

APPENDIX B
CULTURAL RESOURCES SURVEY REPORT



**TEXAS
HISTORICAL
COMMISSION**

The State Agency for Historic Preservation

RICK PERRY, GOVERNOR

JOHN L. NAU, III, CHAIRMAN

F. LAWRENCE OAKS, EXECUTIVE DIRECTOR

April 10, 2002

Neal Ackerly, Ph.D., Principal Investigator
Dos Rios Consultants, Inc.
P.O. Box 1247
Silver City, New Mexico 88062

Re: Project review under Section 106 of the National Historic Preservation Act of 1966
and the Antiquities Code of Texas
Draft archeological survey report for three locations for proposed INS Headquarters facilities,
El Paso County, Texas (COE-Alb / EPWU-PSB TAC#2707)

Dear Dr. Ackerly:

Thank you for your correspondence describing the above referenced project. This letter serves as comment on the proposed federal undertaking from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission. As the state agency responsible for administering the Antiquities Code of Texas, we also provide recommendations on compliance with state antiquities laws and regulations.

We apologize for the delay in providing this review under the Antiquities Code, but we have been waiting for formal recommendations regarding eligibility and effect from the lead federal agencies on this matter.

The review staff led by Myles Miller has completed its review, and in our opinion the report provides a very thorough evaluation of cultural resources that will serve as a basis for considerations of future undertakings in the area. Three historic and prehistoric archeological sites were recorded during the survey. Historic sites 41EP5525 and 41EP5527 are extensive trash dumps dating primarily to the early and mid-1900s. We concur with the recommendation that field recording has exhausted the data potential of these sites, and accordingly they are not eligible for inclusion in the National Register of Historic Places (NRHP) nor do they warrant formal designation as State Archeological Landmarks (SALs). Prehistoric Site 41EP5526 is a surface scatter of ceramics and has limited research potential. We concur that this site is ineligible for inclusion in the NRHP and does not warrant formal designation as an SAL.

Dr. Neal Ackerly, Cont.
P. 2

We concur with the recommendations set forth on pages 77 and 78 that field documentation of the three archeological sites has exhausted their data potential. Accordingly, it is our recommendation that, should any of the three alternate parcels be selected for the proposed INS Headquarters, the proposed undertaking will have no adverse effect on historic properties.

The report is generally well-written, and we are pleased with the level of documentation and chronological detail provided on the historic trash scatters. We have a few comments and required revisions included as Attachment #1 to this letter. After you have addressed these comments, please furnish this office with 20 copies of the final report, along with a copy of the THC Abstract Form. A THC Curation Form will be required if any artifacts were collected during the survey. This will complete your obligations under Antiquities Permit #2707.

We look forward to further consultation with your office and hope to maintain a partnership that will foster effective historic preservation. Thank you for your cooperation in this federal and state review process, and for your efforts to preserve the irreplaceable heritage of Texas. **If you have any questions concerning our review or if we can be of further assistance, please contact Myles Miller at 512/463-5864.**

Sincerely,



for
F. Lawrence Oaks, Executive Director

enclosure

cc: Dr. John Schelberg, COE-Albuquerque

LO/wjm/mm

Attachment #1

Comments and Required Revisions

An Archaeological Survey of Three Alternate Proposed Sites for the Construction of an Immigration and Naturalization Service Sector Headquarters, El Paso, Texas
Texas Antiquities Permit #2707

1. Page 78, third paragraph - "41EP5526 is a twentieth century trash dump.....". It appears that this site number should be 41EP5527.
2. Please include the Texas Antiquities Permit # on the title page of the report.
3. In accordance with Texas Historical Commission and Texas Archeological Research Laboratory policy implemented on May 1, 2000 (see *Current Archeology in Texas*, Vol. 2, No.1: p.11), please include the topographic map showing the location of the two sites in a separate map pocket in ONE copy of the report to be submitted as "THC Library Copy". The 19 additional copies of the revised final report submitted under the requirements of the permit should not include this figure within the text or as separate map pocket.



DEPARTMENT OF THE ARMY
HEADQUARTERS, U. S. ARMY AIR DEFENSE ARTILLERY CENTER AND FORT BLISS
1733 PLEASANTON ROAD
FORT BLISS, TEXAS 79916-6816

February 13, 2002

REPLY TO
ATTENTION OF:

Directorate of Environment
Conservation Division, Archeological Resources Team

John D. Schelberg, Ph.D.
Acting Chief, Environmental Resources Branch
Engineering and Construction Division
Albuquerque District, U.S. Army Corps of Engineers
4101 Jefferson Plaza, NE
Albuquerque, New Mexico 87109-3435

Re: Project review under Section 106 of the National Historic Preservation Act of 1966;
*"An Archaeological Survey of Three Alternate Proposed Sites for the Construction of an
Immigration and Naturalization Service Sector Headquarters, El Paso, Texas."*

Dear Dr. Schelberg,

This letter is in response to your request for review and comment on the subject report pursuant to the National Historic Preservation Act of 1966 (as amended) and its implementing regulations 36 CFR 800.

The report describes an archaeological survey of three land parcels proposed by the Immigration and Naturalization Service as alternative locations for the construction of a Border Patrol Station. One of these parcels (Parcel #1, 58.5 acres) is located on Fort Bliss lands within Castner Range. The survey identified two archaeological sites within Parcel #1: 41EP5525, a mid-twentieth century trash dump consisting of household domestic refuse dating from the mid-1930s to the mid-1950s; and 41EP5526, a low-density prehistoric sherd scatter dating to AD 1075-1400. The survey also identified 59 isolated artifact occurrences within Parcel #1; 57 are likely related to the historic period activities represented at 41EP5525; and two are likely related to the prehistoric activities evident at site 41EP5526.

We have determined that the survey methods employed were sufficient to identify any potential historic properties in Parcel #1.

In accordance with applicable regulations, standards and guidelines, we have determined that these two properties (41EP5525 and 41EP5526) are **not eligible** for inclusion in the National Register of Historic Places. The site documentation, intensive in-field recording and subsequent detailed analysis described in the report have

exhausted the potential for these properties to yield information important in prehistory or history.

We would like to suggest one substantive revision to the report. The report describes a number of "Isolated Occurrences" within the boundaries of site 41EP5525. Fort Bliss treats "Isolated Occurrences" and "Sites" as mutually exclusive categories in our documentation and management. We would like to have those "Isolated Occurrences" within the boundaries of site 41EP5525 re-designated as "Loci." This will be consistent with past practice and greatly simplify our record keeping and management.

Thank you for your assistance with this project. We understand that you will communicate our eligibility determinations to the Texas State Historic Preservation Officer along with those pertaining to the surveyed parcels outside of Fort Bliss' responsibility. Please continue to provide our office with copies of relevant correspondence.

If you have any comments or questions, please contact Bret Ruby at 915-568-6999.

Sincerely,

A handwritten signature in black ink, appearing to read "Bret Ruby", written in a cursive style.

Bret J. Ruby, Ph.D.
Archeologist

**AN ARCHAEOLOGICAL SURVEY OF THREE
ALTERNATE PROPOSED SITES FOR THE CONSTRUCTION
OF AN IMMIGRATION AND NATURALIZATION SERVICE
SECTOR HEADQUARTERS, EL PASO, TEXAS.**



By

Neal W. Ackerly, Ph.D.

