projectile point (Fig. 9,a)

Bifacial thinning flakes: 63; representative percentage--32%

Utilized flakes: 6

Flakes with edge modification: 1

Discussion: As has been mentioned earlier in this report, *Lerma* projectile points have Late Paleo-Indian cultural historical associations. The specimen recovered in Level 8 was found *in situ* (Fig. 10). The metric attributes of this artifact are as follows: length 58 mm; thickness 7 mm; distal width 8 mm; medial width 16 mm; basal width 10 mm.

The sides of this specimen have been intentionally dulled, starting from the base and continuing along the side for approximately 10 mm. The flaking pattern is roughly parallel. The specimen fits into the *Lerma* type classification (Epstein 1980). It has been resharpened along the distal section and was probably somewhat longer at one time.

Level 9 (99.26-99.16 m)

Stratum 2

Sandstone count: 0
Sandstone weight: 0

Fire-burned and fractured stone count: 5 fragments
Fire-burned and fractured stone weight: 17 grams

Umbo shell weight: 2 grams
Bone: absent
Charcoal: present

Total flake count: 48
Primary flake count: 4
Secondary flake count: 2
Interior flake count: 25
Chunks: 0

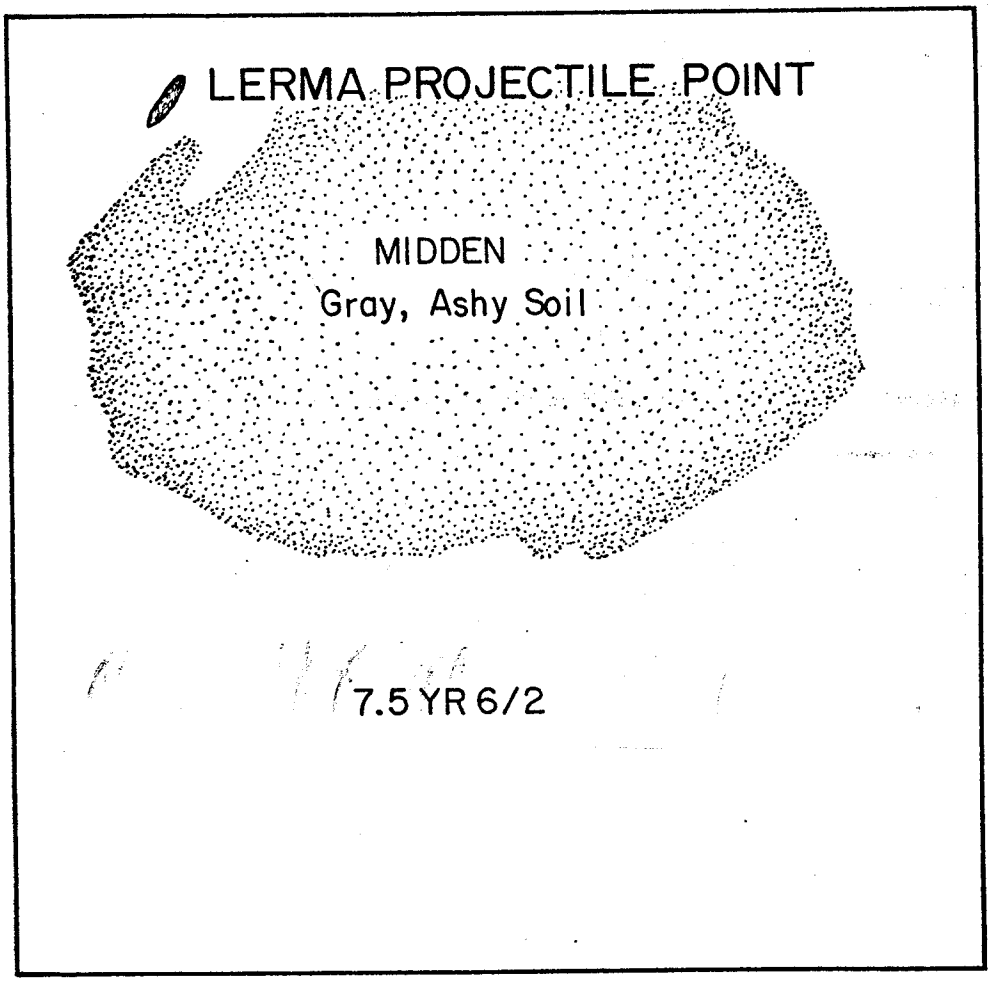
Flake material types:		
	Gray	6
	Yellow	0
	Banded tan	0
	Banded gray	0
	Heat treated	9
	Purple	0
	Tan	18
	Dark brown	12
	White	0
	Black	0
	Miscellaneous	3

Bifaces: 1 biface fragment (possibly distal fragment of *Lerma* point)

Bifacial thinning flakes: 16; representative percentage--33%

Utilized flakes: 0

Flakes with edge modification: 0



INTERNORTH PIPELINE PROJECT
LOST PEACOCK SITE - 41ZV263
Test Unit ,1, 70-80cm Level
Plan With Lerma Projectile Point, *In situ*

Figure 10. *Plan Map of in situ Location of Lerma Projectile Point, Test Pit 1.*

TEST PIT 2

Level 1 (99.86-99.76 m)

Stratum 2 (Stratum 1 was thin--less than 3 cm thick in Level 1)

Sandstone count: 20 fragments
Sandstone weight: 52 grams

Fire-burned and fractured stone count: 0
Fire-burned and fractured stone weight: 0

Umbo shell weight: 0
Bone: 0
Charcoal: absent

Total flake count: 36
Primary flake count: 0
Secondary flake count: 0
Interior flake count: 22
Chunks: 0

Flake material types:		
	Gray	0
	Yellow	9
	Banded tan	0
	Banded gray	0
	Heat treated	5
	Purple	0
	Tan	2
	Dark brown	14
	White	0
	Black	0
	Miscellaneous	5

Bifaces: 0

Bifacial thinning flakes: 8; representative percentage--22%

Utilized flakes: 6

Flakes with edge modification: 0

Level 2 (99.76-99.66 m)

Stratum 2

Sandstone count: 27 fragments
Sandstone weight: 95 grams

Fire-burned and fractured stone count: 24 fragments
Fire-burned and fractured stone weight: 150 grams

Umbo shell weight: 20 grams
Bone: absent
Charcoal: present

Total flake count: 688
Primary flake count: 40
Secondary flake count: 32
Interior flake count: 465
Chunks: 1

Flake material types:		
	Gray	50
	Yellow	7
	Banded tan	97
	Banded gray	82
	Heat treated	51
	Purple	69
	Tan	152
	Dark brown	55
	White	14
	Black	20
	Miscellaneous	31

Bifaces: 2 projectile point preforms; 1 distal projectile point fragment

Bifacial thinning flakes: 130; representative percentage--19%

Utilized flakes: 16

Flakes with edge modification: 1 combination end and side scraper; 1 modified uniface

Cores: 1 exhausted core

Level 3 (99.66-99.56 m)

Stratum 2

Sandstone count: 36 fragments
Sandstone weight: 450 grams

Fire-burned and fractured stone count: 8 fragments
Fire-burned and fractured stone weight: 60 grams

Umbo shell weight: 9 grams
Bone: 0
Charcoal: present

Total flake count: 245
Primary flake count: 12
Secondary flake count: 17
Interior flake count: 135
Chunks: 1

Flake material types:		
	Gray	15
	Yellow	0
	Banded tan	64
	Banded gray	10
	Heat treated	22
	Purple	20
	Tan	60
	Dark brown	54
	White	0
	Black	0
	Miscellaneous	0

Bifaces: 0

Bifacial thinning flakes: 7; representative percentage--31%

Utilized flakes: 2

Flakes with edge modification: 0

Level 4 (99.56-99.46 m)

Stratum 2

Sandstone count: 3 fragments
Sandstone weight: 60 grams

Fire-burned and fractured stone count: 3 fragments
Fire-burned and fractured stone weight: 40 grams

Umbo shell weight: 16 grams
Bone: 0
Charcoal: present

Total flake count: 277
Primary flake count: 1
Secondary flake count: 14
Interior flake count: 190
Chunks: 0

Flake material types:		
	Gray	22
	Yellow	28
	Banded tan	61
	Banded gray	0
	Heat treated	36
	Purple	0
	Tan	72
	Dark brown	40
	White	6
	Black	12
	Miscellaneous	0

Bifaces: 1 *Scallorn* projectile point (Fig. 11,a); 1 small, thin, ovoid biface (preform); 1 thin biface with scraper edge

Bifacial thinning flakes: 62; representative percentage--22%

Utilized flakes: 8

Flakes with edge modification: 0

Discussion: The metric attributes of the *Scallorn* projectile point are as follows: length 29 mm; thickness 2 mm; distal width 3 mm; medial width 9 mm; basal width 8 mm (at stem).

Level 5 (99.46-99.36 m)

Stratum 2

Sandstone count: 0
Sandstone weight: 0

Fire-burned and fractured stone count: 3 fragments
Fire-burned and fractured stone weight: 20 grams

Umbo shell weight: 7 grams
Bone: absent
Charcoal: present

Total flake count: 258
Primary flake count: 1
Secondary flake count: 10
Interior flake count: 170
Chunks: 5

Flake material types:		
	Gray	0
	Yellow	5
	Banded tan	62
	Banded gray	0
	Heat Treated	56
	Purple	0
	Tan	36
	Dark brown	72
	White	14
	Black	13
	Miscellaneous	0

