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# PERMIAN QUARTERLY

Permian Basin Programmatic Agreement Quarterly Newsletter

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A portable XRF (X-Ray Fluorescence) instrument is used to analyze the elements in the paint of a rock art figure. XRF is a non-destructive method to identify the elemental composition of paints used in the creation of rock art and it provides new information useful for the interpretation of individual figures and panels. A comprehensive rock art survey and recording project will be completed within the Carlsbad Field Office. See inside this newsletter for additional details.

## Introduction to the Permian Basin Programmatic Agreement (PA)

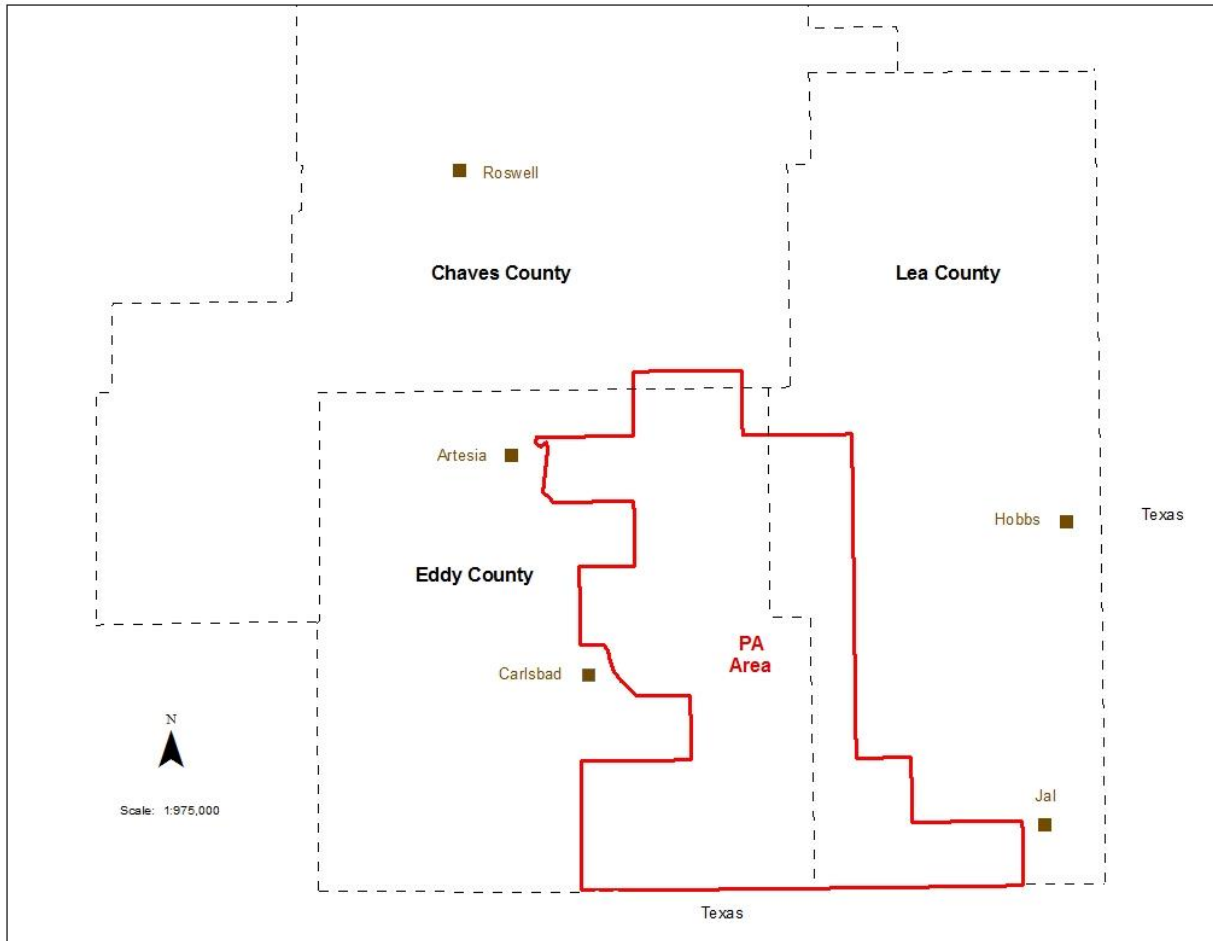


Figure 1. Map showing the Permian Basin PA Area.

The PA is an alternate form of compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, that is offered to the oil and gas industry, potash mining companies, and for other industrial projects located in southeastern New Mexico. The PA can be used for federal projects located on Bureau of Land Management (BLM) land or BLM sponsored projects located on private property. Originally begun as a Memorandum of Agreement (MOA), it was extended for a period of three years in April 2013 as a Programmatic Agreement (PA) and the PA was further extended for a period of 10 years beginning in May 2016. The PA area is located partially in Chaves, Eddy, and Lea counties. Proponents of projects within the PA area may contribute to a dedicated archeological research fund in lieu of contracting for project specific archeological surveys, provided their proposed projects avoid recorded archeological sites. This dedicated fund is then used to study the archeology and history of southeastern New Mexico.

## Current PA News

### Permian Basin Workgroup Meets in Carlsbad

The Permian Basin Workgroup met May 23 and 24, 2017 at the Carlsbad Field Office (CFO) to discuss the current status of the PA and to suggest future projects. The annual meeting included a discussion on Tuesday afternoon and a field trip on Wednesday to view prehistoric sites in the Mescalero Plain and Sacramento Section physiographic regions.