Texas Antiquities Permit No. 2707

**A Report prepared by Dos Rios Consultants, Inc., P.O. Box 1247, Silver City, NM,
88062 under subcontract to Science Applications International Incorporated, San
Antonio, TX.**

December 2001

Past and Contemporary Vegetation in the Project Area

This chapter briefly summarizes the vegetation of the project area. Specific emphasis is placed on structure and geographic distribution of past vegetative associations. Finally, the potential impact of ground cover on the archaeological survey is discussed.

Past Vegetative Patterns

Perhaps the best indicator of past vegetation in the project area derives from studies of fossil packrat middens. Fossil packrat middens have been analyzed from the eastern slopes of the San Andres Mountain (Van Devender and Toolin 1983) northeast of the project area, from the Fra Cristobal Mountains (Van Devender 1990) to the northeast, and from Bishop's Cap (Van Devender and Everitt 1977:337) to the southwest. These studies effectively bracket the project area and provide indirect evidence concerning the structure of vegetation at various time intervals.

Plant macrofossils from these ancient packrat middens document the presence of piñon-juniper woodlands at elevations of 1525–550 meters in most of the present Chihuahuan Desert during the late Wisconsinan (22,000 to 11,000 years before present). Warm desert species were common in these woodlands at lower elevations and mixed conifer and subalpine forests were present at high elevations. Late Wisconsin middens from the San Andres Mountains (1705 m), dated at $14,920 \pm 320$ B.P., contained Douglas fir, Rocky Mountain juniper, ponderosa pine, and blue spruce. Dates obtained from even earlier Mid-Wisconsin middens, ranging to upwards of $31,250 \pm 2200$ B.P., at the Bishop's Cap locality confirm the relative longevity of this association over much of southern New Mexico. Time series analyzed from these middens show little change in composition over the 11,000 year period, suggesting that piñon-juniper woodlands were fairly stable (Van Devender and Spaulding 1979:701-702).

Early Holocene xeric woodlands appear in the Chihuahuan Desert about 11,000 B.P. The beginning of the early Holocene is marked by the migration of piñon-juniper woodlands to higher elevations. Desert-adapted species quickly increased in abundance and dispersed into new areas. The end of the early Holocene woodlands in warm deserts appears to have been a rapid, expansive, and concurrent event which took place some 8,000 years B.P. Xeric, middle elevation juniper woodlands and creosote bush developed concurrently with the disappearance of piñons in the Southwest. Early Holocene vegetative associations consisting of juniper, saltbush, wild rose, oak, and big sagebrush association appear sometime between $11,010 \pm 340$ B.P. and $10,290 \pm 210$ B.P. Between $10,900 \pm 160$ B.P. and $9,110 \pm 220$ B.P., juniper-oak woodlands decline and grasslands appear to become more pronounced. Independent confirmation of the presence of grassland vegetation appears in middens from Bishop's Cap, situated at 1430 meters, at between 10,300—10,800 B.P.

In the Chihuahuan Desert, a middle Holocene grassland community preceded the formation of the present, diverse, succulent desert scrub communities at elevations of 1200-2000 meters. However, creosote bush, lechuguilla, mariola, and others may have been present in small edaphic microhabitats within the grasslands. The establishment of desert scrub communities within the Chihuahuan Desert is considered to be the last major geological vegetational change in the Southwest (Van Devender and Spaulding 1979:701-710). Mid-Holocene middens are generally lacking for most of southern New Mexico. At the same time, there is evidence for spatial mosaicism in the occurrence of vegetation associations over portions of the study area. In the Fra Cristobal Mountains (1705 m), for example, juniper-oak woodlands appear to have persisted until ca. 7,830 \pm 190 B.P.

Late Holocene middens are equally rare. Effectively modern desertscrub associations, including creosote, appear no later than 4,430 \pm 150 B.P. in the San Andres Mountains. Middens from similar time periods were not found at either the Bishop's Cap or Fra Cristobal localities. Given the impact of elevational zonation, and given that most of these sample localities are situated anywhere from 1,000—1,500 feet higher than the study area proper, it is reasonable to expect that desertscrub vegetation was present in the study area at an earlier time.

Ground Cover

The impact of vegetation on the archaeological survey reported here varied from parcel to parcel. Parcel #1 exhibited ground cover averaging about 50 percent. In contrast, Parcels #2 and #3 exhibited ground cover of less than 25 percent.

A Summary of Regional Culture History

Below we present a synopsis of our current understanding of major developments throughout the prehistory of the Tularosa basin. Although the majority of this material is descriptive in nature, the treatment presented here helps to define some of the major deficiencies in our knowledge and isolate themes, or issues, that are of common concern to archaeologists working in the Mogollon area of southern New Mexico and west Texas.

This review encompasses occupations from three major time intervals including Paleolndian, Archaic and Formative. Major categories of information presented for each of these time intervals includes artifact assemblages, settlement patterns, architectural characteristics, and subsistence practices.

Paleolndian Period

Previous archaeological research in the Southwest reveals that human occupations of the area span thousands of years. The earliest well documented archaeological remains of the area are assigned to the Paleolndian period, dating between 11,000-8,000 years ago (Abbott et al. 1996:45, Mauldin et al. 1998:15). Distinctive Paleolndian stone tool assemblages containing finely made lanceolate points are generally thought to be indicative of adaptations specialized for large game hunting. Representative of these assemblages are the Clovis and Folsom "cultures," both of which are known to occur in southern New Mexico and southwest Texas (Abbott et al. 1996:45, Beckes 1977, Eidenbach 1983, Harkey 1981). Small family band social organization is postulated for this period, a pattern consistent with highly nomadic seasonal movement patterns (Judge 1973, Wheat 1972). Although these remains are highly ephemeral, isolated finds have been reported from areas adjacent to this project location. Considering both complexes, Clovis material remains are the least well known and documented. Such limited documentation is understandable considering the constraints of time, obscurity of such remains, and erosional factors. Even with such obscurity, isolated Clovis finds, generally in the form of projectile points, have been reported in the area (Harkey 1981, Krone 1976) and more recently at the North Mesa site (LA 5529). Along with these isolates, two confirmed Clovis sites or "localities" have been documented. The Mockingbird Gap site (Weber and Agogino 1968) and the Rhodes Canyon locality (Eidenbach 1983) have produced abundant Clovis remains in the form of projectile points, specialized tools (i.e., "thumbnail" and spoke-shave scrapers and engravers), and associated debitage. Mockingbird Gap is extremely important archaeologically due to its interpretation as a camp site, and the fact that it is located adjacent to an extinct, Pleistocene lake bed. Such an area was obviously the habitat for the megafauna these ancient hunters relied upon.

Folsom materials are by far the oldest Paleolndian remains found in the immediate area. Based on finely made, fluted projectile points, Folsom

assemblages have been dated elsewhere at 11,500-8,000 years ago (Wheat 1972). Isolated Folsom materials have been documented in the immediate area in the form of projectile points and associated debitage (Abbott et al. 1996:45-46, Camilli et al. 1988, Krone 1975, Russel 1968). Folsom sites have also been recorded in the area with some producing as many as 25 Folsom and associated projectile points from surface deposits (Everitt and Davis 1974, Quimby and Brook 1967, Russel 1968). The Cruz Tarin site, located approximately 45 miles to the northwest of the project area, and the Folsom complex, as described by Russel (1968) near Oro Grande, New Mexico, are examples of sites in the immediate vicinity of this project area which have produced large amounts of Folsom material. Such sites and isolated occurrences have been attributed to the highly mobile subsistence strategies employed by these peoples. Such sites have been interpreted as short-term camps or staging areas for the exploitation of migrating herds upon which these populations existed (Judge and Dawson 1972).