Bifaces: 1 *Nolan* projectile point basal fragment broken in half

Bifacial thinning flakes: 69; representative percentage--27%

Utilized flakes: 7

Flakes with edge modification: 0

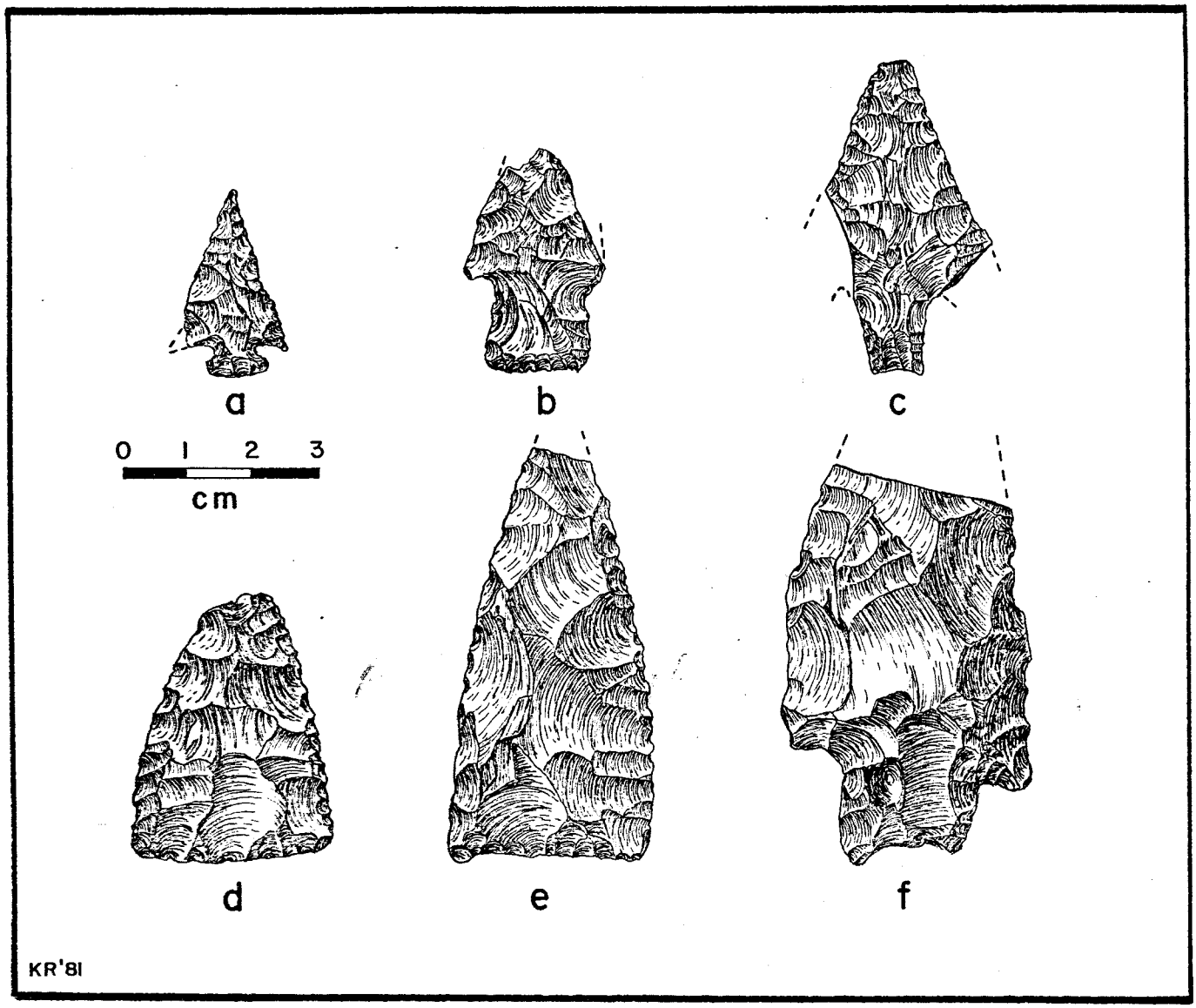


Figure 11. *Selected Projectile Points from Excavations at the Lost Peacock Site.* a, *Scallorn* projectile point from Test Pit 2, Level 4; b, unclassified projectile point type from Unit A, Level 5; c, *Langtry* projectile point from Unit B, Level 5; d, *Tortugas* projectile point from Unit B, Level 4; e, *Anthon* projectile point from Unit A, Level 2; f, *Pedernales* projectile point from Unit A, Level 4.

Cores: 1 exhausted core fragment
Manos: 1 mano fragment

Level 6 (99.36-99.26 m)

Stratum 2

Sandstone count: 0
Sandstone weight: 0

Fire-burned and fractured stone count: 7 fragments
Fire-burned and fractured stone weight: 85 grams

Umbo shell weight: 15 grams
Bone: absent
Charcoal: present

Total flake count: 226
Primary flake count: 3
Secondary flake count: 6
Interior flake count: 102
Chunks: 0

Flake material types:		
	Gray	0
	Yellow	0
	Banded tan	75
	Banded gray	0
	Heat treated	33
	Purple	0
	Tan	56
	Dark brown	62
	White	0
	Black	0
	Miscellaneous	0

Bifaces: 1 small leaf-shaped biface, not identified

Bifacial thinning flakes: 110; representative percentage--49%

Utilized flakes: 3

Flakes with edge modification: 0

Manos: 1 mano fragment

Level 7 (99.26-99.16 m)

Stratum 2

Sandstone count: 0
Sandstone weight: 0

Fire-burned and fractured stone count: 5 fragments
Fire-burned and fractured stone weight: 50 grams

Umbo shell weight: 20 grams
Bone: absent
Charcoal: present

Total flake count: 98
Primary flake count: 0
Secondary flake count: 3
Interior flake count: 52
Chunks: 0

Flake material types:		
	Gray	0
	Yellow	0
	Banded tan	0
	Banded gray	0
	Heat treated	18
	Purple	0
	Tan	44
	Dark brown	35
	White	0
	Black	0
	Miscellaneous	1

Bifaces: 1 large thick biface made of white chert

Bifacial thinning flakes: 38; representative percentage--39%

Utilized flakes: 2

Flakes with edge modificaiton: 0

Cores: 2 (1 not entirely used in contrast to most of the cores from this site)
1 core used also as a chopping tool

Discussion: In the southwest quadrant of this unit, we encountered an intense concentration of midden debris which was designated Feature 2. The feature consisted of a dense charcoal accumulation ca. 25 cm x 15 cm, with a scatter of tools (2 cores and 1 utilized flake), and river mussels (Umbo) around it. We took a sample for flotation and a carbon sample.

Level 8 (99.16-99.06 m)

Stratum 2

Sandstone count: 0
Sandstone weight: 0

Fire-burned and fractured stone count: 0
Fire-burned and fractured stone weight: 0

Umbo shell weight: 8 grams

Bone: absent
Charcoal: present

Total flake count: 64
Primary flake count: 1
Secondary flake count: 3
Interior flake count: 35
Chunks: 0

Flake material types:		
	Gray	19
	Yellow	4
	Banded tan	15
	Banded gray	0
	Heat treated	0
	Purple	1
	Tan	25
	Dark brown	0
	White	0
	Black	0
	Miscellaneous	2

Bifaces: 0

Bifacial thinning flakes: 20; representative percentage--31%

Utilized flakes: 5

Flakes with edge modification: 0

Discussion: Stratum 3 was encountered at 99.11 m and was excavated another 15 cm. As was the case in Test Pit 1, Stratum 3 was devoid of cultural material.

TEST PIT 3

Level 1 (99.86-99.76 m)

Stratum 2 (Stratum 1 was eroded in Level 1)

Sandstone count: 0
Sandstone weight: 0

Fire-burned and fractured stone count: 8 fragments
Fire-burned and fractured stone weight: 18 grams

Umbo shell weight: 0
Bone: absent
Charcoal: present

Total flake count: 169
Primary flake count: 1
Secondary flake count: 2

Interior flake count: 105
Chunks: 3

Flake material types:		
	Gray	9
	Yellow	0
	Banded tan	0
	Banded gray	64
	Heat treated	60
	Purple	0
	Tan	0
	Dark brown	27
	White	7
	Black	0
	Miscellaneous	2

Bifaces: 1 distal section of a projectile point

Bifacial thinning flakes: 49; representative percentage--29%

Utilized flakes: 6

Flakes with edge modification: 1

Level 2 (99.76-99.66 m)

Stratum 2

Sandstone count: 0
Sandstone weight: 0

Fire-burned and fractured stone count: 30 fragments
Fire-burned and fractured stone weight: 270 grams

Umbo shell weight: 14 grams
Bone: absent
Charcoal: present

Total flake count: 330
Primary flake count: 4
Secondary flake count: 16
Interior flake count: 189
Chunks: 0

Flake material types:		
	Gray	0
	Yellow	39
	Banded tan	77
	Banded gray	0
	Heat treated	79
	Purple	0
	Tan	28
	Dark brown	105
	White	0

Black	0
Miscellaneous	0

Bifaces: 1 small, burned triangular projectile point with a convex base (unclassifiable)

Bifacial thinning flakes: 107; representative percentage--32%

Utilized flakes: 12

Flakes with edge modification: 0

Level 3 (99.66-99.56 m)

Stratum 2

Sandstone count: 0
Sandstone weight: 0

Fire-burned and fractured stone count: 29 fragments
Fire-burned and fractured stone weight: 410 grams

Umbo shell weight: 12 grams
Bone: absent
Charcoal: present

Total flake count: 187
Primary flake count: 3
Secondary flake count: 12
Interior flake count: 96
Chunks: 0

Flake material types:

Gray	0
Yellow	5
Banded tan	69
Banded gray	0
Heat treated	53
Purple	0
Tan	28
Dark brown	30
White	3
Black	0
Miscellaneous	48 (burned flakes from Feature 1)

Bifaces: 0

Bifacial thinning flakes: 64; representative percentage--34%

Utilized flakes: 11

Flakes with edge modification: 1 scraper; modified on side and end

Cores: 1 large core (not totally used)

Discussion: Feature 1 (Fig. 12), a well-preserved hearth, was encountered at this level. A variety of samples was taken from the hearth center and the burned area around it including; carbon, soil, thermoluminescence, rock, and flotation.

Level 4 (99.56-99.46 m)

Stratum 2

Sandstone count: 13 fragments
Sandstone weight: 179 grams

Fire-burned and fractured stone count: 7 fragments
Fire-burned and fractured stone weight: 49 grams

Umbo shell weight: 0
Bone: absent
Charcoal: present

Total flake count: 55
Primary flake count: 0
Secondary flake count: 6
Interior flake count: 38
Chunks: 11

Flake material types:		
	Gray	5
	Yellow	2
	Banded tan	6
	Banded gray	0
	Heat treated	0
	Purple	3
	Tan	16
	Dark brown	21
	White	0
	Black	0
	Miscellaneous	2

Bifaces: absent

Bifacial thinning flakes: 0; representation percentage--0%

Utilized flakes: 0

Flakes with edge modification: 0

Discussion: Due to time constraints, only the north half of this unit was excavated.

