

MUSEUM OF NEW MEXICO
OFFICE OF ARCHAEOLOGICAL STUDIES

**THE TRES PIEDRAS PROJECT:
ARCHAEOLOGICAL TESTING AT LA 71740,
TAOS COUNTY, NEW MEXICO**

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ADMINISTRATIVE SUMMARY

On July 13, 1989, archaeologists from the Museum of New Mexico's Research Section began a testing program at site LA 71740 (Carson National Forest No. AR-03-02-06-598), a lithic artifact scatter along U.S. Highway 285, south of Tres Piedras, Taos County, New Mexico. The site area is within and next to the eastern edge of the Tres Piedras Ranger District of the Carson National Forest. LA 71740 was first recorded in May 1989 during an archaeological inventory survey of U.S. Highway 285 in the vicinity of Tres Piedras. The testing program was intended to provide information on the extent and nature of the site prior to planned highway construction.

Upon arriving at the site, the crew determined that the site is more complex than originally recorded. It consists of a concentration of artifacts with a high surface density, an adjacent area with a lower artifact density, and a dispersed artifact scatter. The testing plans were modified in the field, the site was remapped, and amended site forms were filled out. One small shovel test pit and five auger holes were placed in the major artifact concentration. Testing and remapping revealed the presence of significant cultural remains at the site. Using the estimated surface artifact density and the results of testing, between 2,500 and 16,000 artifacts are present in the concentration alone.

As a result of the remapping and testing of LA 71740, the New Mexico State Highway and Transportation Department has amended its planned activities in the vicinity of the site. LA 71740 will be avoided during highway construction, and a temporary fence will be erected around the site area to ensure avoidance.

Submitted in fulfillment of Joint Powers Agreement D03773 between the New Mexico State Highway and Transportation Department and the Museum of New Mexico.

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INTRODUCTION

On July 13, 1989, archaeologists from the Museum of New Mexico's Research Section began a testing program at site LA 71740 (Carson National Forest No. AR-03-02-06-598), a lithic artifact scatter along U.S. Highway 285 south of Tres Piedras, Taos County, New Mexico. The site area occurs in and near the eastern edge of the Tres Piedras Ranger District of the Carson National Forest. LA 71740 was recorded during an archaeological inventory survey of U.S. Highway 285 in the vicinity of Tres Piedras (Haecker 1989). The testing program, undertaken at the request of William L. Taylor of the New Mexico State Highway and Transportation Department, was intended to provide information on the extent and nature of the site prior to planned highway construction.

LA 71740, located about 7.25 km (4.5 mi) south of Tres Piedras, can be found on the [REDACTED] (Fig. 1). Site location information is provided in Appendix 1.

Upon arriving at the site, the crew found that it was more complex than originally recorded. The testing plans were modified in the field, the site was remapped, and amended site forms were filled out. Katherine H. Fuller, assistant archaeologist, and Jeffrey L. Boyer, project director, conducted the field work, and David A. Phillips, Jr., director of the Research Section, served as principal investigator. Testing took place under Carson National Forest Special Use Permit No. 70-03-02-2014-01-442.