A continuation of a highly mobile hunting and gathering subsistence base is assumed into late PaleoIndian times. It is during this period that sets of diversified lithic technologies are introduced. These technologies are generally referred to as the Plano tradition, and are defined on the basis of projectile point styles. These lithic technologies or traditions include the laterally-thinned (Midland, Plainview), the constricted base (Agate Basin, Hell Gap), and the indented base series (Firstview, Cody Complex). These technologies are collectively dated from approximately 10,500-8,000 years B.P. (Wheat 1972, Cordell 1979). Aside from projectile point styles, lithic assemblages from these technologies resemble those of the preceding Folsom period. Isolated occurrences and sites of these technologies have been reported in the project area (Broilo 1973, Eidenbach 1983, Elyea 1987, Everitt and Davis 1974, Kauffman 1984).

Sites and isolated occurrences within the project area are generally assigned to the PaleoIndian period based on the presence of specialized tools and projectile points (Kauffman and Wright 1987). Specialized tools in the form of end-scrapers, denticulates, notched flakes, and bifacial and unifacial knives are believed to characterize most PaleoIndian assemblages (Judge 1973, Chapman 1977). Chronometric evidence must be established in future studies in order to be confident that the projectile points date to the PaleoIndian period.

Archaic Period

At approximately 8,000 B.P. several factors appear to have caused a change in adaptive strategies among the prehistoric inhabitants of the area (Mauldin et al. 1998:15-16). No longer was big game hunting the only subsistence focus, but rather, a more diversified set of exploitative technologies came into use. Prehistoric settlement and subsistence appear to have centered on adaptations to desert grassland and desert scrub resources, as well as increased spatial and seasonal variability in key resources (Abbott et al. 1996:47).

This period of more diversified adaptations is generally referred to as the Archaic Period. The Archaic Period lasts from approximately 8,000 to around 2,000 years ago. Archaic populations appear to have developed patterns of seasonal movement that were related to variable natural resource availability. Increasing variability in projectile point production technologies (i.e., hard versus soft hammer percussion, basal thinning, corner-notching, etc.) suggest that regional differentiation was developing (Taylor 1964, Winters 1969). Social groups were probably still organized at the family and band level, with a concurrent high degree of residential mobility inferred for these groups.

Several important changes are thought to have occurred during the Archaic Period. The shift in focus from big game hunting to a broader spectrum hunting and gathering subsistence base is foremost, accompanied by postulated increases in the resource zones and types of resources utilized. Settlement patterns also changed noticeably, reflecting more dispersed and variable subsistence strategies. Such patterns are recognized in the variability of known Archaic sites (Mauldin et al 1998:15-16). Archaic sites have been recorded in a variety of environmental and topographical zones (Abbott et al. 1996:47, Dick 1965, Human Systems Research 1972, Laumbach 1980a, Martin et al. 1949, (Mauldin et al 1998, Whalen 1971).

Most of the Archaic sites known from the project area are from surface scatters and not from excavated sites. However, several excavated Archaic sites are present. For example, two fire-cracked rock/lithic scatter sites were excavated at the Doña Ana County Fairgrounds, located on Las Cruces' West Mesa (Seaman et al. 1988). Carbon-14 studies from the two sites produced calibrated dates of 1060—810 B.C., 1420-1050 B.C., 1496-1164 B.C., 2199—1680 B.C. and A.D. 80—390. The dates are generally consistent with the Chiricahua, Paisano and Augustin projectile points recovered from the sites (Seaman, et al. 1988:55).

Archaic cultural remains found within the general project location are manifestations of two basic cultural groups: Cochise Culture and Oshara Tradition (Abbott et al. 1996:231). The Cochise Culture was first defined by Sayles and Antevs (1941) to describe the Archaic of southeastern Arizona and southwestern New Mexico. Three stages are defined for the Cochise. These include the Sulfur Springs stage (7,000-3,500 B.C.), the Chiricahua stage (3,500-1,500 B.C.), and the San Pedro stage (1,500-200 B.C.). The Archaic period for the northern Southwest has been termed the Oshara Tradition (Irwin-Williams 1979). The phases assigned to the Oshara are: Jay Phase (5,500-4,800 B.C.), Bajada Phase (4,800-3,200 B.C.), San Jose Phase (3,200-1800 B.C.), Armijo Phase (1,800-800 B.C.), and the En Medio Phase (800 B.C. to A.D. 400). More recently, MacNeish has proposed the Chihuahua Tradition to describe the Archaic of south central New Mexico and Chihuahua, Mexico (MacNeish and Beckett 1987). Four phases are defined based on stratigraphy obtained primarily from rockshelters (Abbott et al. 1996:46). The Chihuahua Tradition includes the Gardner Springs complex (6,000—4,000 B.C.), the Keystone phase (4,000—2,500 B.C.), the Fresnal phase (2,500—900 B.C.), and the Hueco phase (900 B.C.—A.D. 250).

It should be noted that Archaic assemblages from all of these defined cultural groups have been recorded in adjacent areas of Doña Ana County (Beckett 1980, Eidenbach 1983, Laumbach 1980a). It should also be noted that these phase assignments are largely based on stylistic variations in projectile points through time.

Stylistic variations among projectile points increased drastically during the Archaic (Abbott et al. 1996:231). Such wide variations can possibly be explained by regional differentiation among various Archaic groups with attendant decreases in interaction and the exchange of information. This may have been further exacerbated by progressively greater differentiation in the economic pursuits of these groups. A general trend from concave-based, slightly shouldered, lanceolate or leaf-shaped projectile points to convex or straight-based points with corner-notching was characteristic of the Archaic period.

More recent studies suggest that the use of stylistic variations in projectile points as temporal indicators in southern New Mexico is dangerous because there is very little chronometric evidence (i.e., C-14, obsidian hydration) to support these age estimates. For example, Ravesloot (1988:79) performed obsidian hydration studies on projectile points recovered at sites in Doña Ana County. The results did not always support previous temporal estimates of named point types. Three Pelona style projectile points, for instance, were reassigned to the Formative Period on the basis of the obsidian hydration dates. The Pelona style projectile points were originally assigned to the Middle Archaic Period (Ravesloot 1988:81). Archaic sites in general have the same problems as PaleoIndian sites, so caution is advised when identifying or interpreting such phases.

Recent excavation of a possible Archaic lithic scatter site raises questions of whether it is possible to assign sites to the Archaic period based solely on lithic assemblage and projectile point style (Clifton and Laumbach 1988:27). Obsidian hydration studies produced dates ranging from 3318 B.C. to A.D. 1691. Obsidian hydration dating of an Armijo style projectile point resulted in a date of A.D. 1517. This date is roughly 3,000 years later than the style would suggest (Clifton and Laumbach 1988:27). It is possible that the projectile point was reworked at a later time. However, the lithic assemblage present at the site was relatively homogeneous and appeared to represent Archaic occupation (Clifton and Laumbach 1988:39). If the Armijo style projectile point was indeed reworked at approximately A.D. 1517, it means that the site was probably occupied multiple times over a period of several thousand years.