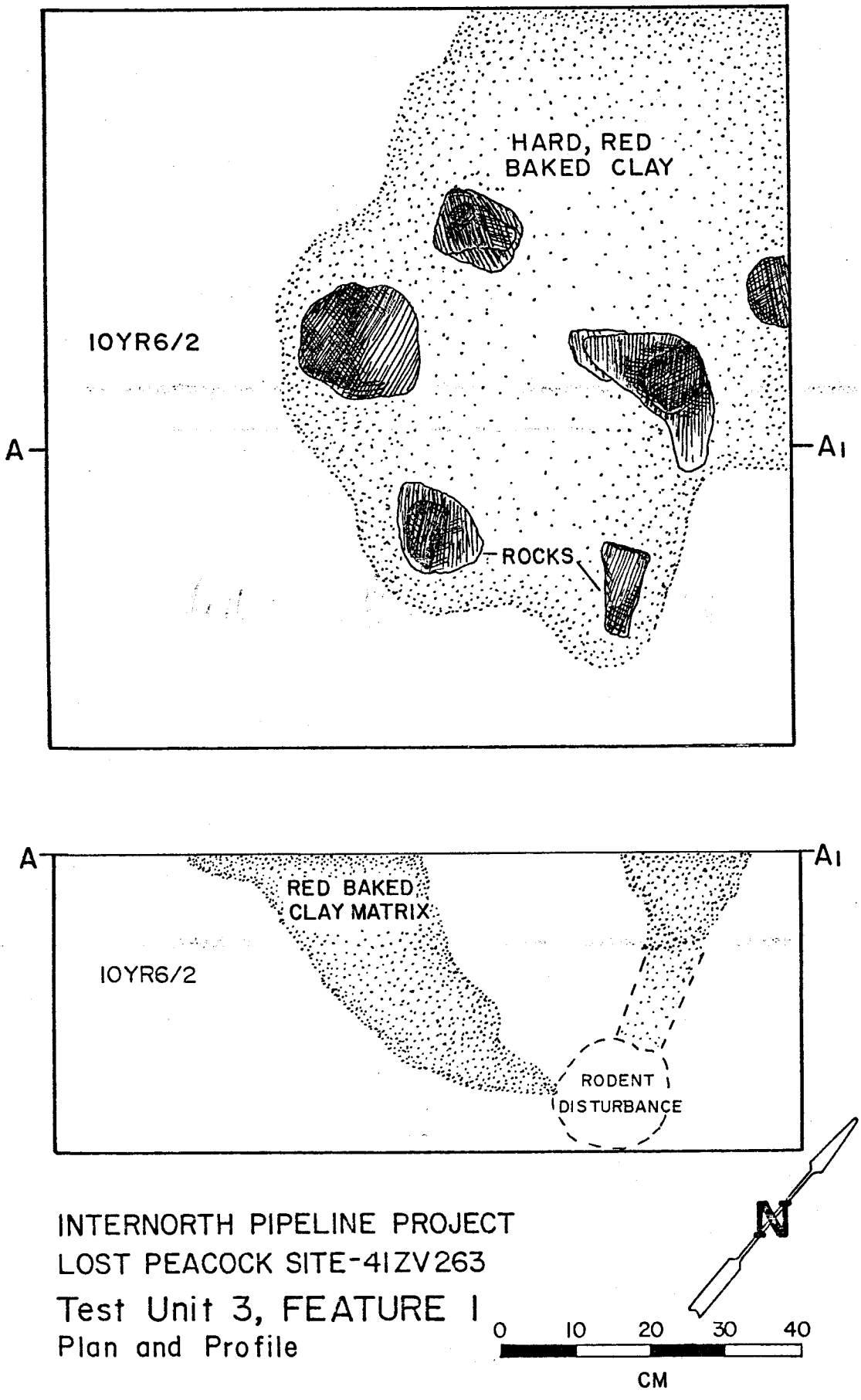


Figure 12. *Plan and Profile of Feature 1, Test Pit 3.*

TEST PIT 4

Level 1 (99.86-99.76 m)

Stratum 1 and 2 (99.86-99.82 m--Stratum 1)

Sandstone count: 0
Sandstone weight: 0

Fire-burned and fractured stone count: 21 fragments
Fire-burned and fractured stone weight: 128 grams

Umbo shell weight: 1 gram
Bone: absent
Charcoal: absent

Total flake count: 85
Primary flake count: 1
Secondary flake count: 16
Interior flake count: 68
Chunks: 0

Flake material types:		
	Gray	15
	Yellow	3
	Banded tan	5
	Banded gray	0
	Heat treated	3
	Purple	9
	Tan	25
	Dark brown	26
	White	0
	Black	0
	Miscellaneous	4

Bifaces: 0

Bifacial thinning flakes: 0; representative percentage--0%

Utilized flakes: 0

Flakes with edge modification: 0

Level 2 (99.76-99.66 m)

Stratum 2

Sandstone count: 0
Sandstone weight: 0

Fire-burned and fractured stone count: 5 fragments
Fire-burned and fractured stone weight: 130 grams

Umbo shell weight: 0
Bone: absent
Charcoal: absent

Total flake count: 143
Primary flake count: 22
Secondary flake count: 17
Interior flake count: 104
Chunks: 0

Flake material types:		
	Gray	17
	Yellow	1
	Banded tan	17
	Banded gray	0
	Heat treated	3
	Purple	13
	Tan	61
	Dark brown	24
	White	0
	Black	0
	Miscellaneous	7

Bifaces: 0

Bifacial thinning flakes: 0; representative percentage--0%

Utilized flakes: 0

Flakes with edge modification: 0

Level 3 (99.66-99.56 m)

Stratum 2

Sandstone count: 0
Sandstone weight: 0

Fire-burned and fractured stone count: 18 fragments
Fire-burned and fractured stone weight: 161 grams

Umbo shell weight: 1 gram
Bone: absent
Charcoal: absent

Total flake count: 179
Primary flake count: 17
Secondary flake count: 26
Interior flake count: 119
Chunks: 0

Flake material types:		
	Gray	14
	Yellow	6

Banded tan	18
Banded gray	1
Heat treated	15
Purple	13
Tan	68
Dark brown	44
White	0
Black	0
Miscellaneous	1

Bifaces: 0

Bifacial thinning flakes: 10; representative percentage--6%

Utilized flakes: 7

Flakes with edge modification: 0

Level 4 (99.56-99.46 m)

Stratum 2

Sandstone count: 0
Sandstone weight: 0

Fire-burned and fractured stone count: 4 fragments
Fire-burned and fractured stone weight: 118 grams

Umbo shell weight: 0
Bone: absent
Charcoal: present

Total flake count: 110
Primary flake count: 5
Secondary flake count: 9
Interior flake count: 73
Chunks: 10

Flake material types:

Gray	19
Yellow	3
Banded tan	9
Banded gray	0
Heat treated	3
Purple	9
Tan	31
Dark brown	21
White	0
Black	0
Miscellaneous	0

Bifaces: 0

Bifacial thinning flakes: 6; representative percentage--5%

Utilized flakes: 7

Flakes with edge modification: 0

Level 5 (99.46-99.36 m)

Stratum 2

Sandstone count: 0
Sandstone weight: 0

Fire-burned and fractured stone count: 2 fragments
Fire-burned and fractured stone weight: 39 grams

Umbo shell weight: 0
Bone: absent
Charcoal: absent

Total flake count: 66
Primary flake count: 0
Secondary flake count: 10
Interior flake count: 40
Chunks: 6

Flake material types:		
	Gray	6
	Yellow	6
	Banded tan	11
	Banded gray	0
	Heat treated	2
	Purple	2
	Tan	22
	Dark brown	15
	White	0
	Black	0
	Miscellaneous	2

Bifaces: 0

Bifacial thinning flakes: 10; representative percentage--15%

Utilized flakes: 0

Flakes with edge modification: 0

Discussion: Due to time limitations, only half of this unit was excavated.

UNIT A

Level 1 (100.06-99.96 m)

Stratum 1

Sandstone count: 0
Sandstone weight: 0

Fire-burned and fractured stone count: 0
Fire-burned and fractured stone weight: 0

Umbo shell weight: 1
Rabdotus Count: 9
Bone: Absent
Charcoal: Absent

Total flake count: 39
Primary flake count: 0
Secondary flake count: 4
Interior flake count: 21
Chunks: 7

Flake material types:		
	Gray	4
	Yellow	0
	Banded tan	9
	Banded gray	0
	Heat treated	2
	Purple	2
	Tan	8
	Dark Brown	14
	White	0
	Black	0
	Miscellaneous	0

Bifaces: 0

Bifacial thinning flakes: 7; representative percentage--18%

Utilized flakes: 0

Flakes with edge modification: 0

Level 2 (99.96-99.86)

Stratum 2

Sandstone count: 2 fragments
Sandstone weight: 68 grams

Fire-burned and fractured stone count: 168 fragments
Fire-burned and fractured stone weight: 2 kilograms

Umbo shell weight: 2 grams
Rabdotus count: 133
Bone: absent
Charcoal: present

Total flake count: 374
Primary flake count: 0
Secondary flake count: 45
Interior flake count: 244
Chunks: 0

Flake material types:		
	Gray	37
	Yellow	35
	Banded tan	18
	Banded gray	0
	Heat treated	38
	Purple	47
	Tan	107
	Dark brown	92
	White	0
	Black	0
	Miscellaneous	0

Bifaces: 1 *Anthon* projectile point (Fig. 11,e); 1 medial section of a projectile point (unclassifiable)

Bifacial thinning flakes: 81; representative percentage--22%

Utilized flakes: 4

Flakes with edge modification: 0

Discussion: The metric attributes of the *Anthon* projectile point are as follows: length 62 mm (tip missing); thickness 6 mm; distal width 20 mm; medial width 27 mm; basal width 29 mm.

Level 3 (99.86-99.76 m)

Stratum 2

Sandstone count: 8 fragments
Sandstone weight: 73 grams

Fire-burned and fractured stone count: 143 fragments
Fire-burned and fractured stone weight: 837 grams

Umbo shell weight: 2 grams
Rabdotus count: 66
Bone: absent
Charcoal: present

Total flake count: 245
Primary flake count: 18
Secondary flake count: 31
Interior flake count: 142
Chunks: 0

Flake material types:		
	Gray	37
	Yellow	23
	Banded tan	8
	Banded gray	2
	Heat treated	16
	Purple	21
	Tan	68
	Dark brown	40
	White	0
	Black	0
	Miscellaneous	7

Bifaces: 1 thin biface (preform)

Bifacial thinning flakes: 52; representative percentage--21%

Utilized flakes: 2

Flakes with edge modification: 0

Level 4 (99.76-99.66 m)

Stratum 2

Sandstone count: 4 fragments
Sandstone weight: 1 kilogram

Fire-burned and fractured stone count: 72 fragments
Fire-burned and fractured stone weight: 308 grams

Umbo shell weight: 1 gram
Rabdotus count: 53
Bone: absent
Charcoal: present

Total flake count: 90
Primary flake count: 13
Secondary flake count: 9
Interior flake count: 53
Chunks: 0

Flake material types:		
	Gray	0
	Yellow	5
	Banded tan	0
	Banded gray	0
	Heat treated	4

Purple	16
Tan	40
Dark brown	23
White	0
Black	1
Miscellaneous	1

Bifaces: 1 *Pedernales* projectile point (Fig. 11,f)

Bifacial thinning flakes: 13; representative percentage--14%

Utilized flakes: 2

Flakes with edge modification: 0

Discussion: The *Pedernales* artifact has some pot lid fractures and appears to have been burned. The metric attributes of this artifact are as follows: length incomplete; thickness 9 mm; distal width incomplete but at fracture 30 mm; medial width 36 mm; basal width 18 mm (at stem).

The radiocarbon sample (sample 1) submitted was taken from scattered pieces of charcoal in the unit floor. The date determined by Radiocarbon Ltd., of Lampassas, Texas, was A.D. 1040 ± 130. The author concludes this sample was somehow contaminated because relative dating of the artifacts found in this level indicate a Middle Archaic date (Table 7).

Level 5 (99.66-99.56 m)

Stratum 2

Sandstone count: 6 fragments
Sandstone weight: 300 grams

Fire-burned and fractured stone count: 15 fragments
Fire-burned and fractured stone weight: 710 grams

Umbo shell weight: 16 grams
Rabdotus count: 277
Bone: 2 fragments (deer radius bone)
Charcoal: present

Total flake count: 248
Primary flake count: 52
Secondary flake count: 35
Interior flake count: 139
Chunks: 5

Flake material types:	Gray	13
	Yellow	6
	Banded tan	38
	Banded gray	0

TABLE 7. COMPARISON OF RELATIVE DATE ASSIGNATIONS AND RADIOCARBON DATES BY ELEVATION*

Elevation	Relative Date	Radiocarbon Date
100.06-99.86	Late Prehistoric to Late Archaic	none submitted
99.76-99.66	Middle Archaic	Unit A: A.D. 1040 ± 130 years
99.56-99.46	Middle Archaic	TP1: 1150 B.C. ± 220 years
99.46-99.06	Early Archaic to Pre-Archaic to Paleo-Indian	Unit A (99.46-99.36): 560 B.C. ± 170 years

*Dates provided by Radiocarbon Ltd., Lampassas, Texas.)

Heat treated	32
Purple	4
Tan	71
Dark brown	68
White	0
Black	0
Miscellaneous	11

Bifaces: 1 unclassified corner notched, stemmed projectile point with a straight base, probably Middle Archaic (Fig. 11,b).