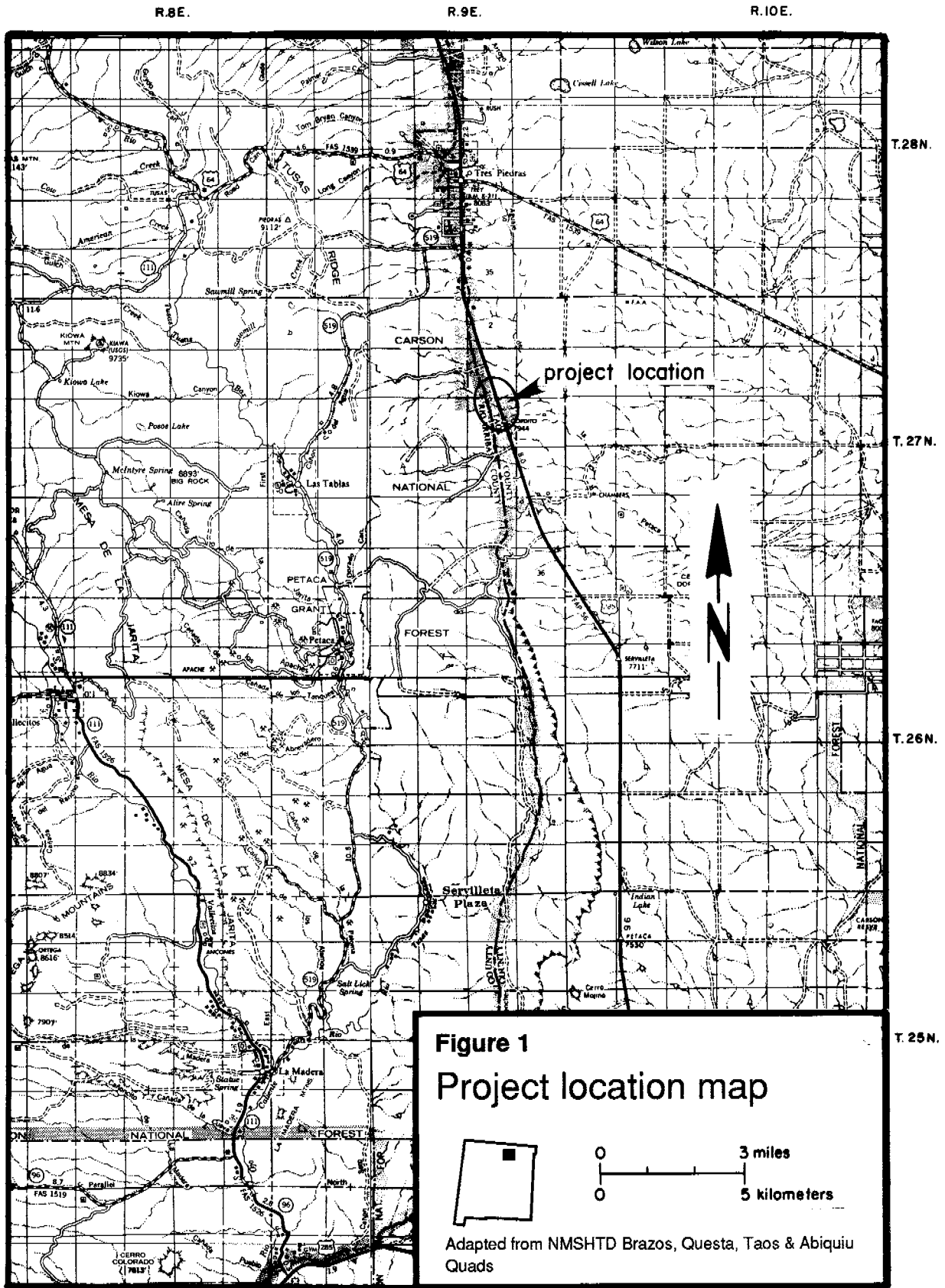
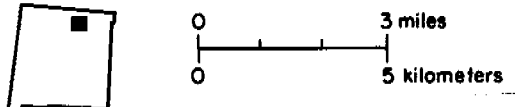


Figure 1
Project location map



Adapted from NMSHTD Brazos, Questa, Taos & Abiquiu Quads

THE NATURAL ENVIRONMENT

Geomorphology

The Tres Piedras project area lies near the western edge of the Taos Plateau, which in turn lies within the Rio Grande Depression or Trough. The Rio Grande Depression is a large, flat, block-faulted area bordered on the west by the San Juan Uplift (the Tusas and San Juan Mountains) and on the east by the Sangre de Cristo Mountains. Accumulation in the trough of volcanic and sedimentary materials resulted in the Santa Fe formation, consisting of a variety of gravels, sandstones, volcanic ashes, tuff, and bentonite, breccias, cherts, and clays. Much of the area, particularly on the western side of the trough, is capped by thick basalt flows (Heffern n.d.).

In New Mexico, the plateau is known as the Taos Valley, and in Colorado as the San Luis Valley. The rolling terrain of the plateau is bisected by the Rio Grande, which has cut a gorge up to 255 m (850 ft) deep through the accumulated material. To the west of the gorge, the area is dotted by volcanoes. To the east, it is characterized by alluvial fans and terraces from the Sangre de Cristo Mountains, although volcanic features such as Ute Mountain, Guadalupe Mountain, the Questa caldera, and associated basalt flows are present where the features have not been covered by alluvial material.

The major geological features -- the Santa Fe formation, the volcanoes, and the basalt flows -- are important culturally because they have provided raw lithic materials for the region's prehistoric and historic native inhabitants. Of specific importance are sandstone, chert, and quartzite from the Santa Fe formation, and basalt and obsidian from the volcanic features. San Antonio Mountain was apparently an important source of basalt on the western side of the plateau, and No Agua Mountain provided a poor quality obsidian (see Michels 1985).

Major rivers and arroyos in the vicinity of LA 71740 include the Rio Grande, the Arroyo Aguaje de la Petaca, the Arroyo Tio Gordito, and Comanche Canyon. The Arroyo Tio Gordito is immediately north of the site area. At present, it flows only during the spring snow melt and the summer rains.

Terrestrial Ecosystems Survey Units

Edwards et al. (1987) have conducted a Terrestrial Ecosystems Survey (TES) of Carson National Forest, resulting in the definition of 168 "terrestrial ecosystems." These units characterize specific regions in terms of the interaction of climate, soils, and plant communities and provide concise and informative descriptions of the natural environment.