Although Archaic sites provide avenues for speculation, general trends about Archaic subsistence and material assemblages can be recognized. With greater emphasis on plant procurement, and less on large animal hunting, the introduction of grinding and milling stones (manos and metates) signals an important subsistence change throughout the period. Metates vary from slab to shallow basin to deep basin forms. Mano forms range from small, unifacial types to large bifacial or multiple-edge types (Duran 1982:7)

Throughout most of the Archaic period, subsistence was based on hunting and gathering of wild plant and animal resources (Mauldin et al 1998:16). A

major development in the late Archaic was the introduction and experimentation with cultigens (i.e., maize, beans, squash). Recently, Minnis (1985:320) compiled Archaic Southwestern sites which have produced cultigens. These include Tularosa and Cordova caves, Placitas Arroyo, and Swallow Cave in northern Mexico. Cultivars have also been found at Bat Cave (Dick 1965), Jemez Cave (Ford 1975), and Fresnal Shelter (LeBlanc and Whalen 1980).

In the immediate project location, Upham et al. (1987) and MacNeish and Beckett (1987) have reported evidence for early cultigens from several rock shelters including Roller Skate (NMSU 1519), Tornillo (LA17687), and Todsén (LA 5531) shelters. These shelters lie within the Mesilla Valley proper, and are located within a radius of 10 miles of Las Cruces. To date, these shelters are some of the earliest known localities for domesticates in the Southwest and suggest corn may have had its beginnings here as early as 1,225 B.C. (Upham et al. 1987:410-419). Although cultigens do not play a large part in the Archaic subsistence base, they were present and represent the beginning of an agricultural focus which played a major role in the following periods.

Other trends in Archaic lithic assemblages can also be noted. Recent research suggests that tool manufacturing among Archaic populations resulted in the production of an enormous amount of debitage as compared to later Formative technologies (Chapman 1977, Laumbach 1980b). In particular, Archaic lithic reduction technologies were characterized by high amounts of debitage (waste flakes), a greater tendency to prepare platforms, and little evidence for the production and use of expedient flakes and flake tools. These patterns, while controversial, suggest that Archaic lithic technologies centered around the manufacture of bifaces and bifacial tool kits for the exploitation of diversified environments. However, such theories should be applied cautiously as not all Archaic assemblages fit this pattern (Chapman 1980:49-50).

The Archaic period also saw the introduction of specialized architectural features. These features consist of pit rooms, hearths, surface and subsurface storage structures, and occasional pit burials. Such features have been noted in the general project area (O'Laughlin 1980). Again, these features appeared late in the Archaic sequence. Yet, they do anticipate cultural and behavioral changes more characteristic of later time periods.

In general, the Archaic Period can be characterized as a continuation of the earlier PaleoIndian mobile way of life with an increased emphasis on plant foods and small game. Some of the changes in adaptive strategy may have been linked to climatic changes, with ensuing changes in vegetation community composition. Several site types have been dated to the Archaic Period, including rockshelters, caves, burned rock features, lithic scatters, and isolated hearths. Many sites have been incorrectly dated to the Archaic either because they lack ceramics or because of misidentified or misdated "diagnostic" artifacts such as projectile points. Recent research has shown that many sites assigned to the Archaic on the basis of the above methods were actually occupied much later (Upham et al. 1986).

Formative Period

The succeeding periods in the occupational history of the region are generally termed "Mogollon." Archaeological research was first intensively done in the Mogollon area of southern New Mexico and west Texas by Donald Lehmer in the late 1940's. This early research has since served as a baseline for later researchers, with the Formative Period defined as extending from A.D. 250-1450 (Abbott et al. 1996:47).

According to the phase sequence first postulated by Lehmer, there was a shift away from nomadic hunting-and-gathering around 2,000 years ago. This shift toward a more sedentary settlement system is believed to be reflected in progressively greater emphasis on the cultivation of crops such as maize and beans and may have been prompted by increasing population growth. The phase system defined by Lehmer (1948) postulates a linear increase from simple to more complex strategies and technologies through time. However, recent research has shown that the assumptions of increased complexity inherent in the phase system may be erroneous and do not, in any case, account for much of the variability present in the archaeological record (Kauffman and Batcho 1983, Stuart and Gauthier 1981, Upham 1984).

In the southern New Mexico area, the Formative period has been subdivided into three phases including the Mesilla (A.D. 900-1100), Doña Ana (A.D. 1100 -1200), and El Paso (A.D. 1200-1400) phases. The following is a summary of current thinking regarding the structure of prehistoric adaptations during these intervals.

Mesilla Phase

The Mesilla Phase, the earliest phase of the Formative, is defined by the presence of undifferentiated brownware ceramics and a subsistence base composed of a mixture of hunting and gathering and agriculture. The Mesilla phase was originally signaled by the presence of pithouse occupations. However, recent research indicates that pithouses and plain brownware ceramics were present in the area from as early as A.D. 200 (Carmichael 1985, O'Laughlin 1980). Thus, in some contexts, the Mesilla Phase can be said to span the A.D. 200—1100 period. In turn, the presence of pithouses and plainware ceramics has been construed to indicate a more sedentary lifestyle and a greater energy investment in dwelling construction and maintenance.

However, in most other respects Mesilla phase artifact assemblages and settlement patterns do not appear to have undergone significant modification from that associated with Archaic groups. This may be due, in part, to the possibility of heterochroneity in the adoption and expansion of agriculture among groups across southern New Mexico (LeBlanc and Whalen 1980:451). Toward the end of this phase, large pithouse villages commensurate with increases in population concentration and the presence of purported "trade" wares consistent with more widespread regional interaction begin to characterize the archeological record (Mauldin et al 1998:16).

At the same time, recent obsidian hydration studies from sites on the East and West Mesas of Las Cruces cast some doubt as to the validity of ceramic associations presumably typical of the Mesilla phase (Miller and Swarthout 1988:123-127). Of the more than 26 sites from which artifacts were dated, the majority did indeed date to the Mesilla phase (Miller and Swarthout 1988:115-121). Yet, there were significant age discrepancies found at several of the larger sites. For instance, obsidian hydration dates ranging from 1244 to 1194 B.C. were recovered from a large East Mesa site containing such ceramic types as Three Rivers Red-on-terracotta, Playas Red, and Chihuahuan Polychromes (Abbott et al. 1996:233-235). Nominal ages of ca. A.D. 1100 associated with these ceramic types result in a discrepancy of approximately 2,200 years between the obsidian hydration dates and the relative ceramic dates for the site (Miller and Swarthout 1988:125). The recovery of intrusive ceramics (Lehmer 1948), especially Mimbres Black-on-white varieties, has often been interpreted as an indicator of interaction with (Mimbres) Mogollon groups to the west (Abbott et al. 1996:232, 235-236, 242). Yet, recent petrographic studies have indicated that Mimbres-style designs may well have been executed on locally manufactured pottery (Carmichael 1983:68, Ruge 1988:189). Should additional studies confirm these preliminary results, then the evidence for long-distance trade and interaction will be seriously undermined (but see Abbott et al. 1996:232).

Mesilla phase sites have been located in a variety of environmental settings. At the same time, the availability of permanent water sources seems to have been an important factor in settlement location. The use of domesticated plants continued to be a major subsistence source throughout this phase.