Bifacial thinning flakes: 11; representative percentage--4%

Utilized flakes: 6 (1 appears to have been used for boring or gouging a hard substance)

Flakes with edge modification: 1 end scraper

Discussion: The metric attributes of the unclassified projectile point are as follows: length incomplete; thickness 6 mm; distal width 10 mm (at fracture); medial width 19 mm; basal width 15 mm.

Level 6 (99.56-99.46 m)

Stratum 2

Sandstone count: 3 fragments
Sandstone weight: 280 grams

Fire-burned and fractured stone count: 29 fragments
Fire-burned and fractured stone weight: 1.6 kilograms

Umbo shell weight: 18 grams
Rabdotus count: 152
Bone: absent
Charcoal: present

Total flake count: 230
Primary flake count: 48
Secondary flake count: 28
Interior flake count: 121
Chunks: 4

Flake material types:		
	Gray	3
	Yellow	1
	Banded tan	63
	Banded gray	48
	Heat treated	39
	Purple	0
	Tan	27
	Dark brown	0

	White	0
	Black	0
	Miscellaneous	49 (heavily burned)

Bifaces: absent

Bifacial thinning flakes: 26; representative percentage--11%

Utilized flakes: 3

Flakes with edge modification: 0

Level 7 (99.46-99.36 m)

Stratum 2

Sandstone count: 5 fragments
Sandstone weight: 430 grams

Fire-burned and fractured stone count: 24 fragments
Fire-burned and fractured stone weight: 535 grams

Umbo shell weight: 15 grams
Rabdotus shell count: 270
Bone: absent
Charcoal: present

Total flake count: 348
Primary flake count: 27
Secondary flake count: 36
Interior flake count: 197
Chunks: 14

Flake material types:	Gray	17
	Yellow	10
	Banded tan	97
	Banded gray	21
	Heat treated	0
	Purple	0
	Tan	196
	Dark brown	0
	White	0
	Black	0
	Miscellaneous	7

Bifaces: 1 large thick biface

Bifacial thinning flakes: 62; representative percentage--18%

Utilized flakes: 10

Flakes with edge modification: 0

Discussion: A radiocarbon sample was taken from a concentration of charcoal found in this level. The date determined by Radiocarbon, Ltd., Lampassas, Texas, for this sample was 560 B.C. ± 170 years. Based on the relative dating of this level, the date should have been from at least the Early Archaic period (Tables 7, 8). Perhaps the sample in this level was from a carbonized root or was somehow contaminated.

Level 8 (99.36-99.26 m)

Stratum 2

Sandstone count: 2 fragments
Sandstone weight: 82 grams

Fire-burned and fractured stone count: 36 fragments
Fire-burned and fractured stone weight: 3.2 kilograms

Umbo shell weight: 0
Rabdotus shell count: 232
Bone: absent
Charcoal: present

Total flake count: 150
Primary flake count: 8
Secondary flake count: 11
Interior flake count: 115
Chunks: 0

Flake material types:		
	Gray	28
	Yellow	22
	Banded tan	0
	Banded gray	3
	Heat treated	12
	Purple	8
	Tan	62
	Dark brown	10
	White	1
	Black	0
	Miscellaneous	4

Bifaces: 1 shouldered projectile point (Fig. 9,c) resharpened along edges with a straight base (does not have type name)

Bifacial thinning flakes: 13; representative percentage--9%

Utilized flakes: 3

Flakes with edge modification: 0

Discussion: The unclassified projectile point from this level (Fig. 9,c) is from the same elevation as the *Lerma* projectile point (Fig. 9,a) recovered from

TABLE 8. DIAGNOSTIC ARTIFACTS FROM THE LOST PEACOCK SITE AND THEIR CULTURAL HISTORIC ASSOCIATION BY ELEVATION

Elevation	Diagnostic Artifacts	Unit	Cultural Historic Period Association*
100.06	1 *Scallorn* point	surface	Late Prehistoric
100.06	1 *Ensor* point	surface	Late Archaic to Late Prehistoric
100.06	2 *Frio* points	surface	Late Archaic
99.96-99.86	1 *Anthon* point	A	Late Archaic
99.86-99.76	none		(probably transitional)
99.76-99.66	1 *Tortugas* point 1 *Pedernales* point	B A	Middle Archaic Middle Archaic
99.66-99.56	1 *Langtry* point 1 *Pedernales* fragment	B TP1	Middle Archaic Middle Archaic
99.56-99.46	1 *Tortugas* point 1 *Scallorn* point 1 *Pedernales* point	B TP2 TP1	Middle Archaic Late Prehistoric Middle Archaic
99.46-99.36	1 Early Triangular biface 1 *Nolan* fragment	TP1 TP2	Pre-Archaic to Early Archaic Early Archaic
99.36-99.26	1 *Lerma* point	TP1	Paleo-Indian
99.26-99.16	none		
99.16-99.06	none		
99.06-98.96	none		

*from Hester 1980

Test Pit 1. Quite possibly this unclassified artifact also dates from the Paleo-Indian period. The metric attributes of this artifact are as follows: length 48 mm; thickness 4 mm; distal width 4 mm; medial width 15 mm; basal width 19 mm.

Level 9 (99.26-99.16 m)

Stratum 2

Sandstone count: 4 fragments
Sandstone weight: 390 grams

Fire-burned and fractured stone count: 12 fragments
Fire-burned and fractured stone weight: 150 grams

Umbo shell weight: 10 grams
Rabdotus shell count: 261
Bone: absent
Charcoal: present

Total flake count: 102
Primary flake count: 8
Secondary flake count: 11
Interior flake count: 66
Chunks: 1

Flake material types:		
	Gray	0
	Yellow	0
	Banded tan	6
	Banded gray	7
	Heat treated	5
	Purple	8
	Tan	69
	Dark brown	7
	White	0
	Black	0
	Miscellaneous	0

Bifaces: 0

Bifacial thinning flakes: 12; representative percentage--12%

Utilized flakes: 3

Flakes with edge modification: 0

Level 10 (99.16-99.06 m)

Stratum 2

Sandstone count: 1 fragment
Sandstone weight: 60 grams

Fire-burned and fractured stone count: 0
Fire-burned and fractured stone weight: 0

Umbo shell weight: 6 grams
Rabdotus shell count: 330
Bone: absent
Charcoal: present

Total flake count: 85
Primary flake count: 19
Secondary flake count: 13
Interior flake count: 39
Chunks: 0

Flake material types:		
	Gray	24
	Yellow	0
	Banded tan	22
	Banded gray	10
	Heat treated	0
	Purple	2
	Tan	27
	Dark brown	0
	White	0
	Black	0
	Miscellaneous	0

Bifaces: 0

Bifacial thinning flakes: 12; representative percentage--14%

Utilized flakes: 2

Flakes with edge modification: 1 combination end and side scraper with steep edge angle (Fig. 8,b)

UNIT B

Level 1 (100.06-99.96 m)

Stratum 1

Sandstone count: 0
Sandstone weight: 0

Fire-burned and fractured stone count: 6 fragments
Fire-burned and fractured stone weight: 145 grams

Umbo shell weight: 0
Bone: absent
Charcoal: absent

Total flake count: 62
Primary flake count: 8
Secondary flake count: 10
Interior flake count: 27
Chunks: 8

Flake material types:		
	Gray	10
	Yellow	3
	Banded tan	14
	Banded gray	0
	Heat treated	8
	Purple	3
	Tan	4
	Dark brown	19
	White	0
	Black	0
	Miscellaneous	1

Bifaces: 0

Bifacial thinning flakes: 7; representative percentage--11%

Utilized flakes: 2

Flakes with edge modification: 1 distinctive scraper with a drill bit

Level 2 (99.96-99.86 m)

Stratum 2

Sandstone count: 27 fragments
Sandstone weight: 360 grams

Fire-burned and fractured stone count: 208 fragments
Fire-burned and fractured stone weight: 1.7 kilograms

Umbo shell weight: 11 grams
Bone: absent
Charcoal: present

Total flake count: 278
Primary flake count: 24
Secondary flake count: 41
Interior flake count: 156
Chunks: 0

Flake material types:		
	Gray	45
	Yellow	10
	Banded tan	24
	Banded gray	0
	Heat treated	18

Purple	50
Tan	112
Dark brown	37
White	0
Black	0
Miscellaneous	2

Bifaces: 0

Bifacial thinning flakes: 54; representative percentage--19%

Utilized flakes: 2

Flakes with edge modification: 2 retouched unifaces; 1 discoid scraper

Level 3 (99.86-99.76 m)

Stratum 2

Sandstone count: 34 fragments
Sandstone weight: 512 grams

Fire-burned and fractured stone count: 47 fragments
Fire-burned and fractured stone weight: 470 grams

Umbo shell weight: 0
Bone: absent
Charcoal: present

Total flake count: 223
Primary flake count: 26
Secondary flake count: 36
Interior flake count: 123
Chunks: 3

Flake material types:

Gray	11
Yellow	0
Banded tan	69
Banded gray	22
Heat treated	41
Purple	11
Tan	44
Dark brown	18
White	0
Black	0
Miscellaneous	7

Bifaces: 1 thick biface (preform)

Bifacial thinning flakes: 32; representative percentage--14%

Utilized flakes: 3

Flakes with edge modification: 0

Level 4 (99.76-99.66 m)

Stratum 2

Sandstone count: 17 fragments
Sandstone weight: 563 grams

Fire-burned and fractured stone count: 105 fragments
Fire-burned and fractured stone weight: 1.5 kilograms

Umbo shell weight: 5 grams
Bone: absent
Charcoal: present

Total flake count: 138
Primary flake count: 0
Secondary flake count: 25
Interior flake count: 90
Chunks: 0

Flake material types:		
	Gray	0
	Yellow	10
	Banded tan	2
	Banded gray	3
	Heat treated	1
	Purple	13
	Tan	50
	Dark brown	27
	White	8
	Black	0
	Miscellaneous	29 (burned)

Bifaces: 1 *Tortugas* projectile point (Fig. 11,d)

Bifacial thinning flakes: 21; representative percentage--15%

Utilized flakes: 0

Flakes with edge modification: 1 steeply retouched uniface, probably used as a scraper

Discussion: The metric attributes of the *Tortugas* projectile point are as follows: length 39 mm (tip missing); thickness 5 mm; distal width 16 mm; medial width 25 mm; basal width 29 mm.