LA 71740 is located at an elevation of 2,389 m (7,840 ft) in TES unit 119. The soils in this unit are fine, mixed, deep loams derived from various sources. They are found

on elevated plains with simple linear slopes averaging two degrees. Mean annual precipitation in this unit is 350 to 450 mm, with about 60 percent coming from winter snows and most of the remaining 40 percent from summer thunderstorms. The mean annual temperature is 8 to 10 degrees C (46 to 50 degrees F), and the growing season averages 120 days. The climate and soils support a woodland community of piñon (*Pinus edulis*) and big sagebrush (*Artemisia tridentata*). Minor amounts of juniper (*Juniperus monosperma* and *J. scopulorum*) and blue grama (*Bouteloua gracilis*) are present. Open areas and the eastern edge of the community, including the site area, are characterized by relatively greater amounts of sagebrush and grasses.

About 0.8 km (0.5 mi) west of the site, one enters TES unit 162. Like unit 119, the soils in unit 162 are fine mixed loams derived from various sources. They are found on plains with linear and convex slopes averaging three degrees. Mean annual precipitation is 450 to 550 mm, with about 55 percent coming from winter snows and most of the remaining 45 percent from summer thunderstorms. The mean annual temperature is 5 to 6 degrees C (41 to 43 degrees F), and the growing season averages 110 days. The unit is found at slightly higher elevations than unit 119, and the soils and climate support a forest community of ponderosa pine (*Pinus ponderosa*) and piñon (*Pinus edulis*). Minor amounts of juniper (*Juniperus scopulorum*), big sagebrush (*Artemisia tridentata*), Gambel oak (*Quercus gambelii*), and blue grama (*Bouteloua gracilis*) are present.

Recorded annual variability in precipitation at Tres Piedras averages 70 to 110 mm, about 20 percent above and below the mean (Cordell 1978:Map 6). Recorded annual variability in growing season averages 10 to 15 days, about 8-13 percent above and below the mean (Cordell 1978:Map 5). The area is generally suited for the historic and modern use of the land, which is grazing. Small-scale dry farming is known historically in nearby areas, but the considerable variability in precipitation and growing season would make such subsistence pursuits hazardous. Consequently, it seems likely that prehistoric use of the area was limited to hunting and gathering.

THE CULTURAL ENVIRONMENT

The northern portion of the Taos Valley is one of the most poorly known regions, archaeologically, in New Mexico. Most of the archaeological work in the Taos Valley has centered on an area 32 km (20 mi) in diameter, with the town of Taos at the approximate center. This project area, however, is located 56 km (35 mi) northwest of Taos, on the opposite side of the valley.

The following discussion provides a general background to the prehistory and history of the region and the results of archaeological projects in the vicinity of the project area. Cordell (1978), Stuart and Gauthier (1981), and Young and Lawrence (1988) provide more detailed regional syntheses. The detail included in this discussion is important for providing a succinct overview of this poorly known area and an appropriate context for the site and the testing project.

Paleo-Indian Period (ca. 10,000 to 6000 B.C.)

There is only limited evidence for Paleo-Indian occupation of the Taos Valley. Woosley has found fragments of fluted points in the Taos area. In 1961, Alexander (1964) found a "late Paleo-Indian point" on a Puebloan site near the mouth of Taos Canyon. The site was revisited in 1981 (Wood and McCrary 1981:11), but the point had apparently been retrieved by the earlier survey. Bases of Belen-Plainview points have been found on sites with later components at Guadalupe Mountain (Seaman 1983) and south of Carson (Boyer 1985b). Boyer (1988) found a reworked obsidian Folsom point at a site on the north side of Red Hill, a small scoria cone about 16 km (10 mi) north of LA 71740. The point was submitted for hydration dating but could not be dated because it was of an unknown obsidian (Condie and Smith 1989:26). However, its rind thicknesses were greater than those of an obsidian end scraper that yielded dates of 1989 B.C. and 3616 B.C. Muceus and Lawrence (1988) report a basalt point base with "a large basal thinning flake or flute taken off one side" from a site in the Meadow and L Tank Timber Sale area, near LA 71740. Finally, Boyer (1987a) reported an isolated Cody knife found in the mountains east of Pot Creek on the eastern side of the Taos Valley.

Cordell (1978:132-133) contends that the locations of known Paleo-Indian sites correspond to those areas of New Mexico where erosion has exposed ancient soil surfaces and thus brought the artifacts to light. If so, it may not be surprising that Paleo-Indian sites have not been found on the Taos Plateau, an area of regional soil accumulation and only local erosion. With the exception of the isolated Cody knife, the Paleo-Indian materials found so far have been on sites with later components. Paleo-Indian materials in their own contexts may be expected in areas of regional erosion, such as the Great Sand Dunes of the southern San Luis Valley (Hurst 1941), or at high elevations, where soil accumulation is less pronounced (Wendorf and Miller 1959; Boyer 1987a).