Doña Ana Phase

As proposed by Lehmer (1948), the Doña Ana phase represents a short-lived occupation and transition from the Mesilla to El Paso phases. Both pithouse and adobe pueblos are known from this phase. Doña Ana ceramic assemblages consist of El Paso Brown, El Paso Red-on-brown, El Paso Polychrome, Mimbres Black-on-white, Three Rivers Red-on-terracotta, Playas Red, and Chupadero Black-on-white types (Carmichael 1985).

Although sites dating from this period are usually ephemeral and not well documented, they have been recorded in the Rio Grande valley, the Hueco Bolson, and the Tularosa Basin (Carmichael 1983a, Miller 1989, O'Laughlin 1981). The generally poor evidence about this phase may be due, in part, to the fact that the Doña Ana phase is difficult to recognize (Abbott et al. 1996:48). Indeed, some researchers have chosen to ignore this phase in their use of regional periodization schemes (Elyea 1987:15).

The number of large sites or pueblos recorded in this phase suggests increasing population and a more structured regional social organization than was previously observed during the Mesilla phase (Whalen 1981). It has been postulated that it was during this phase that the inhabitants of the Mogollon were in direct contact with large social networks in northern Mexico (Abbott et al.

1996:242, Schaafsma 1979). An additional observation is that large adobe pueblos assigned to the Doña Ana phase are found both in riverine and non-riverine areas.

El Paso Phase

The El Paso Phase (A.D. 1200-1400) represents the terminal portion of the Mogollon phase sequence as it is currently defined. Architecture consists of above ground, linear-roomed, adobe pueblos. Site locations are varied, but alluvial terraces and playa margins appear to be preferred (Mauldin et al 1998:17). The ceramic assemblage is also varied and contains El Paso Polychrome, Mimbres Classic Black-on-white, Chupadero Black-on-white, Three Rivers Red-on-terracotta, Gila and Tonto Polychrome, and a variety of Chihuahuan wares (Abbott et al. 1996:48, 236; Mauldin et al 1998:17).

Agricultural pursuits may have intensified during this phase, partly in response to increased population growth (Abbott et al. 1996:48). Notable with respect to their occurrence are maize, beans, squash, and bottle gourds from archaeological sites (Ford 1977). At the same time, the continuing recovery of wild plant and animal resources from El Paso phase sites suggests that the production of domesticated crops had to be augmented with wild resources. Some scholars have suggested that varieties of *Zea* having different maturation rates may have been grown in different environmental zones (Mauldin 1986, Stuart and Gauthier 1981:218).

Regional interaction during this phase appears to reach a maximum. This is perhaps best indicated by the presence of non-local ceramics, such as Mexican Polychrome and Tucson Polychrome (Abbott et al. 1996:243, Elyea 1987:37-38). Regional interaction is also seen in the presence of marine shell from the Pacific and Gulf Coast and copper bells from Mexico (Abbott et al. 1996:237-238, Duran 1984, LeBlanc and Whalen 1980:382, Lehmer 1948, Stuart and Gauthier 1981:214).

Chipped stone and ground stone assemblages from the last two phases of the Formative appear to have undergone significant modifications. Ground stone expanded to include slab, basin, and trough varieties. Lithic assemblages included locally obtainable materials and centered around the production of expedient tools and flakes (Anyon and LeBlanc 1984, Chapman 1977, Laumbach 1980a). In general, projectile points were much smaller and even more varied during this phase. Whether this pattern indicates a return to increased regional differentiation similar to that found during the later Archaic period continues to be an issue of major interest.

The nominal end of the Formative Period is thought to date to around 1400 A.D. The causes underlying the "abandonment" of southern New Mexico remain obscure (Abbott et al. 1996:48-49). Several authors have recently suggested that there was no abandonment *per se*, but rather a shift in adaptive strategies that resulted in the location of settlements in areas that have not been subject to intensive archaeological surveys. This supposition, however, is not supported by evidence now available (Upham 1984, Stuart and Gauthier 1981,

Adams 1980). This settlement shift, if it indeed did occur, would necessarily involve an extensive, low investment strategy (horticulture, hunting/gathering) more typical of very early times, rather than the intensive, high investment strategy that seems to characterize the archaeological record immediately prior to A.D. 1400.

Historic Native Americans

At the time of first contact with Native Americans, Spanish explorers noted a myriad of small groups of hunter-gatherers situated along the margins of the Rio Grande River. Among the many names assigned to these groups were Sumas, Jumanos or Quemanderos and, finally the Apaches (Forbes 1957). These groups lacked the large agricultural villages that were the foundation of Spanish colonization policies which required access to native land and labor. Therefore, these groups were largely ignored. Because of this, there is a corresponding dearth of documentary information about Native Americans in southern New Mexico throughout most of the Spanish period.

The Suma groups thought to have occupied western Chihuahua as far north as El Paso disappear from narrative accounts between 1680—1710, although it is not certain whether their absence from documents signals their disappearance as ethnic groups. They may well have been absorbed into the Chiricahua Apaches of southeastern Arizona (Forbes 1957:321) inasmuch as intermarriage between groups is thought to have been common (Forbes 1957:326). There is also evidence to suggest that Sumas were confounded with adjacent Manso groups (Forbes 1957:328). Sumas in the El Paso area remain prominent in documents as a thorn in the side of Spanish authorities well into the 1700's (Forbes 1957:332), but were so decimated by smallpox that, by 1762, their population was sent to join Lipan groups at San Lorenzo (Opler 1974:341).

Manso Apache groups occupied the Jornada del Muerto between El Paso and Las Cruces no later than 1630. By 1659, Manso groups already residing in the El Paso area had been consolidated at Nuestra Señora de Guadalupe de los Mansos (Opler 1974:343). By 1683, a second rancheria containing Mansos is noted at the church of San Francisco de los Mansos—situated within 8—9 leagues from El Paso.

Not all Manso elements remained at the mission. Documents suggest that the Spanish drew a distinction between "civilized" and non-reservation Manso elements (Forbes 1957:325-326, Opler 1974:344). This is especially true following the Pueblo Revolt in 1680 and the subsequent withdrawal of Spanish forces to the El Paso area. Such non-missionized groups may have persisted throughout the 1700's (Forbes 1957:332), but disappear shortly from narratives of the region.

By 1796, all of the native tribes in the area were referred to as Apaches, although numerous regional subgroups were recognized (Matson and Schroeder 1957:337). While uncertainty remains, it is thought by some that Mescalero Apachean elements were situated in the project area by the late 1690's and certainly no later than the 1780's (Ray 1974:179, Opler 1974:349). Like the

Mansos, the Mescaleros were mobile hunter-gatherers. Consistent with this adaptive pattern, population densities appear to have been quite low. Population estimates from 1847 suggest that no more than 1,500 Mescaleros were in the region north of El Paso (Ray 1974:182, 207). In this region they remained largely undisturbed until the arrival of Anglos in the 1850's. By 1862, systematic military campaigns were launched by the Army against the Mescalero culminating in their reduction to the Bosque Redondo and Ft. Stanton reservations.

Modern Native Americans in the Las Cruces area appear to consist of displaced elements of the Piro- and Tiwa-speaking northern pueblos who were relocated southward to El Paso following the Pueblo Revolt in 1680. Opler (1974:347), relying on Bolton, suggests that they may derive from those initially settled at Sacramento Pueblo (see also Bloom 1903), or perhaps Ysleta. By 1901, intermarriage with Spanish elements resulted in the almost complete disappearance of Tiwa-speaking natives at Ysleta.