Level 5 (99.66-99.56 m)

Stratum 2

Sandstone count: 21 fragments
Sandstone weight: 1 kilogram

Fire-burned and fractured stone count: 191 fragments
Fire-burned and fractured stone weight: 1.3 kilograms

Umbo shell weight: 1 gram
Bone: absent
Charcoal: present

Total flake count: 237
Primary flake count: 24
Secondary flake count: 20
Interior flake count: 140
Chunks: 0

Flake material types:

Gray	14
Yellow	23
Banded tan	3
Banded gray	1
Heat treated	16
Purple	26
Tan	87
Dark brown	64
White	0
Black	0
Miscellaneous	0

Bifaces: 1 *Langtry* projectile point (Fig. 11,c); 1 reworked thin biface (probably used as a knife)

Bifacial thinning flakes: 48; representative percentage--20%

Utilized flakes: 4

Flakes with edge modification: 1 secondary cortex flake that has been modified into a scraper with a drill bit (Fig. 8,d)

Level 6 (99.56-99.46 m)

Stratum 2

Sandstone count: 10 fragments
Sandstone weight: 1.1 kilograms

Fire-burned and fractured stone count: 15 fragments
Fire-burned and fractured stone weight: 430 grams

Umbo shell weight: 19 grams
Bone: absent
Charcoal: present

Total flake count: 385
Primary flake count: 21
Secondary flake count: 22
Interior flake count: 279
Chunks: 0

Flake material types:		
	Gray	19
	Yellow	8
	Banded tan	58
	Banded gray	39
	Heat treated	57
	Purple	15
	Tan	97
	Dark brown	92
	White	0
	Black	0
	Miscellaneous	0

Bifaces: 1 *Tortugas* projectile point

Bifacial thinning flakes: 56; representative percentage--15%

Utilized flakes: 5

Flakes with edge modification: 2

Level 7 (99.46-99.36 m)

Stratum 2

Sandstone count: 10 fragments
Sandstone weight: 59 grams

Fire-burned and fractured stone count: 32 fragments
Fire-burned and fractured stone weight: 256 grams

Umbo shell weight: 10 grams
Bone: 4 fragments (possibly rabbit bone)
Charcoal: present

Total flake count: 90
Primary flake count: 9
Secondary flake count: 8
Interior flake count: 56
Chunks: 0

Flake material types:		
	Gray	14
	Yellow	14

Banded tan	1
Banded gray	1
Heat treated	11
Purple	6
Tan	24
Dark brown	19
White	0
Black	0
Miscellaneous	0

Bifaces: 1 thin biface proximal fragment (probably used as a knife)

Bifacial thinning flakes: 16; representative percentage--18%

Utilized flakes: 0

Flakes with edge modification: 0

Level 8 (99.36-99.26 m)

Stratum 2

Sandstone count: 2 fragments
Sandstone weight: 380 grams

Fire-burned and fractured stone count: 18 fragments
Fire-burned and fractured stone weight: 345 grams

Umbo shell weight: 0
Bone: absent
Charcoal: present

Total flake count: 103
Primary flake count: 17
Secondary flake count: 13
Interior flake count: 63
Chunks: 3

Flake material types:		
	Gray	21
	Yellow	0
	Banded tan	36
	Banded gray	0
	Heat treated	26
	Purple	0
	Tan	20
	Dark brown	0
	White	0
	Black	0
	Miscellaneous	0

Bifaces: 0

Bifacial thinning flakes: 6; representative percentage--6%

Utilized flakes: 0

Flakes with edge modification: 1 retouched uniface

Level 9 (99.26-99.16 m)

Stratum 2

Sandstone count: 0
Sandstone weight: 0

Fire-burned and fractured stone count: 5 fragments
Fire-burned and fractured stone weight: 110 grams

Umbo shell weight: 1 gram
Bone: absent
Charcoal: present

Total flake count: 36
Primary flake count: 12
Secondary flake count: 5
Interior flake count: 13
Chunks: 2

Flake material types:		
	Gray	0
	Yellow	12
	Banded tan	0
	Banded gray	0
	Heat treated	0
	Purple	4
	Tan	12
	Dark brown	8
	White	0
	Black	0
	Miscellaneous	0

Bifaces: 0

Bifacial thinning flakes: 1; representative percentage--3%

Utilized flakes: 2

Flakes with edge modification: 1 side scraper; 1 cobble chopper with secondary cortex surface (Fig. 8,e)

Level 10 (99.16-99.06 m)

Stratum 2

Sandstone count: 3 fragments

Sandstone weight: 190 grams

Fire-burned and fractured stone count: 0
Fire-burned and fractured stone weight: 0

Umbo shell weight: 12 grams
Bone: absent
Charcoal: present

Total flake count: 41
Primary flake count: 3
Secondary flake count: 17
Interior flake count: 20
Chunks: 0

Flake material types:		
	Gray	4
	Yellow	0
	Banded tan	1
	Banded gray	0
	Heat treated	5
	Purple	0
	Tan	7
	Dark brown	23
	White	0
	Black	0
	Miscellaneous	1

Bifaces: 0

Bifacial thinning flakes: 0; representative percentage--0%

Utilized flakes: 1

Flakes with edge modification: 0

Level 11 (99.06-98.96 m)

Stratum 3

Sandstone count: 0
Sandstone weight: 0

Fire-burned and fractured stone count: 0
Fire-burned and fractured stone weight: 0

Umbo shell weight: 0
Bone: absent
Charcoal: present

Total flake count: 12
Primary flake count: 0
Secondary flake count: 7

Interior flake count: 4
Chunks: 1

Flake material types:		
	Gray	2
	Yellow	0
	Banded tan	0
	Banded gray	0
	Heat treated	0
	Purple	0
	Tan	2
	Dark brown	7
	White	0
	Black	0
	Miscellaneous	1

Bifaces: 0

Bifacial thinning flakes: 0; representative percentage--0%

Utilized flakes: 0

Flakes with edge modification: 0

Discussion: Only the southeast quadrant of this level excavated 1 x 1 m.

Inter-Unit Level Comparisons

This section presents comparisons of the various levels excavated and described in the preceding section. Certain considerations of the units must be pointed out prior to this discussion. Since the level numbers refer to different elevations in different units, the exact elevations will be used here. Also, from elevation 100.06-99.86 m, only Test Pit 1 and Units A and B have excavated cultural material. The other units were lower and excavations begin in Test Pits 2-4 at elevation 99.86 m. Furthermore, Test Pit 3's excavation was halted at 99.46 m and only the northern half of the unit was excavated due to time constraints. A similar situation developed in Test Pit 4, which was excavated to a depth of 99.36 m in the eastern half and 99.46 m in the western half before time ran out. Test Pit 1 was completed at 99.16 m and Test Pit 2 at 99.06 m. Unit A was also completed at 99.06 m at the top of Stratum 3. However, the southeastern quadrant of Unit B was excavated another 10 cm because we were still finding sparse cultural debris in the transition zone, between Stratums 2 and 3.

This discussion is limited to the excavated portions of the site. Other, perhaps very different, patterns may be present in the unexcavated portion. Another consideration when comparing these units is their relative size. Test Pits 1-4 were 1 x 4 m and Units A and B were measured 2 x 2 m. This size consideration is particularly important in comparing volume and frequency of the cultural material categories.

Diagnostic artifacts that have been recovered and dated radiocarbon from other sites in Texas provide a means for ascertaining the cultural historic periods

represented at the Lost Peacock site. These data are summarized in Table 8. The entire prehistoric sequence is represented at the site starting with the Paleo-Indian and ending with the Late Prehistoric period. One projectile point, the *Scallorn* specimen recovered from elevation 99.56-99.46 m in Test Pit 2, appears to be out of place in what otherwise looks to be conclusively a Middle Archaic level. Since the *Scallorn* specimen was recovered in the screen, it is possible that it fell out of the unit wall from a higher elevation or had been displaced downward by root or rodent disturbances. Displacement and/or contamination is also a possibility suggested by the radiocarbon dates determined from the samples submitted (Table 7). The artifacts recovered from elevations 99.76-99.46 m indicate these levels to be Middle Archaic in age. The artifacts from elevation 99.46-99.36 m indicate that this level dates to the Pre-Archaic. However, the radiocarbon dates obtained for the Middle Archaic levels range from 1150 B.C. ± 220 (sample 3, Test Pit 1, 99.56-99.46 m) to A.D. 1040 ± 130 (sample 1, Unit A, 99.76-99.66 m), and the Pre-Archaic level (sample 2, Unit A, 99.46-99.36 m) sample date is 560 B.C. ± 170. The obvious conclusion is that somehow the samples have been contaminated. Archaeological research at Chaparrosa Ranch encountered similar chronometric dating problems (Hester 1978:42). Therefore, in discussing the cultural history of the Lost Peacock site, the relative dates will be used.

In summary, the upper 20 cm of the site (100.06-99.86 m) dates from the Late Archaic to the Late Prehistoric periods. Elevation 99.86-99.76 m is indeterminate in date, but is probably transitional between the Middle and Late Archaic periods. From elevation 99.76-99.46 m, the large sample of diagnostic artifacts strongly indicate Middle Archaic occupations. Pre-Archaic to Early Archaic affinities are indicated for elevation 99.46-99.36 m with the occurrence of the *Nolan* fragment and the Early Triangular biface. The *Lerma* projectile point was recovered *in situ* at an elevation of 99.31 m, which suggests that 99.36-99.26 m dates to the Paleo-Indian period. Future excavations at the site may recover other evidence of Paleo-Indian occupations because cultural material was found for another 30 cm below the *Lerma* artifact, which suggests a frequent occupation of the site by Paleo-Indian bands.

LATE ARCHAIC TO LATE PREHISTORIC (Levels 100.06-99.86 m)

Table 9 shows that the total weight of fire-burned and fractured stone for these upper levels is higher than any of the lower levels. This could indicate greater intensity of occupation during the Late Archaic and Late Prehistoric periods. The total flake count depicted in Table 10 further supports this interpretation, particularly when one considers that these data are derived from only three units; Test Pit 1, Unit A, and Unit B. The tan and dark brown chert types were most frequently used during this period as is shown in Table 11. Though the Umbo shell weight is lower in these levels than in any of the others, this may be due to poor preservation and it is likely that river mussels were an important food resource.

Primary flakes and chunks are more numerous in these levels of Test Pit 1 than in Units A and B (Table 12). Apparently, initial reduction of nodules occurred with the highest frequency of anywhere in the excavated portions of the site in the vicinity of Test Pit 1. This emphasis on initial reduction of raw material

TABLE 9. FIRE-BURNED AND FRACTURED STONE COUNT AND WEIGHT BY ELEVATION

Elevation	Test Pits 1-4 Count	Test Pits 1-4 Weight	Units A & B Count	Units A & B Weight	Total Count	Total Weight
100.06-99.96	19	111 gm	6	145 gm	25	256 gm
99.96-99.86	19	1.59 kg	376	2.36 kg	395	3.94 kg
99.86-99.76	59	1.55 kg	190	1.3 kg	249	2.85 kg
99.76-99.66	93	806 gm	177	1.56 kg	270	2.36 kg
99.66-99.56	109	1.13 kg	206	1.3 kg	315	2.43 kg
99.56-99.46	75	718 gm	44	2.03 kg	119	2.72 kg
99.46-99.36	33	199 gm	56	791 gm	89	990 gm
99.36-99.26	33*	255* gm	54	3.54 kg	87	3.79 kg
99.26-99.16	10*	67* gm	17	260 gm	27	327 gm
99.16-99.06	0*	0* gm	0	0 gm	0	0 gm
99.06-98.96		gm	0	0 gm	0	0 gm

*Test Pits 1 and 2 only

TABLE 10. FLAKE COUNT BY ELEVATION

Elevation	Test Pits 1-4	Units A & B	Total
100.06-99.96	96	101	197
99.96-99.86	229	652	881
99.86-99.76	619	468	1087
99.76-99.66	1373	228	1601
99.66-99.56	834	485	1319
99.56-99.46	604	615	1219
99.46-99.36	536	438	974
99.36-99.26	424*	253	677
99.26-99.16	146*	138	284
99.16-99.06	64†	126	190
99.06-98.96	0*	12¶	12