Archaic Period (ca. 6000 B.C. to A.D. 1100)

Between 1941 and 1946, E. B. Renaud (1942, 1946) undertook an extensive survey of the upper Rio Grande valley in New Mexico and Colorado. His work in this area focused on nonceramic sites, resulting in the definition of a cultural tradition he called the "Upper Rio Grande Culture." The borders of the culture area were defined as the Sangre de Cristo Mountains on the east, the Rio San Antonio on the west, and the highway between Tres Piedras and Arroyo Hondo (now U.S. Highway 64) on the south. The northern boundary was unclear to Renaud, except that occasional sites were found in the region of Del Norte, Monte Vista, Alamosa, and the Great Sand Dunes in Colorado (Renaud 1946:29). He also found sites along the Rio San Antonio between Monte Vista and La Jara Creek, in the areas of Dry Lake and the Great Sand Dunes, and from La Sauces to the state line (Renaud 1946:29-30).

Sites of the Upper Rio Grande culture were recognized by the presence of a diagnostic series of projectile points and the almost exclusive use of basalt and obsidian for chipped stone tools. A site excavated in 1942 established clearly that the Upper Rio Grande culture preceded Puebloan occupation or use of the area (Renaud 1942:31-34; Renaud 1946:30). Renaud also noted four kinds of sites: campsites, which could be divided into large, dense sites (near drainages) and "scattered finds" (small, sparse sites located some distance from a river or creek); workshops, where basalt outcrops are obviously quarried and tools produced (often located near campsites); lookouts, on exposed mesas, benches, or outcrops where a wide view was available; and rock shelters, such as the one that, when excavated, revealed the relative antiquity of the culture (Renaud 1946:30-33).

Renaud's findings indicated to him that there was a distinct correlation between site location and water, especially extant rivers and creeks or sizeable arroyos that might have run in the past (Renaud 1946:33). This conclusion may actually reveal a bias in his survey strategy, which was often to drive along dirt roads looking for likely spots on or near mesas, small hills, or rivers. Thus, for instance, he surveyed the west side of San Antonio Mountain, where the road is near Rio San Antonio, but not the east side of the mountain, where there are no large drainages.

More recent research on the Archaic period in northern New Mexico, particularly that of Irwin-Williams (1973) in the Rio Puerco region, indicates that Renaud's Rio Grande points are fairly typical Archaic points dating from the three earliest Archaic phases: Jay, Bajada, and San Jose (ca. 6000-1800 B.C.). This places the Archaic in the Taos area within the Oshara tradition. Examination of the drawings of Renaud's points (1942:pl. 1) shows the "typical" Rio Grande points to be Bajada and San Jose points, while Jay points make up his "Subtype 1," and another subtype consists of other points of uncertain type.

On the Taos Plateau, a sequence from the Jay phase (ca. 6000-4800 B.C.) through Basketmaker II (ca. A.D. 1-400 or 500) is reported by Hume (1973, 1974), Schaafsma (1975), Woosley (1980), Seaman (1983), Boyer (1984, 1985a, 1985b), Condie and Smith (1989), and Lawrence (1988a, 1988b) from sites and isolated occurrences on Garrapata

Ridge, Arroyo Hondo Valley, the Llano Quemado area, Guadalupe Mountain, Red Hill, San Antonio Mountain, the Carson area, and south of Tres Piedras. This time range spans the presumed development of "broad-spectrum" hunting and gathering and the introduction of domestic plants and agriculture in the Southwest. None of these sites in this region appears to reflect the development of a sedentary lifestyle, however; all are hunting and gathering sites.

Projects in the vicinity of LA 71740 point to intensive and long-term use of the area. With regard to sites and artifacts from the Archaic period, Muceus and Lawrence (1988) report 2 sites with Bajada points; 13 sites with large corner-notched points or fragments, assumed to be Late Archaic; and 4 sites with corner-notched points "in the size range of Archaic dart points" from the 150 ha (370 acre) Meadow and L Tank Timber Sale area, located 0.85 to 2.8 km (0.5 to 1.75 mi) southwest of LA 71740. Lawrence (1988a) reports 2 sites with Bajada points and 14 sites with large corner-notched dart points. An additional site had a large side-notched point, another a medium-sized side-notched point, and 11 sites had possible Archaic point fragments. All of these sites are from the 55 ha (135 acre) D-6 fuelwood sale north area, located 0.3 to 1.8 km (0.2 to 1.1 miles) southwest of LA 71740. From the 59 ha (145 acre) D-6 fuelwood sale south area, located next to the north area, 0.8 to 2.1 km (0.5 to 1.3 mi) southwest of LA 71740, Lawrence (1988b) reports 2 sites with Jay points, 1 with a Bajada point and a corner-notched point, 2 with Armijo points, 7 with large corner-notched points, and 3 with possible Archaic point fragments. Finally, Lawrence and Muceus (1988) report 2 sites with Jay points, 1 with a San Juan point, 8 with large corner-notched points, 2 with large and medium side-notched points, and 4 with possible Archaic point fragments from the 88 ha (218 acre) South Amador Timber Sale area. This area is located from 1.6 km (1 mi) southeast to 5 km (3.2 mi) southwest of LA 71740.