Archaeological studies of sites associated with the activities of such groups is lacking. Matson and Schroeder's translation of Don Antonio Cordero's 1796 account of Apaches in the vicinity of El Paso shows that these groups were characterized by high mobility, reliance on a variety of wild plant and animal resources, and rather minimal cultivation of domesticated crops (1957:338-339, see also (Mauldin et al 1998:18). Crops were pot-irrigated (Matson and Schroeder 1957:fn12). Fire-drives of game are also noted as having been practiced during the summer months (Matson and Schroeder 1957:344), often burning areas in excess of nine square leagues. However, some studies have been completed (Hammond and Rey, 1929) and additional attention has been given to these historic groups.

The Recent Period

Despite sporadic Spanish and Mexican military campaigns, the Mescalero Apache continued to occupy much of their traditional homeland in the Sacramento Mountains, ranging westward across the Tularosa Basin. The Mescalero began to acquire horses from the Spanish by the mid-1600s, thereby increasing substantially the geographic scale of their hunting and gathering activities (Dobyns 1973:9-10). Even with the introduction of European diseases, the late seventeenth century was probably characterized by accelerated population growth among the Mescalero (Dobyns 1973:12).

By the early eighteenth century, other nearby tribes—notably the Utes and Comanches—had acquired horses and firearms. This ushered in a period of protracted, intense warfare among native peoples during which the Mescalero found themselves caught between the Spaniards along the Rio Grande to the west and Plains Indians to the east (Dobyns 1973:18-21). Facing daunting odds of survival, the Mescalero entered into a period of relative peace with the Spanish beginning in the 1760s (Dobyns 1973:25).

The collapse of the Spanish Empire in 1823, accompanied by replacement with Mexican authorities, caused yet another outbreak of warfare. Mexican government practices were, at best, ineffective along the northern frontier, allowing Indian groups—including the Mescalero—to resume raiding all across the frontier (Dobyns 1973:33-37). Raiding continued to typify Euro-Indian relations until 1850.

Perhaps the most important factor affecting the El Paso region was the establishment in 1849 of the military outpost of Fort Bliss near Smith's Ranch (Jamieson 1993:1, Thomlinson 1945:1). Initially intended to provide protection to travelers making their way to California, the cavalry soldiers of Ft. Bliss found themselves riding as far west as the Arizona state line and as far east as the Big Bend country.

The importance of Ft. Bliss waxed and waned depending on such events as the Civil War and Indian raiding. Consequently, the fort's location shifted a number of times during the mid-late nineteenth century (Harris and Sadler 1993:1, Sonnichson 1968:128). In 1854 it was moved to Magoffinsville where it subsequently was seized by Confederates in 1861 (Sonnichson 1968:155, Thomlinson 1945:7, 13). In 1868, after the Civil War, the fort was moved again to a temporary encampment on the Stephenson Ranch (Thomlinson 1945:17-19) and, in 1876, this post, too, was abandoned (Thomlinson 1945:21).

In 1879, following closely on the heels of Indian raids and the "Salt War" (1877), Ft. Bliss was reestablished near Hart's Mill (Sonnichson 1968:210, Thomlinson 1945:23). By 1890, with the arrival of rail service into El Paso, Ft. Bliss was again moved, this time to its present location (Thomlinson 1945:29-30). Since 1890, and particularly since 1945, Ft. Bliss has gradually expanded its holdings so that it now includes almost a million acres.

Of particular importance is the acquisition of the Castner Range, location of one of the parcels discussed in this report. According to Thomlinson (1945:37-38), an initial piece of the Castner Range was acquired in 1928 and, in 1932, it was expanded to its current 3520 acres (Harris and Sadler 1993:107, Jamieson 1993:42-43).

Archaeological Methods and Results

The inventory of the three alternate INS parcels discussed in this report conformed to State of Texas and Federal recording standards. The locations of all isolated occurrences (IOs) and archaeological sites were determined using a Trimble® Scoutmaster to obtain global positioning system (GPS) readings. The locations of isolated occurrences were based on the average of 10 independent geositional readings, while site locations were determined using the average of 20 independent readings. Site locations are presented using standard Universal Transverse Mercator Grid (UTMG) coordinates based on the NAD27 datum. Photographs of each site were taken.

A systematic inventory of trash areas was completed to determine the age and content of artifact assemblages from each mine. When trash areas were relatively small and/or artifact densities were relatively low, complete (100%) counts of all surface artifacts were completed. As sites increased in either size or surface artifact densities, data were collected from sample units to provide estimates of surface artifact densities, as well as spatial variability in the distribution of artifacts. In-field artifact analyses, discussed in more detail below, were completed at all of the sites and IOs found in the project area.

The majority of artifacts encountered during this project were of historic vintage. Accordingly, in-field analyses focused primarily on historic artifacts. Tallies were made of the number of artifacts according to major classes or types (i.e., glass, cans, ceramics, cartridges). Particular attention was given to recording makers' marks. Standard guides to makers' marks are incorporated by reference and include:

- | | |
|--------------------------------|---------------------------------------|
| 1. Barnes (1989) - cartridges | 7. Kovels' (1986) - ceramics |
| 2. Davis' (1974) - misc. | 8. Morris et al. (1994) - misc. |
| 3. Fike (1987) - bottles | 9. Rock (1978) - cans |
| 4. DeBolt (1994) - ceramics | 10. Toulouse (1971) - bottles |
| 5. Iverson (1989) - shotshells | 11. Ward et al. (1977) - misc. |
| 6. Jones (1961) - bottles | 12. White/Munhall (1977) - cartridges |

Makers' marks were pivotal in estimating the age(s) of refuse deposits at historic sites found in the alternate parcels. Where historic artifacts are found, age was estimated by averaging the product of the frequency of each item by the midpoint of the production period for that item. For example, if an item was produced between 1900-1930, the midpoint of the production period would be: $(1900 + (1930-1900)/2) = 1915$. Accordingly, age will be computed as:

$$\text{Age} = \sum f_i (\text{midpoint age}_i) / n_i \quad \text{where } f_i = \text{frequency of item } i \\ \text{where } n_i = \text{number of datable items}$$

Accordingly, if a site contained 10 items produced between 1900-1930 and 4 items produced between 1890-1920, the estimated weighted age of the site containing these items would be:

$$\text{Age} = 3 (10(1915)) + (4(1905))/14 = 1912.14$$

Where large numbers of items with identifiable makers' marks were found, frequency distributions showing the cumulative age(s) of artifact assemblages from a site are presented. This proved useful in identifying sites containing remains from two or more time periods.

In addition, seriation of evaporated milk containers was also used to establish the age of sites in the project area. Dubbed "Tin Cows" by soldiers during the Spanish-American War, evaporated milk containers exhibit known differences in can sizes that allow them to be used to calibrate age estimates

from historic sites. Fontana et al. (1962:74-74) first used differences in evaporated milk can dimensions to seriate nineteenth and early twentieth century Anglo ranching sites. Later, Ward et al. (1977:240-24) extended this seriation method to historic Navajo sites in New Mexico. Most recently, Simonis (1998) has refined evaporated milk can seriation to include types manufactured between 1875-1985. A cross-tabulation of can diameter and can length, along with associated periods of can production, is summarized in Table 1 below.