*Test Pits 1 and 2 only
†Test Pit 2 only
¶SE Quad of Unit B only

TABLE 11. FREQUENCY (%) OF FLAKE MATERIAL TYPES BY ELEVATION

Elevation	Gray	Yellow	Banded Tan	Banded Gray	Heat-Treated	Purple	Tan	Dark Brown	White	Black	Misc.	Comments
100.06-99.96	16	2	20	0	8	12	16	25	0	0	0.5	
99.96-99.86	13	7	7	0.5	8	12	36	16	0	0	0.7	
99.86-99.76	7	4	11	8	17	8	26	17	0	0	2	
99.76-99.66	8	4	13	5	9	8	24	12	0.4	1	4	misc. were mostly burned
99.66-99.56	8	4	15	1	11	8	29	22	0.2	0	2	misc. were burned
99.56-99.46	8	3.5	18	7	11	5	23	18	0.5	1	4	misc. were heavily burned
99.46-99.36	9.4	3.6	21	2	10	0.8	34	10	1	1	2.2	misc. were burned
99.36-99.26	12	3	19	0.4	13	1	33	17	0.1	0	0.6	
99.26-99.16	2 1	4.2	2	2.4	11	4.2	50	22	0	0	1.4	
99.16-99.06	25	0.02	20	5.2	3	2	30	12	0	0	1.5	
99.06-98.96	sample size too small											

TABLE 12. FREQUENCY (%) OF FLAKE TYPES BY ELEVATION

Elevation	PRIMARY		SECONDARY		INTERIOR		CHUNKS		BIFACE THINNING	
	Test Pits 1-4	Units A&B	Test Pits 1-4	Units A&B	Test Pits 1-4	Units A&B	Test Pits 1-4	Units A&B	Test Pits 1-4	Units A&B
100.06-99.96	27	8	10.4	14	35.4	48	14	15	11	15
99.96-99.86	18.3	3.6	16	13.2	41	61.3	8	0	14	21
99.86-99.76	4	9.4	9.5	14.3	59	57	2	0.5	21	18
99.76-99.66	7.2	6	7.5	15	61	63	0.4	0	20.5	15
99.66-99.56	10	16	10	11	52	58	0.2	1	27.5	14
99.56-99.46	6	11	7	8	63	65	5	0	19	16
99.46-99.36	3	8.2	5	10	61	58	4	3	27	18
99.36-99.26	2*	10	4*	9	50*	70	0*	1	41*	8
99.26-99.16	3*	14	3.4*	12	53*	57	0*	2.1	37*	9.4
99.16-99.06	2†	17.4	5†	24	54.6†	47	0†	0	31†	10
99.06-98.96	sample size too small									

*Test Pits 1 and 2 only
†Test Pit 2 only

is one of the distinctive characteristics of the Late Archaic and Late Prehistoric occupations. The higher number of primary flakes suggests a different pattern of flintworking behavior in these levels. Perhaps in the lower earlier levels, initial reduction (or removal of cortex) occurred elsewhere while in the Late Prehistoric period the removal of cortex flakes was often conducted at the site. The percentages of biface thinning flakes depicted in Table 13 shows that biface manufacturing and/or maintenance was also an important activity during the Late Archaic and Late Prehistoric occupations. However, it seems that biface thinning occurred more frequently in some of the other levels.

The low numbers of utilized flakes and flakes with edge modification suggests that typical hunting activities, such as butchering of meat and processing food resources, occurred less during the Late Prehistoric occupations (Table 13). Therefore, one interpretation that could be made is that the site's functional emphasis was more on flintworking than hunting activities during the Late Archaic and Late Prehistoric periods. Perhaps this area of the site was a flintworking activity location that was used frequently.

TRANSITIONAL MIDDLE TO LATE ARCHAIC (?) (Levels 99.86-99.76 m)

As in the example of the two preceding levels, this segment exhibits evidence of intense occupation (Table 9). A total fire-burned and fractured stone weight of 2.85 kg is one of the highest amounts for any excavated 10-cm level. Combining these data with those of Table 10, which shows a total flake count of 1087, is clear evidence of intense occupation (either frequent, seasonal or both).

Table 11 shows a different pattern in the frequency of flake material types, however. Most noticeable is the 17 percent frequency of heat-treated flakes. Heat treatment was apparently practiced more in this period than in any other. Again, as in the upper two levels, tan and dark brown cherts show the greatest evidence of usage. But there are significant increases in other chert types such as banded tan and banded gray.

Considering river mussel exploitation, significant amounts were recovered from this level, but over 90 percent of the Umbo shell came from Test Pits 1 through 4. Perhaps this suggests a locational emphasis on discarding behavior and subsequent midden accumulation, but it could also reflect differential preservation factors present in the soil.

In Table 12, a different pattern of flake types is represented than that of the upper two levels. Particularly, in the area of Test Pits 1 through 4 there is a decrease in primary cortex flakes and chunks. However, there is not a significant increase in biface thinning flakes. As mentioned earlier, this indicates that initial reduction of nodules (removal of cortex flakes) occurred outside of the excavated portion of the site during the time interval represented in this level. Perhaps the acquisition of chert nodules and subsequent decortication occurred at another site nearby. In summary, the data in Table 12 for this level represents the kinds of flintworking frequencies one would expect for a residential base camp; primary and secondary trimming of tools as well as refurbishing (Collins 1975a).

TABLE 13. FREQUENCY OF UTILIZED FLAKES AND FLAKES WITH EDGE MODIFICATION, BY ELEVATION

Elevation	Test Pits 1-4			Units A & B			TOTAL ALL UNITS
	Utilized	Edge Modified	Total	Utilized	Edge Modified	Total	
100.06-99.96	0	2	2	2	1	3	5
99.96-99.86	1	0	1	6	3	9	10
99.86-99.76	21	2	23	5	0	5	28
99.76-99.66	30	3	33	2	1	3	36
99.66-99.56	20	2	22	10	1	11	33
99.56-99.46	27	1	28	8	2	10	38
99.46-99.36	10	0	10	10	0	10	20
99.36-99.26	9*	1*	10*	3	1	4	14
99.26-99.16	2*	0*	2*	5	2	7	9
99.16-99.06	5†	0†	5†	3	1	4	9
99.06-98.96	unexcavated----------			0¶	0¶	0¶	0

*Test Pits 1 and 2 only
†Test Pit 2 only
¶SE Quad of Unit B only

Further evidence of a different site function at this elevation (that of a residential base camp) is depicted in Table 13. There is a distinctive increase in the number of utilized flakes, particularly from Test Pits 1 through 4. Again, as in the case of the distribution of Umbo shell for this level, the distribution of utilized flakes may be indicative of an intrasite pattern of activities such as tool use and discard occurring more frequently in this portion of the site.

Finally, in considering the *Rabdotus* (land snail) count for this level as gathered from Unit A, the apparent decrease may further support the interpretation that this arbitrary level does indeed have a distinctive character. This decrease may be evidence of different climatic factors prevalent at the time of occupation than those in the upper two levels.

MIDDLE ARCHAIC (Level 99.76-99.66 m)

As implied in the above paragraph, one of the fundamental questions of analysis when a site is excavated by arbitrary levels is, do they represent different periods or patterns of occupation in reality? Though it has not been considered in the preceding level discussions, because other evidence was more conclusive, the data in Table 14 indicate this level's separateness from those above it.

The problem with sandstone at the site is distinguishing naturally deposited from culturally deposited sandstone. When sandstone is present as part of a feature, its cultural context is obvious (for example, Feature 1). But when it is excavated from the floor of a test pit and has no apparent cultural function, it poses an analytical problem. For example, perhaps some of the sandstone had functioned as weights for a small temporary windbreak or shelter and after such a cultural function they were displaced. If those stones were not part of a discernible architectural feature, the archaeologist cannot identify them as artifacts. Of course, this is often a problem because not all behavior patterns result in a patterned material culture, and of those which do, all patterns will not be preserved (Collins 1975b:29). Since this is a known analytical problem, we attempted to recognize different patterns of sandstone usage by counting them and weighing them in each excavated level so that some generalized distinctions could be made.

One such distinction is present for Level 99.76-99.66 m in Table 14. There is a significant difference in the count and weight of sandstone for this level in comparison to the preceding level. The inference can be made that this is due partially to cultural factors. The precise factors remain problematic. Other data, however, do not show a clear distinction from the pattern represented in the preceding level. For example, the frequency of fire-burned and fractured rock (Table 9), *Rabdotus* shell (Table 15), or utilized and edge-modified flakes (Table 10) do not differ significantly from those of 99.86-99.76 m.

However, the total flake count for Level 99.76-99.66 m is 1601 flakes, which is by far the highest amount of flakes found in any level.

TABLE 14. SANDSTONE COUNT AND WEIGHT BY ELEVATION

Elevation	Test Pits 1-4 Count	Test Pits 1-4 Weight	Units A & B Count	Units A & B Weight	Total Count	Total Weight
100.06-99.96	4	3 gm	0	0 gm	4	3 gm
99.96-99.86	23*	240 gm*	29	2.36 gm	52	2.6 kg
99.86-99.76	29	412 gm	42	585 gm	71	997 gm
99.76-99.66	61	1.098 kg	21	871 gm	82	1.97 kg
99.66-99.56	67	950 gm	27	1.3 kg	94	2.25 kg
99.56-99.46	23	350 gm	13	1.38 kg	36	1.7 kg
99.46-99.36	0	0 gm	15	489 gm	15	489 gm
99.36-99.26	0	0+ gm	4	462 gm	4	462 gm
99.26-99.16	0	0+ gm	4	390 gm	4	390 gm
99.16-99.06	0	0+ gm	4	250 gm	4	250 gm
99.06-98.96		gm	0	0 gm	0	0 gm

*Test Pit 1 only
+Test Pits 1 and 2 only

TABLE 15. *RABDOTUS* SHELL COUNT FROM CONTROL UNIT A BY ELEVATION

Elevation	Total Count
100.06-99.96	9
99.96-99.86	133
99.86-99.76	66
99.76-99.66	53
99.66-99.56	277
99.56-99.46	152
99.46-99.36	270
99.36-99.26	232
99.26-99.16	261
99.16-99.06	330

Also, as evidenced in Table 11, there is a slight difference in chert utilization. For the first time, white and black chert types are represented. Another difference is that four percent of all of the flakes were badly burned. In this level banded tan is the second most common chert after tan, with dark brown exhibiting a five percent decrease in frequency. Heat treatment of chert appears to be a less common activity than in the preceding level.

Table 16 shows that the exploitation of river mussels is an important activity and there is a slight increase in Umbo shell weight over that of the previous level. Similar to the pattern represented in Level 99.86-99.76 m is the fact that the majority of the Umbo shells come from Test Pits 1 through 4 in Level 99.76-99.66 m.

In terms of flintknapping behavior, there is no significant difference between the distribution of flake types in Level 99.76-99.66 m in comparison to the preceding level. Primary flake removal is not a common activity. Overall, the patterns are very similar and are indicative of the variety of lithic technological activities one would expect at a residential base camp.

MIDDLE ARCHAIC (Level 99.66-99.56 m)

The amounts of sandstone and fire-burned and fractured stone are very similar in Levels 99.76-99.66 m and 99.66-99.56 m. Probably the kind and intensity of occupations were also similar.

However, as shown in Table 15, the frequency of *Rabdotus* shells increases dramatically in this level; from 53 to 377 shells. This may indicate different climatic factors. Perhaps it was more moist during the 99.66-99.56 m occupation and this affected the availability of *Rabdotus* as a potential food resource.