Puebloan Period (ca. A.D. 1100 to 1500)

Most discussions of the Puebloan period on the Taos Plateau stress the scarcity of Basketmaker and early Puebloan sites (see, for instance, Cordell 1978; Wood and McCrary 1981). Remains from Basketmaker and early Puebloan phases (Basketmaker II and III and Pueblo I in the Pecos classification; late Preceramic and early Developmental in Wendorf and Reed's [1955] classification) are identified only by isolated projectile points. While Woosley (1980) discusses the Developmental period in Taos prehistory, no Puebloan sites have been chronometrically dated to the early half of the period (A.D. 600 to 900).

The extent to which the western portion of the Taos Valley was used by Puebloan Indians remains largely unknown and is only suggested by the presence of potsherds on a few sites. Bullen and Bullen (1942) found plain ware sherds that they identified as Tesuque Smeared-Indented in a cave south of Tres Piedras. They suggest a temporary occupation in the Pueblo II and III periods. Boyer (1984) found two gray ware sherds on a site with a Basketmaker point at San Antonio Mountain. Condie and Smith (1989) collected six sherds from a site at Red Hill. The sherds were identified as being from a single vessel of Taos Incised, an Anasazi type produced between about A.D. 1100 and

1250. In the vicinity of LA 71740, Muceus and Lawrence (1988) report 2 sites with "micaceous" sherds and 1 with "plain utility" sherds. Without more detailed descriptions, it is not possible to determine whether the micaceous sherds are Puebloan or Apachean. Lawrence (1988a) reports 1 site with both micaceous and brown utility sherds, and 1 with gray utility sherds from the D-6 fuelwood sale north area. The south area contained 3 sites with micaceous sherds, 2 with gray utility sherds, 2 with corrugated or neck-banded sherds, 1 with a thick red or buff sherd (a Biscuit sherd?), and 1 with unidentified black-on-white sherds (Lawrence 1988b).

No sites with ceramics were recorded in the South Amador Timber Sale area (Lawrence and Muceus 1988). This area is located in the Ponderosa forest at a slightly higher elevation than the nearby piñon-juniper sale areas.

Clearly, at least a few sites in the area have Puebloan ceramics. However, the meaning of the presence of ceramics is not clear. For example, among the western Apache (Buskirk 1949, cited in Vierra 1984:32), pottery was not carried by the men on hunting or other similarly mobile excursions since it was too much of an encumbrance. If this is so, one must wonder why ceramics are present on artifact scatter sites. Traditionally, artifact scatters with ceramics are assigned to the culture of the ceramic producers. However, the concept of pottery as an encumbrance might indicate that those sites were not occupied by ceramic producers but by foragers who obtained the pottery in trade. If so, then the sites may represent forager basecamps.

Lithic artifact scatter sites lacking temporally diagnostic artifacts are more common in the area. For instance, Lawrence (1985) recorded 25 lithic artifact scatter sites in the Lamy Timber Sale area, northwest of Tres Piedras. Five of them had stone structures and rock cairns thought to be part of a game-drive system. Lithic scatter sites are known from the San Antonio Mountain area (Young 1982; Boyer 1984, 1985a), Red Hill (Boyer 1988), and along the Hernandez-Taos transmission line (Boyer 1985b, 1986), to cite only a few of the projects reporting such sites in the area.

In the immediate vicinity of LA 71740, Muceus and Lawrence (1988) report that of the 40 lithic artifact sites found in the Meadow and L Tank Timber Sale area, 17 had no diagnostic artifacts. Of the 49 sites recorded in the D-6 fuelwood sale north area Lawrence (1988a), 13 had no diagnostic artifacts, while 19 of the 45 sites in the south area had no diagnostic artifacts. In the South Amador Timber Sale area, 37 of the 63 sites had no diagnostic artifacts (Lawrence and Muceus 1988).

Without the presence of pottery or diagnostic projectile points, it is impossible to determine the age of these sites during survey. They probably represent temporary occupations, but whether they were part of Puebloan or forager adaptations is not clear.

Historic Period (A.D. 1500 to present)

The presence of historic Plains Indian groups in the region is recorded in early Spanish documents as well as in the archaeological record. For instance, one projectile

point collected from a site at San Antonio Mountain was tentatively identified as a Plains Yarbrough type made of local basalt (Boyer 1984). Spielmann's (1983) research indicates that economic interactions between Plains and Pueblo Indians were relatively minor prior to the late fifteenth century but increased considerably after that time. Archaeologically, this is reflected in a relative lack of Plains materials at Pot Creek Pueblo, which was abandoned around 1350 (Girard 1986:11). However, by the time of Spanish contact in 1540, the Indians of Taos Pueblo had established relations with Apaches, Kiowas, Utes, and other groups, promoted by annual trade fairs at the Pueblo.