Table 1
Evaporated Milk Can Seriation (From Simonis 1998)

Height (in)	Diameter (in)		
	2 7/16	2 8/16	2 15/16
2 6/16	N/A	1917-1930 (w/o rings) or 1931-1948 (w/4 embossed rings)	N/A
2 7/16	1931-1948	1920-1930	N/A
2 8/16	1920-1931	1915-1925	N/A
2 15/16	N/A	1950-1985	N/A
3 14/16	N/A	N/A	1917-1929 (no text) or 1935-1945 ("Punch here")
3 14.5/15	N/A	N/A	1975-1985
3 15/16	N/A	N/A	1930-1975 (later w/3-5 embossed rings)

4	N/A	N/A	1917-1929
4 4/16	N/A	N/A	1917-1929
4 6/16	N/A	N/A	1915-1930

Results: Parcel #1

Parcel #1 is situated on the Castner Range on Department of Defense holdings at Ft. Bliss, Texas. The parcel is situated on the north side of Hondo Pass Road west of U.S. 54 (Gateway South) and immediately east of the Northgate Dam (LOCATION DELIBERATELY REMOVED). The parcel is an irregular polygon measuring approximately 800 (NS) X 800 (EW) meters and encompasses a total of approximately 58.5 acres.

An examination of vintage 1955 U.S.G.S. 7.5 quadrangles for the northern part of Parcel #1 shows that rail systems -- presumably for moving artillery from one emplacement to another -- and observation towers once dotted this part of the Castner Range (LOCATION DELIBERATELY REMOVED). There is no remaining surface evidence of any of these structures; their absence is due most likely to the effects of construction of the North Gate retention dam.

Parcel #1 is situated in the lower bajada along the east-facing slopes of the Franklin Mountains. Vegetation consists of creosote, mesquite, yucca, acacia, cacti, and various grasses.

The surface inventory of Parcel #1 included a pedestrian survey in which crew spacing averaged 15 meters. In contrast to other parcels, shovel test pits *were not* excavated in Parcel #1 due to the hazards posed by potential unexploded ordnance. What follows is a discussion of the results of (1) isolated occurrences recorded during the survey and (2) archaeological site inventories completed for this parcel.

Shovel Test Pits

No shovel test pits were excavated in Parcel #1 due to potential hazards posed by unexploded ordnance.

Isolated Occurrences (IOs)

A total of 59 isolated occurrences were found on the surface of Parcel #1.

The locations of these isolated occurrences are presented in (LOCATION DELIBERATEDL REMOVED). The overwhelming majority of isolated occurrences consisted of historic period artifacts (LOCATION DELIBERATELY REMOVED). Approximately equal proportions of glass bottle/container fragments and cans were found across the project area. Smaller numbers of firearm cartridges and automobile parts were

also found. As will be demonstrated, these isolated artifacts mirror the general character of the historic sites found in Parcel #1. As a consequence, these items likely represent, in effect, a “debris field” surrounding these historic sites.

Archaeological Sites

Situated in Parcel #1 are two (2) archaeological sites (LOCATION DELIBERATELY REMOVED). The first is a very large historic site dating to the mid-twentieth century. The second is a prehistoric site dating to the late prehistoric period. Each of these sites is discussed in detail below.

41EP5525

41EP5525 is located along the southwestern edge of Parcel #1 and consists of eighteen (18) spatially distinct loci, designated Loci A-R. The total area of the site is an irregular polygon measuring a maximum of 200 (NS) X 200 (EW) meters.

41EP5525 represents a historic, mid-twentieth century trash dump. The highest density part of the site is situated along the eastern margin, with lower densities characterizing the remainder of the site (LOCATION DELIBERATELY REMOVED). Surface artifact densities vary from almost 0 items/m² to upwards of 100 items/m².

The artifact assemblage consists primarily of glass bottle fragments, with relatively smaller proportions of tin cans. As well, there are perfume bottles, children’s toys, firearm cartridges, and other more unusual artifacts intermixed with these items. The artifacts are consistent with household domestic refuse; industrial or military refuse is absent.

The eighteen spatially-discrete loci making up the site seems to reflect time-sequent dumping events ranging in age from the mid-1930s to the mid-1950s. More recent artifacts are found toward the center of the site, with progressively older artifacts distributed toward the site’s margins.

Detailed information was obtained regarding the place of manufacture of various artifacts recovered from 41EP5525. The Owens-Illinois bottle fragments were produced – in declining order of frequency – in Illinois, West Virginia, Pennsylvania, California, and Ohio.

When combined with place of manufacture data from other artifacts recovered at the site, a relatively comprehensive view of the participation of the site's residents in regional, national, and international distribution networks emerges. Specifically, the overall diversity of manufacturers of artifacts from 41EP5525 was estimated by tallying the number of states represented among the artifacts from the site and then dividing this value by 50 (50 states). Manufacturers from 19 different states can be identified in the assemblage, so that the overall diversity is:

$$\text{Diversity} = 19/50 = 0.38$$

At the same time, manufacturers from Mexico, England, and Puerto Rico are also represented in the site's assemblage. Considered together, artifacts from this site represent a broad cross-section of manufacturers from across the United States. However, manufacturers from Ohio and West Virginia, both situated in America's industrial heartland, comprise the largest proportions of artifacts from the site (Figure 2).

The reason for this diversity may lie in El Paso's role as a critical railroad hub in the Southwest. By the 1930s, myriad railroad companies were passing through El Paso, permitting its residents to obtain goods from manufacturers across the country.



Figure 2. Geographic Origin of Artifacts from 41EP5525 (line width proportional to representation).

41EP5526

41EP5526 is a low-density prehistoric sherd scatter located at (LOCATION DELIBERATELY REMOVED). It is situated adjacent to a small arroyo that drains eastward from the Franklin Mountains. There are 36 sherds, including one incised redware sherd fragment, distributed over an area of 35 (NS) X 50 (EW) meters. There is also one large quartzite primary flake associated with these sherds. Surface artifact density averages 0.02 items/m².

There is a pronounced clustering of artifacts toward the center of the site, with a gradual decline in artifact densities away from this concentration. The assemblage as a whole is not very diverse, notably lacking chipped stone and ground stone artifacts. There is no surface evidence of hearths, structures, or other features. Considered jointly, this evidence suggests that the site represents a short-term, limited activity occupation. The approximate age of this site is estimated solely on the basis of the single Playas Red Incised sherd fragment found on the surface. On this basis, the site dates to approximately ca. A.D. 1075-1400 (Abbott et al. 1996:242-243).

Results: Parcel #2

Parcel #2 is located along the west side of U.S. 54 immediately north of the junction of McCombs Road and Gateway South (LOCATION DELIBERATELY REMOVED). The parcel measures 2600 X 600 ft and encompasses approximately 40 acres.

The surface inventory of Parcel #2 included a pedestrian survey in which crew spacing averaged 15 meters. As well, shovel test pits were excavated to evaluate the potential for subsurface deposits. What follows is a discussion of the results of (1) shovel test pit excavations, (2) descriptions of isolated occurrences, and (3) discussion of archaeological sites that were located.