The second highest amount of total flakes, 1319, aslo comes from 99.66-99.56 m. The majority of these flakes come from Test Pits 1 through 4 (Table 10) which was also the pattern in the preceding level.

Table 11 shows the pattern of chert types used has changed only slightly from the preceding level with tan, dark brown, and banded tan types, in that order, being used most frequently. There is a slight increase in the number of flakes showing evidence of heat treatment.

Table 16 indicates a different distributional pattern for Umbo shells in Level 99.66-99.56 m. Though most of the shells were found in Test Pits 1 through 4, a much larger percentage was obtained from units A and B than was found in the two preceding levels. This may indicate a more evenly distributed midden deposit for this level.

One of the most distinctive characteristics of this level is shown in Table 12. The highest percentage of biface thinning flakes from any of the Middle Archaic levels is present in Level 99.66-99.56 m. There is a higher percentage of primary cortex flakes represented as well. These data indicate a different emphasis on decortication and biface manufacture and/or maintenance activities in this level.

TABLE 16. UMBO SHELL WEIGHT BY ELEVATION

Elevation	Test Pits 1-4	Units A & B	Total
100.06-99.96	0 gm	1 gm	1 gm
99.96-99.86	3 gm	13 gm	16 gm
99.86-99.76	23 gm	2 gm	25 gm
99.76-99.66	35 gm	6 gm	41 gm
99.66-99.56	27 gm	17 gm	44 gm
99.56-99.46	19 gm	37 gm	56 gm
99.46-99.36	31 gm	25 gm	56 gm
99.36-99.26	43* gm	0 gm	43 gm
99.26-99.16	22* gm	11 gm	33 gm
99.16-99.06	8* gm	18 gm	26 gm
99.06-98.96	gm	0 gm	0 gm

*Test Pits 1 and 2 only

There is not a significant change in the frequency of utilized flakes and flakes with edge modification in this level (Table 13). However, twice as many of these artifacts were excavated from Test Pits 1 through 4 as were excavated from Units A and B. This is a smaller ratio than that of the preceding level (which was approximately 10-1), but it does, perhaps, show that the focus of residential base functions was in the area of Test Pits 1 through 4. This interpretation is strengthened by the occurrence of Feature 1, a hearth, in this level at Test Pit 3.

MIDDLE ARCHAIC (Level 99.56-99.46 m)

The amount of fire-burned and fractured stone in this level does not differ significantly from that of the preceding level (Table 9). However, the distribution of these occupational debris is different, most occur in Units A and B. Perhaps this suggests a different focus of activities for this level. There is also a noticeable decline in the amount of *Rabdotus* shell (Table 15).

There is still a high number of flakes present in this level, but for the first time they are nearly evenly distributed between Test Pits 1 through 4 and Units A and B (Table 10).

Table 11 shows no significant change in the types of chert used in Level 99.56-99.46 m. Tan is still the most common form with dark brown and banded cherts occurring at an equal 18 percent level of representativeness. Heat treatment of flakes has not varied at all, with 11 percent represented in both levels. There is an increase in banded gray chert from one percent in Level 99.66-99.56 m to seven percent in Level 99.56-99.46 m.

The possible shift in activity focus is also indicated in Table 16. For the first time the majority of river mussels comes from Units A and B, nearly twice the amount recovered in Test Pits 1 through 4.

Table 12 shows a decrease in primary and biface thinning flakes and an increase in interior flakes for this level. However, these slight changes do not represent a significant divergence from the anticipated range of flintknapping activities represented in the three preceding levels. In short, these data still indicate the pattern of technological behavior expected at a residential base camp.

Significantly diverging from the preceding patterns suggested for this level, the data in Table 13 reflects a pattern similar to the three preceding levels. Once again the majority of the utilized flakes are located in Test Pits 1 through 4. This pattern of distribution may indicate food processing activity areas located in this portion of the site. Whereas, the number of flakes and Umbo shells in Units A and B may be indicative of discard activities and subsequent midden accumulation.

PRE-ARCHAIC TO EARLY ARCHAIC (Level 99.46-99.36 m)

In Table 9 an obvious decrease in the amount of fire-burned and fractured stone for this level is evident. There is also a decrease in the total amount

of flakes (Table 10). The flakes are, as in Level 99.56-99.46 m, nearly equally distributed between Test Pits 1 through 4 and Units A and B. Also, sandstone is absent from Test Pits 1 through 4 for this level. All of these data suggest a change in occupational patterns at the site during the period represented in this level.

There is also a change in the amount of *Rabdotus* recovered from Unit A. After decreasing to 152 in Level 99.56-99.46 m, *Rabdotus* shells increase to 270.

Table 11 also indicates significant change present in Level 99.46-99.36 m. There is a marked increase in tan and banded tan chert types with the lowest amount of dark brown chert present in any level (10%). The amount of flakes exhibiting evidence of heat treatment is relatively unchanged (10%).

For the first and only time in all of the levels, Table 16 shows relative parity between the amounts of Umbo shell recovered in the different excavation areas. This is also an indicator of change between this level and all of the others. In terms of total Umbo shell weight, Level 99.46-99.36 m and the preceding level are equal. Thus, the prehistoric activity of discarding the river mussel shells is the major difference between these two levels.

In Table 12 a different flintworking pattern is indicated. Primary cortex flake percentages have decreased while (particularly in Test Pits 1 through 4) biface thinning flake percentages show a distinct increase. Probably biface manufacture and recycling occurred more often in this level.

Though there is a decline in utilized and edge-modified flakes, as is shown in Table 13, this may largely be due to an overall decrease in flakes of all types (Table 10). What is most significant about Table 13 is the equal amounts of utilized flakes in both excavation areas. This is another indicator of a change in, or different, behavior patterns from those exhibited in the previous levels.

PALEO-INDIAN (Level 99.36-99.26 m)

This level has some contradictory indicators. For example, it has one of the highest amounts of fire-burned and fractured stone from any of the levels (Table 9). Yet, there is a very significant decrease in the total flake count from this level compared to those discussed previously (Table 10). Moreover, only Test Pits 1 and 2 were excavated to this depth in that vicinity of the site (3 and 4 were halted due to time constraints), but they have significantly more flakes than Units A or B at this level, and yet they comprise only half (or one 2 m^2 unit) of the area represented by Units A and B. Thus, these data show a clear focus of prehistoric activity in the vicinity of Test Pits 1 and 2.

Table 11 shows a different pattern of raw material use. The gray and dark brown cherts were used more often than in the preceding level and heat treatment appears to have been practiced more often. However, tan and banded tan forms still have the highest representative percentages.

Another example of change in Level 99.36-99.26 m is the total absence of Umbo shells from Units A and B. All of the Umbo specimens were recovered from Test Pits 1 and 2. This evidence further suggests that intensity of occupation was greater in the vicinity of Test Pits 1 and 2.

When one considers that nearly two-thirds of the flakes found in this level come from Test Pits 1 and 2, the significance of Table 12 is obvious. Over 40 percent of these flakes are biface thinning flakes. This indicates a specialized flintknapping activity area where bifaces were worked predominantly.

The focus of activities in the area around Test Pits 1 and 2 is also suggested by the data in Table 13. Over 70 percent of all of the utilized and edge-modified flakes come from this area.

In summary, all of these data show that the site probably functioned as a residential base camp during this period. However, the intensity of occupation appears to have been less than that of Level 99.46-99.36 m.

PALEO-INDIAN (Level 99.26-99.16 m)

Though diagnostic artifacts were not found in this level, it can be interpreted to date from the Paleo-Indian period. It is immediately below the level in which the *Lerma* point was found and has some shared characteristics. However, it seems to have been occupied much less intensely than Level 99.36-99.26 m. This decreased usage of the site is most noticeable first in Table 9, where one-tenth of the fire-burned and fractured stone recovered was in Level 99.26-99.16 m compared to the preceding level.

There is also a dramatic decrease in the amount of flakes found in this level (Table 10), but similar to Level 99.36-99.26 m is the fact that most of the flakes are from Test Pits 1 and 2.

The frequency of raw material types, shown in Table 11 for this level, suggests different patterns of usage. At least half of the flakes are made from tan chert. Another 22 percent of the flakes are of dark brown chert. There is a marked decrease in the usage of the banded tan forms (2%).

The Umbo shell amounts depicted in Table 16 also show more of a focus in the Test Pits 1 and 2 area which is a pattern also observed in the *Lerma* level. Another similarity with Level 99.36-99.26 m is the high percentage of biface thinning flakes shown in Table 12.

In summary, this level is very similar to the preceding one. Both show functional evidence of residential base camps. Probably the site was used less often or by smaller groups during the period represented in Level 99.26-99.16 m. These people also had different patterns of raw material acquisition and usage.

The last two levels, 99.16-99.06 m and 99.06-98-96 m, are very small samples. In fact, one would have a difficult problem in comparing them to preceding levels because the samples are so small. In conclusion one can

infer that they probably date from the Paleo-Indian period and that future research at the site may conclusively prove this inference.

SUMMARY AND CONCLUSIONS

In this section the results of the excavations of the Lost Peacock site are summarized. Also pertinent data from south Texas is presented to demonstrate the placement of the site in regional prehistory. Finally, this report concludes with recommendations for future research at the site.

Intrasite Summary

The upper two levels (100.06-99.86 m) are discussed as one analytical unit and represent Late Archaic and Late Prehistoric occupations.

The *Scallorn* projectile point is a common Late Prehistoric artifact from both south and central Texas (Hester 1980). The *Ensor* projectile point is also a common south Texas type; however, it has been found in both Late Archaic and Late Prehistoric contexts. Typical Late Archaic projectile points of south Texas are the *Frio* specimens recovered from the upper 20 cm of the site. In Unit A the *Anthon* projectile point from the 99.96-99.86 m level is an artifact type recently recognized by Weir and Doran (1980:18). According to Weir and Doran, the *Anthon* projectile point has stong affinities with southwest Texas. Thus, the diagnostic artifacts from the Late Archaic and Late Prehistoric occupations of the site exhibit regional relationships with south, central, and southwest Texas.

Throughout all of the periods represented, the site seems to have functioned as a residential base camp but the inhabitants of the late periods seemed to have placed more emphasis on initial reduction flintworking and less emphasis on food processing activities.

During the period represented by the 99.86-99.76 m level, the initial reduction of nodules apparently was not a common activity at the site. Many different raw materials were used for tool making and there seems to have been a reliance on heat treatment of chert in tool production. This level probably is transitional between the Middle and Late Archaic periods.

An intrasite pattern in activity focus can also be inferred for this level. Most of the Umbo shell midden and utilized flakes are concentrated in the area of Test Pits 1 through 4.

The Middle Archaic occupation for Level 99.76-99.66 m is indicated by the occurrence of the *Tortugas* and *Pedernales* projectile points in this level. Both of these artifacts are common south Texas types (Hester 1980). This level has the highest amount of flakes recovered from the excavations and this may indicate the period the site was most intensively used. Also in this level there is evidence of highly varied raw material exploitation. The area around Test Pits 1 through 4 seems to have the most use, as evidenced by the distribution of flakes, particularly utilized flakes and the river mussel midden deposit.