Apachean groups from the Plains (Querechos, Vaqueros) regularly visited Taos Pueblo at the time of initial Spanish contact and there is some indication that some Apachean groups (Quinia Apaches, Apaches del Acho) may have resided permanently in the Taos area during the 17th century. Comanche attacks drove the Jicarilla Apaches westward from the Cimarron area into the Sangre de Cristo Mountains during the 1720s. Some Jicarillas settled in the mountain valleys between Taos and Picuris. [Girard 1986:11]

The presence of micaceous sherds at sites near Tres Piedras may point to an Apachean presence in that area as well, although micaceous pottery was produced prehistorically at the pueblos along the Rio Ojo Caliente, not far to the southwest.

The increasing presence of Spanish culture in northern New Mexico produced dramatic changes in land use and in the cultural and economic fabric of the region. The Spanish brought a different religion, social organization, and economy (including domestic animals and new plant foods) to the region.

Cordell (1978:121-129) suggests that the important historic research questions in the region include four issues: the development of small Hispanic settlements, the use of the region for subsistence and commercial pastoralism, the introduction and development of logging and logging railroads, and late nineteenth- and early twentieth-century mining activities. In the northwestern Taos Valley, three of these issues were largely dependent on the introduction of the Denver and Rio Grande Western (D & RG) narrow gauge railroad, known as the Chili Line. Under an 1880 agreement between the D & RG and the Atchison, Topeka, and Santa Fe (AT & SF), the D & RG began extending its Alamosa-Antonito line toward Santa Fe, although it could legally go only as far as Española. Through a series of legal maneuvers, the D & RG managed to purchase a small line between Española and Santa Fe, and by 1908, the Chili Line ran daily between Santa Fe and Antonito (Gjevre 1969:17).

The presence of the railroad encouraged widespread use of the northwestern valley for commercial pastoralism, and shepherds loaded animals and other pastoral goods at Tres Piedras, Servilleta, and Caliente. These towns, as well as Palmilla, Volcano, No Agua, and Barranca, were stations or "whistle stops" on the railroad. Along with pastoral products, the train carried the products of an active lumber industry. In 1888, the D & RG built at least one spur line into the Tusas Mountains west of Tres Piedras to facilitate the removal of the several million board feet of pine being taken from the mountains. In 1914, the station at Caliente was renamed Taos Junction when a 25.6 km (16 mi) spur was built from there to the village of La Madera, north of Ojo Caliente, also

for shipping lumber. The branch was abandoned in 1931, and four years later, when the government bought the land for a national forest, Taos Junction, once a thriving community with at least 175 families, was largely abandoned (Gjevre 1969:28, 41-48).

The Chili Line was abandoned in September 1941 due to bankruptcy. Although attempts were made to keep the line open, increasing automobile and truck traffic on improving highways discouraged use of the slow-moving train. The stations at Embudo, Barranca, Taos Junction, Servilleta, Tres Piedras, No Agua, Volcano, and Palmilla were abandoned, and the post office at Skarda, between No Agua and Volcano, was closed the following year (Pearce 1965:157). U.S. Highway 285 closely follows the railbed from Taos Junction to Antonito, and only the town of Tres Piedras remains of the stations along the line.

The abandoned railbed is visible to the east of the highway. Archaeological research in the area has not included the abandoned stations, and the exact locations of Volcano, Skarda, and No Agua are not clear. Boyer (1988) contends that a site found along the railbed north of Red Hill is the probable location of the Skarda stop.

Except for possible sections of the spur railroad lines, the historic lumber industry is not well known archaeologically. On the other hand, the presence of Hispanic shepherds is better known. In the open valley, Boyer (1984, 1985b, 1988) has recorded artifact scatters consisting of vegetable or fruit, sardine, and tobacco cans, which are probably the remains of sheep camps. Boyer (1987b) has also argued that recurring patterns of personal and village names carved on aspen trees reflect territorial land use by shepherds in the Tusas Mountains.

TESTING AT LA 71740

Site Description

LA 71740 (AR-03-02-06-598) is a lithic artifact scatter on the east side of U.S. Highway 285, immediately south of the Arroyo Tio Gordito. The site includes a single concentration of artifacts, an area of lower surface artifact density, and a dispersed artifact scatter (Fig. 2).

The concentration measures 5 m by 6.5 m and has an estimated surface artifact density of over 100 artifacts per square meter. This concentration is near the southern edge of the site. Next to the concentration is an area 11 m by 5 m with an estimated surface artifact density of 10 to 12 artifacts per square meter. Surrounding the concentration and the second area is a scatter of artifacts.