Shovel Test Pits

A total of 16 shovel test pits were excavated in Parcel #2. Test pits averaged 1 m² in extent and varied between 10-30 cm in depth depending on the amount of surficial blow sand. No artifacts were found in any of these test pits.

Isolated Occurrences (IOs)

A total of 59 isolated occurrences were found on the surface of Parcel #2. The locations of these isolated occurrences are presented in (LOCATIONS DELIBERATELY REMOVED). Without exception, all of the isolated occurrences consisted of historic period artifacts. Approximately equal proportions of glass bottle/container fragments and cans were found across the project area. Smaller numbers of firearm cartridges and automobile parts were also found. As in Parcel #1, all of the isolated artifacts found in Parcel #2 date to the early twentieth century and mirror the types and ages of artifacts found on more formal, bounded archaeological sites. Again, isolated artifacts seem to represent a "debris field" surrounding such sites.

Recent Disturbances

Perhaps the most obvious impact to Parcel #2 has been the construction of a variety of ranching and recreational features. Among the features related to ranching are one earthen stock tank and the concrete foundation for a metal water tank; both appear to have been abandoned some time ago.

Second, toward the middle of the parcel are the remnants of two asphalt runways used by model airplane enthusiasts. Examination of the surface of this complex suggests that the ground was bladed prior to the construction of these facilities, so that historic artifacts in the immediate vicinity are pushed up along the margins of this complex.

41EP5527

41EP5527 is a very large historic site located in Parcel #2 at (LOCATION DELIBERATELY REMOVED). This site extends approximately 200 (NS) X 215 (EW) meters and covers approximately 27 percent of the parcel (LOCATION DELIBERATELY REMOVED).

Artifacts consist primarily of surficial trash. The overall surface artifact density averages 0.01 artifacts/m². At the same time, localized refuse areas are far more dense, varying between 1 and 33 artifacts/m².

The assemblage content and spatial distribution of artifacts were defined using 63-1 X 1 m sample units distributed across the site's surface. The majority of artifacts consist of glass fragments; cans and ceramics are scarce over much of the site.

There are localized clusters of relatively high density artifact concentrations interspersed between areas that are almost void of surface artifacts. This clustering effect undoubtedly represents a succession of discrete dumping episodes that, cumulatively, led to the formation of the site as a whole.

What is less certain is whether these time-sequent events are manifested by variations in age across the site's surface. Detailed spatial analyses based on 63 sample units indicate that there is, indeed, spatial variability in site age moving across the surface. Earlier portions of the site are situated in the northeast and southwest, while relatively recent deposition has occurred along the west-central, and eastern parts of the site. In the latter instance, this is bounded by U.S. 54 and recent trash is rampant.

The overall diversity of manufacturers of artifacts from 41EP5527 was estimated by tallying the number of states represented among the artifacts from the site and then dividing this value by 50 (50 states). Manufacturers from 9 different states can be identified in the assemblage, so that the overall diversity is:

$$\text{Diversity} = 9/50 = 0.18$$

The majority of artifacts – firearm cartridges -- originate in Connecticut, with beer bottles produced in Missouri the second most common item (Figure 3). This represents much lower diversity compared to artifacts found in Parcel #1 and is consistent with reduced access to manufactured items at this earlier time period.



Figure 3. Geographic Origin of Artifacts from 41EP5527 (line widths proportional to representation).

Results: Parcel #3

Parcel # 3 is situated along the east side of U.S. 54 (McCombs Road) between Sarah Anne Avenue and Sean Haggerty Road, immediately south of Fire Station No. 28 (LOCATION DELIBERATELY REMOVED). The parcel measures 1360 X 1360 ft and encompasses approximately 42.5 acres. Vegetation consists primarily of creosote bush.

The surface inventory of Parcel #3 included a pedestrian survey in which crew spacing averaged 15 meters. As well, shovel test pits were excavated to evaluate the potential for subsurface deposits. What follows is a discussion of the results of (1) shovel test pit excavations, (2) descriptions of isolated occurrences, and (3) discussion of any archaeological sites that might have been located.

Shovel Test Pits

A total of 16 shovel test pits were excavated in Parcel #3. The distribution of these test pits across the parcel is presented in (LOCATION DELIBERATELY REMOVED). Test pits averaged 1 m² in extent and varied between 10-30 cm in depth depending on the amount of surficial blow sand. No artifacts were found in any of these test pits.

Isolated Occurrences (IOs)

A total of six (6) isolated occurrences were found on the surface of Parcel #3. The locations of these isolated occurrences are presented in (LOCATION DELIBERATELY REMOVED). With one exception, all of the isolated occurrences consisted of historic period artifacts.

Archaeological Sites

No prehistoric or historic archaeological sites were found during the surface inspection of Parcel #3. A supplemental test pit was excavated near IO #5 to determine whether subsurface deposits might be present. No such deposits were located.

Summary and Recommendations

This survey focused on three (3) parcels proposed as alternate facilities for construction of an Immigration and Naturalization Service facility. Parcel #1 encompassed 58.5 acres, Parcel #2 totaled 40 acres, and Parcel #3 aggregated 40 acres.

Parcel #1 contains 54 isolated occurrences and two archaeological sites. These remains are summarized below.

41EP5525 is a historic twentieth century trash dump composed of 18 loci, each of which correspond to spatially discrete dumping events. Of these, age estimates could be assigned to 17 loci. An evaluation of the frequency of modal age estimates indicates that most of these remains were deposited between 1940-1950. Refuse across all 18 loci consists of domestic trash consistent with day-to-day household activities. The recovery of toys and perfume bottles, as well as firearm cartridges, suggests that this refuse was deposited by households consisting of adult males and females, as well as small children. The overall geographic diversity of manufactured items from this site (.38) suggests that these households were integrated into wide-ranging national distribution networks. This is probably due to El Paso's role as a major railroad hub during the 1930s-1950s. Systematic in-field recording has largely exhausted the data potential of 41EP5525. Accordingly, no further mitigation measures are recommended at this site.

41EP5526 consists of a low-density prehistoric artifact scatter. There was no surface evidence of structures or other features. The site's assemblage consists primarily of undifferentiated El Paso brownwares and a single sherd of Playas Red Incised. Based on the recovery of this latter artifact, 41EP5526 is estimated to date to A.D. 1074-1400. The low density of artifacts, in conjunction with an absence of any features, indicates that no further mitigation measures are required.

Parcel #2 contains 59 isolated occurrences and a single historic site. These remains are discussed below.

41EP5526 is a twentieth century trash dump containing low density surface artifacts.

Age and surface density estimates were obtained from 64 sample units distributed across the site's surface. An evaluation of the frequency of age from 43 sample units for which estimates could be obtained indicates that most of these remains were deposited between 1890-1920. There is a secondary mode between 1940-1949 indicating that some parts of the site were subject to later trash dumping events. The overall geographic diversity of manufactured items from 41EP5527 is much lower (.18) than that observed at 41EP5525. Further, the preponderance of firearm cartridges and beer bottles reinforces the notion that refuse from this site reflects specialized activities – specifically, hunting and drinking – that differ, both quantitatively and qualitatively, from activities nominally associated with normal household activities. Systematic in-field recording has largely exhausted the data potential of 41EP5525. Accordingly, no

further mitigation measures are recommended at this site.

Finally, *Parcel #3* contains six isolated occurrences and no prehistoric or archaeological sites. Accordingly, no further mitigation measures are required.