In Level 99.66-99.56 m the Middle Archaic occupation is evidenced by the *Langtry* and *Pedernales* projectile point finds. As has already been mentioned, the *Pedernales* projectile point is a common type in south Texas. The *Langtry* specimen, however, is common in both south and southwest Texas. In this level there is also evidence of intense occupation, a high number of flakes, fire-burned and fractured stone, and a more evenly distributed shell midden deposit. Flintworking activities seemed to have been focused primarily on biface thinning and initial reduction of nodules. The higher frequency of utilized flakes and the hearth (Feature 1) in the area of Test Pits 1 through 4 suggest that most occupational activities were focused there.

The lowest or earliest Middle Archaic occupation is evidenced in the 99.56-99.46 m level, and the *Pedernales* and *Tortugas* artifacts are common south Texas types (*ibid.*). During this period the flakes appear to be more evenly distributed between the excavation areas. However, most of the Umbo shells and fire-burned and fractured stone were found in Units A and B, which may indicate a confined midden locality. The high number of utilized flakes in Test Pits 1 through 4 may be evidence of prehistoric work areas.

The recovery of an Early Triangular biface and a *Nolan* projectile point fragment from Level 99.46-99.36 m may demonstrate different cultural historical affinities. The Early Triangular biface is found in Pre-Archaic contexts in south central Texas (Hester 1980). However, the *Nolan* projectile point is not common in south Texas, but is frequently found in Early Archaic contexts in central Texas (*ibid.*:102). During this occupation at the site, both the flakes and river mussels apparently were more evenly distributed, but in the vicinity of Test Pits 1 and 2 a great deal of biface thinning occurred.

The Paleo-Indian period is represented by the single *Lerma* projectile point from Level 99.36-99.26 m in Test Pit 1. This projectile point is not a common south Texas type but is frequently found in Mexico, particularly northeastern Mexico (Epstein 1980). During this occupation at the site there is a high density of fire-burned and fractured stone, but a low frequency of flakes. Most of the flakes, particularly the utilized flakes, and all of the Umbo shell were found in Test Pits 1 and 2. There is an obvious emphasis on biface thinning as the major flintworking activity that occurred primarily in the Test Pits 1 and 2 area. Similar patterns are represented in the 99.26-99.16 m level.

Conclusions

The Lost Peacock site (41 ZV 263) is a multicomponent, open site consisting of stratified components dating from the Paleo-Indian to the Late Prehistoric periods. A possible time depth of 10,000 years may be present at the site. The Lost Peacock site represents one of the oldest such stratified sites yet excavated in south Texas. The buried deposits at the site extend to a depth of approximately 1 m below the present surface. Several diagnostic artifacts representing the complete prehistoric sequence, as it is presently known, as well as abundant cultural debris (chert flakes, molluscan remains, land snails, and charcoal) were recovered from the test excavations. Through the work of Hester, Hill and others, over 200 sites have been recorded for Zavala County.

Of these, approximately 10 have been extensively tested or excavated (Hill and Hester 1971; Hester and Hill 1972; Hester 1978; Montgomery 1978; Hester 1980). None of these sites are as extensive as the Lost Peacock site. These other sites can be characterized as follows: (a) single component sites; (b) mixed multicomponent sites; or (c) sites with few diagnostic artifacts.

As mentioned earlier in the Chronology of Prehistoric Occupation section of this report, the regional cultural history of south Texas is not well understood. Perhaps the most significant contribution of the research described herein is the further development of the regional chronology represented at the Lost Peacock site.

In general the site seems to have been used most intensively during the Middle Archaic period. However, there is also a large Paleo-Indian component and the Late Prehistoric and Late Archaic periods are well represented. The Pre-Archaic and Early Archaic periods indicate the lowest site usage. Future research at the Lost Peacock site is needed to better define these components.

The Pre-Archaic component at the Lost Peacock site is a relatively uncommon occurrence (Story 1980:13). These assemblages are not often found in deeply buried alluvial terrace deposits (*ibid.*). However, the Pre-Archaic component at the Lost Peacock site follows the pattern summarized by Story (1980), "When deeply buried components are found, they usually underlie larger Middle and Late Archaic occupations." However, it should be pointed out that the Middle Archaic lasts nearly twice as long as the Pre-Archaic period, and large Middle Archaic occupations in south Texas sites are not an unexpected phenomena.

In terms of regional relationships, there are projectile point styles found at the Lost Peacock site that are more commonly found outside of south Texas. When one considers the site's locality in relationship to the cultural areas of Texas and Mexico, this finding is not difficult to interpret. As stated in the Environmental Setting section of this report, the site locality could be considered a transitional zone between south Texas, central Texas, southwest Texas, and, to a lesser extent, northeastern Mexico. The linkage between these diverse regions is provided by the Nueces River drainage. Throughout prehistory the river probably functioned as a major transportation, hunting, and gathering route as well as a communication artery. Particularly during periods of increasing climatic aridity such as the Pre-Archaic and the Middle Archaic (Table 3), it is expected that human subsistence and settlement patterns would focus on the regional drainage systems. Certainly the Internorth Project's reconnaissance data suggest such a settlement pattern, in that the majority of the sites were located very near potential water sources (Table 6).

The Late Prehistoric and Late Archaic periods at the Lost Peacock site in general represent behavioral patterns similar to those described by Montgomery at the Mariposa site (Montgomery 1978). Tools during this period were manufactured by core reduction and flake production and/or modification, as is evidenced by the high number of primary and secondary cortex flakes found in the upper levels of the Lost Peacock site. However, these activities seem to have been emphasized less during the earlier occupations and core reduction may have occurred elsewhere, perhaps at a decortication site nearby (probably at a terrace outcrop along the Nueces River drainage). Such a pattern would

be typical of the Collins-Hester model of lithic reduction (Collins 1975a; Hester 1975b). Thus, the lithic technological data at the Lost Peacock site indicate a diachronic change in tool manufacturing from the early to the late periods. One attribute characterizes the cores and core fragments from all of the excavated levels; they are almost always used up or exhausted. It would be difficult to obtain any suitable flakes from these specimens. This pattern may mean that quality material sources were not easily, or always, accessible, and may have been some distance from the site.

In investigations at the Honeymoon site (41 ZV 134), Hill and Hester (1971) found a lithic technological pattern different from that represented at the Lost Peacock site. The Honeymoon site is located approximately 15 miles southwest of the Lost Peacock site on Chacon Creek, a Nueces River tributary. The Honeymoon site was a dual component (Late Prehistoric and Middle Archaic) field camp. One of the findings reached by Hill and Hester (*ibid.*:58) is quoted below:

> The flake debris certainly suggests that the main activity carried on around the hearth was flint working, perhaps the production of cores or suitable flakes for transport to some nearby living site. The evidence does not point toward any great efforts directed toward the thinning of bifaces (lipped flakes constitute only 10.5% of the debitage). On the other hand, there is a quantity of debitage which would seem to indicate that cores were being roughed-out, and that some preliminary work was being done on the cores, either further shaping or the limited production of usable flakes.

In all of the Archaic period levels represented at the Lost Peacock site, biface thinning flakes occur in rather significant percentages (higher than 10.5%). So, the patterns of flintworking behavior represented at the Honeymoon site and the Lost Peacock site may be indicative of sites that functioned as part of the regional Archaic settlement system; large residential base camps, supported by logistically organized task groups who procured raw material, performed some initial reduction or cortex removal at small field camps (like the Honeymoon site), and brought preforms back to a residential base camp (like the Lost Peacock site), where they were further reduced into specialized tools and bifaces. Such a pattern has been suggested by Hester (1975b) for the Rio Grande Plain and findings of the Internorth Project tend to support the Collins-Hester model of lithic reduction.

The Paleo-Indian component of the Lost Peacock site is unique in the region. In general, most of the Paleo-Indian projectile points from Zavala County are of the Plains-Related Tradition. *Clovis*, *Plainview*, *Golondrina*, *Folsom*, and *Angostura* points (Hester 1978, 1980), as well as *Scottsbluff* points have all been reported from the Rio Grande Plain. *Lerma* projectile points are less common and in Zavala County none have ever been excavated from a buried *in situ* context. A few surface finds of *Lerma* points have been reported from Zavala County, nearly all of them by T. C. Hill, Jr. (see site record files 41 ZV 57, 41 ZV 59, 41 ZV 152, 41 ZV 161, 41 ZV 162, 41 ZV 171, and 41 ZV 174 at Texas Archeological Research Laboratory, Austin). Thus, with the discovery of the *Lerma* projectile point at the Lost Peacock site, there is significant evidence of the Small Projectile Point Tradition with its associated northeastern Mexico affiliations in this portion of the Rio Grande Plain.

That there should be significant evidence of both Paleo-Indian traditions in the region should be expected when one considers that most likely these were highly mobile, nomadic bands.

During the Paleo-Indian occupation of the Lost Peacock site there was an obvious emphasis on biface thinning work (Table 13). Possibly the site functioned as a residential base camp where replenishing and recycling of the hunting tool kits of these Paleo-Indian bands was conducted before they entered areas where they knew quality raw material was scarce or absent.

To what extent these interpretations are plausible largely depends upon future research at the site. Recommendations for such research are offered in the following and concluding section of this report.

Recommendations for Future Research at the Lost Peacock Site

As described previously in this report, one of the major problems in defining cultural components was the lack of clearly distinct geological and cultural strata at the Lost Peacock site.

In a recent project conducted by the Center for Archaeological Research at Eagle Hill, a multicomponent site in Louisiana, Gunn *et al.* (ms) describe a similar problem. They solved this problem by applying an excavation technique known as planing. Such a technique is recommended for any archaeologist investigating the Lost Peacock site in the future. Planing is described by Gunn *et al.* (*ibid.*:53) as follows:

> The first step in planing is to shave a profile leaving artifacts on pedestals until a battery of artifacts is exposed along the face. If good fortune is with the excavator, the artifacts will define a linear pattern across that face. This alignment of materials is taken to mark an occupation floor. At this point, the excavator establishes a control face with the contact two cm below the line of flakes, completes a physical unit form on the substratum and moves across the square pursuing the vertical concentration of cultural debris.
>
> The surface exposed at the contact must be understood in a very special sense. It is not the bottom of an excavation unit as would be the case in an arbitrary unit but a plane which estimates the location of an occupation floor. Therefore, artifacts found immediately above and below the plane are considered to be a part of that occupation floor. It is the responsibility of the excavator in consultation with the supervisor, to decide whether an artifact above or below the plane is a part of the targeted occupation floor. Normal procedure was to consider artifacts two cm above or below the floor to be a part of that floor. If artifacts appeared outside what the excavator felt to be the normal distribution of the floor, the artifact was tagged with a "+" for above the floor or a "-" for below the floor. If it was found that a pattern of tags existed in a quadrant of the unit upon its completion, one would suspect that the excavator was undershooting or overshooting the real occupation floor, a fact which was compensated for when tagging the wall with the substratum unit number.

Though this technique is somewhat time consuming, it is recommended because some of the interpretations offered in this report can be supported or discarded through the use of such meticulous excavation techniques (unfortunately such techniques could not be employed during the test excavations when time was severely limited).

The planing technique would perhaps better define the boundary between the Late Archaic and Late Prehistoric and the Pre-Archaic and Early Archaic occupations at the site. Also, activity areas could be better defined through the application of this technique.

In conclusion, a large portion of the site (those areas outside of the proposed pipeline corridor) remains archaeologically unknown. Further excavations need to be conducted in these areas to ascertain if different patterns of prehistoric cultural behavior (from those suggested in this report) are present in different portions of the site.

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