Primary lithic materials present are Polvadera-like and Jemez-like obsidian. No Agua obsidian is present in minor amounts, but basalt and white chert are. No temporally diagnostic artifacts were observed. A drill seen by Haecker was not located; however, a broken chert drill is present on the east side of the right-of-way fence. One broken mano is also present.

A "two-track" dirt road runs southeast from the highway at the north end of the site. It seems unlikely that either the two-track road or the highway has caused extensive disturbance to the site, which is located about 8 m east of the graded highway shoulder.

Testing Methods

Testing at LA 71740 was intended to define the extent and nature of any subsurface deposits and to examine the data potential of surface artifacts. The original testing plan called for the use of at least three 0.5 by 0.5 m or 1 m by 1 m test pits and a series of auger holes to search for subsurface features, and for field recording of the surface artifacts.

On arriving at the site, the crew remapped the site and amended the site forms to reflect its actual extent. This work demonstrated the presence of extensive surface remains at LA 71740. Consequently, the original need to examine the surface data potential no longer existed. Testing plans were modified to accommodate the actual situation.

A single 0.25 by 0.25 m shovel test pit was placed in the approximate center of the concentration. In addition, five auger holes were placed 1 m apart in a north-south line across the concentration. The test pit was excavated in arbitrary 10 cm levels to a depth at which no artifacts were found. All fill from the pit and the auger holes was screened through 1/4 inch mesh. All artifacts found in the fill were collected.

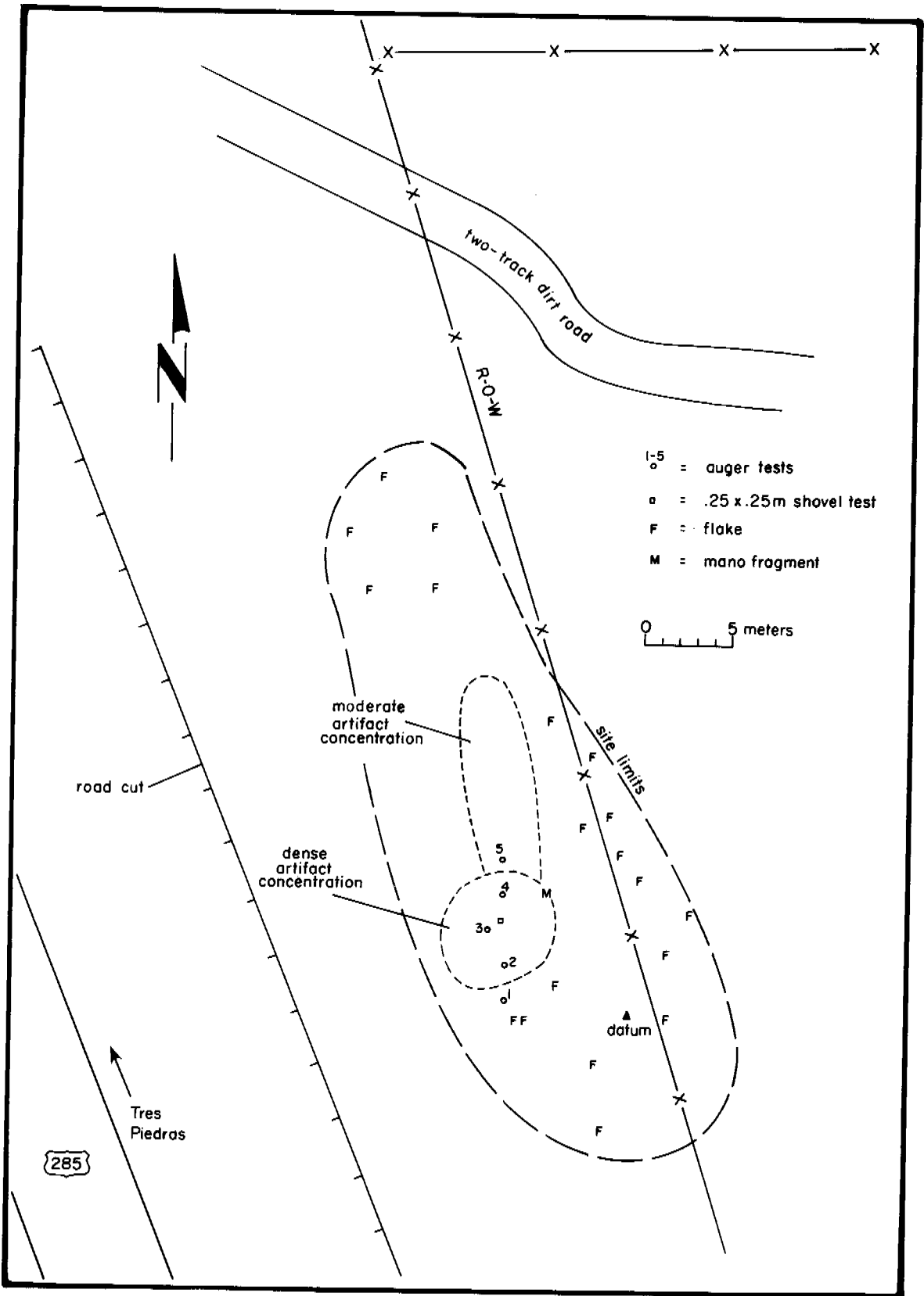


Figure 2. LA 71740 site map

Testing Results

The test pit was excavated to a depth of 15 cm below present ground surface. The pit revealed a loose topsoil layer about 3 to 4 cm thick. Beneath the topsoil is a layer of very hard, dry clay of unknown thickness. Artifacts appear to be restricted to the topsoil layer. Only one artifact came from Level 2, and it probably fell into that level from Level 1. Otherwise, the clay seems to be culturally sterile. The pit yielded 33 artifacts from the topsoil layer. By multiplying the estimated surface artifact density and the results of the test pit by the area of the concentration, it may be estimated that between 2,500 and 16,000 artifacts are present in the concentration alone.

The five auger holes revealed the same stratigraphy as that of the test pit. The holes were dug to depths approximating the bottom of Level 2. By then, augering had become almost impossible due to the hard clay. Auger Hole 3 yielded six obsidian flakes from the surface and topsoil layer.

No extensive subsurface deposits or features were revealed during testing, and the site has little potential for such deposits. This does not preclude the possibility that a buried hearth or similar pit feature may be present in the untested portion of the site.

Table 1 shows the 40 artifacts recovered by material and provenience. Clearly, Polvadera obsidian makes up the majority of the assemblage. Only one artifact of No Agua obsidian is present. Seven artifacts (17.5 percent of the assemblage) have cortex; percentages of cortex range from 10 to 100 percent. Four of the seven cortical flakes have more than 85 percent cortex, pointing to primary lithic reduction. The cortex is consistently waterworn, indicating that the source of the material was cobbles rather than a quarry.

Table 1. Artifact Material by Provenience

<i>Provenience</i>	<i>Polvadera</i>	<i>No Agua</i>	<i>Total</i>
Auger Hole 3	6	0	6
Test Pit 1, Level 1	32	1	33
Test Pit 1, Level 2	1	0	1
Total (%)	39 (97.5)	1 (2.5)	40 (100)

Table 2 shows the artifacts by provenience and debitage category as defined by Sullivan and Rozen (1985). No utilized flakes, retouched tools, or cores were collected. Only three artifacts showed platform preparation, one by grinding and two by crushing, and platforms could be defined on only eight artifacts. While no statement regarding the

entire site assemblage can be made from the small assemblage obtained during testing, the relative frequencies of debitage types in this assemblage closely resemble those in Sullivan and Rozen's category II, which they attribute to tool manufacture rather than core reduction. This is supported by two other factors: the low incidence of cortical flakes and the generally small size of the flakes (average artifact size: 1.2 by 0.9 by 0.2 cm).

Table 2. Debitage Category by Provenience

<i>Provenience</i>	<i>Complete</i>	<i>Broken</i>	<i>Fragment</i>	<i>Debris</i>	<i>Total</i>
Auger Hole 3	3	1	2	0	6
Test Pit 1, Level 1	4	3	20	6	33
Test Pit 1, Level 2	0	0	0	1	1
Total (%)	7 (17.5)	4 (10)	22 (55)	7 (17.5)	40 (100)

Discussion

Remapping of LA 71740 demonstrated that the site is more complex than originally recorded. The site appears not to have been extensively altered by highway construction or the nearby two-track road. Thus, it clearly contains extensive cultural remains occurring with some degree of integrity. Testing revealed that the site has little potential for extensive subsurface deposits or features, although their presence is not absolutely precluded. Testing also revealed that estimates of surface artifact density may be low, and the topsoil layer may contain several thousand artifacts. Consequently, LA 71740 has excellent potential for providing important information on local prehistory or history. Particularly, given the size and nature of the artifact assemblage, the site has potential for providing data on on-site activities and regional issues such as population mobility and the procurement and use of nonlocal materials. Further, the presence of obsidian from at least two sources presents the potential for chronometric dating. This is important because no temporally diagnostic artifacts are present on the site.

CONCLUSIONS

As a result of the remapping and testing of LA 71740, the New Mexico State Highway and Transportation Department has reevaluated its planned activities in the vicinity of the site. LA 71740 will be avoided during highway construction, and a temporary fence will be erected around the site to ensure avoidance.

The *New Mexico State Register of Cultural Properties* and the *National Register of Historic Places* have been consulted, and no sites currently on or nominated to either register lie within or adjacent to the project area. This project complies with the provisions of the National Environmental Protection Act, the National Historic Preservation Act as amended, Executive Order 11593, and the Archeological Resources Protection Act.

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