The Permian Basin Workgroup is composed of archeologists from the BLM New Mexico State Office, the Pecos District Office, and the Carlsbad Field Office; the New Mexico State Historic Preservation Officer; the federal Advisory Council on Historic Preservation; the New Mexico Archaeological Council; Native American tribes with historic ties to southeast New Mexico, represented by the Mescalero Apache Tribe Preservation Officer; a representative from the oil and gas industry; and academic archeologists with research interests in southeastern New Mexico. It was established to provide direction for archeological research conducted through the PA.

The Tuesday afternoon discussion was primarily concerned with future research projects and this discussion also incorporated comments about the recommendations contained in the report *Permian Basin Research Design 2016 – 2026* that were made by two researchers with expertise in the archeology of southeastern New Mexico. One topic recommended in the report, the study of village sites, was seconded by the Workgroup as important to understand the prehistory of the region.

Beginning circa 1100 A.D. and continuing until about 1450 A.D. the archeological record shows a significant difference in the number and types of archeological sites present in southeastern New Mexico. In this Late Formative period, sites are recorded as being fewer in number, but with dense artifact concentrations, dark soils created through a relatively long-term occupation, and the presence of distinctive pottery types not seen previously. One new type is Ochoa Indented Corrugated that to date is the only pottery that is recognized to have been made in southeastern New Mexico. Archeologists have interpreted this change to be related to a major shift in settlement pattern. Whereas people formerly moved across the landscape (presumably as families, or in small socially-related groups) camping for short intervals at numerous locations, they now were congregating in larger numbers at fewer locations and for longer periods of time. Although not all are true villages, these locations have evidence of this change to a more settled existence. Following later in this period are true villages such as the Merchant Site (circa 1300 – 1450 A.D.). Myles Miller, author of the report *The Merchant Site: A Late Prehistoric Ochoa Phase Settlement in Southeastern New Mexico* noted:

*Clearly, the Merchant site does not fit, in any dimension or form, the standard model of short-term settlements with low artifact densities. Densities of artifacts and animal bones at Merchant are equivalent to those documented among intensively-occupied pithouse villages and pueblo settlements in the western Jornada. These are important observations for a deeper understanding of the Merchant site. The Merchant site has roomblocks and refuse deposits that reflect long settlement durations and intensive occupations by multiple family groups. (Miller 2016:384).*

We can see a rough parallel in the modern day United States, although the underlying causes are not the same as those operating in prehistoric times. At the turn of the Twentieth Century approximately 39 percent of the American population lived on farms, but a hundred and ten years later that figure had fallen to 2 percent. Although not a complete explanation, the following factors partly explain this population shift. Farm mechanization is one obvious reason, fewer people are doing more work with power



machinery than with horse-drawn equipment, but other factors, such as the development of better yielding crop varieties and more efficient transportation networks to move farm products to markets also played a role. The end result was a movement of people to larger cities and towns for work and a consequent depopulation of the countryside, coupled with the decline of rural small towns.

Archeologists have just begun to examine this phenomenon of the appearance of village life in southeastern New Mexico and the recently completed remediation of the earlier circa 1960s excavations by the Lea County Archeological Society at the Merchant Site is the first step that has been taken. Future projects will define a roster of sites and questions to be answered that can contribute information to better explain this change. Whether and to what extent the underlying causes of this shift to village life can be determined remains an open question at present.

The Workgroup recommended other topics for further development into research proposals, such as studies of museum artifact collections, an evaluation of caves and rockshelters within the CFO, an expanded lithic source study, an examination of rock ring-middens, an archeological and geomorphological study of sites in the Salado Draw drainage, completion of an ethnographic study of plant use, and a proposal to better identify the origins of brownware pottery as an aid to discovering relationships in its distribution through time and space in the archeological record.



Figure 2. Workgroup members view rock art panels in the vicinity of Boyd's Cave.

A discussion of public education and outreach resulted in the interesting proposal to create a website similar to the Texas Beyond History (<https://www.texasbeyondhistory.net/>) website for New Mexico. This idea is appealing, but all seemed in agreement that although the PA might provide assistance in the beginning, a website could not be sustained by the PA and be successful in the long term. A Texas Beyond History type of website needs a stable institutional affiliation and a director with time to devote to its development. This proposal will require additional research into its feasibility.

The fieldwork portion of the meeting included an onsite discussion of the recording and testing of one of the sites examined in the report *An Assessment of Transect Recording Unit Survey and Subsurface Testing Methods at Four Sites in the Permian Basin, New Mexico*. This site was re-recorded using the Transect Recording Unit (TRU) method and then systematically tested using a range of hand tools, supplemented with trenches dug by a backhoe. The site surface has bedrock showing in places and shallow soils in others, but one portion of the site is covered with stabilized coppice sand dunes. The variety of ground conditions and the results of the testing that was done there provided topics for discussion, primarily between the SHPO staff and CFO archeologists that proved to be beneficial in providing guidance for the evaluation of other similar sites. Visits were also made to Boyd's Cave, a Mescalero Apache Traditional Cultural Property that also includes a small rock art site and rock ring-middens as components.

The Workgroup meeting was productive in developing ideas and topics for future research projects and it provided Workgroup members with the opportunity to view some of the archeological resources of the CFO first hand. The next annual meeting is tentatively to be held at the Mescalero Apache reservation, but the location and time have not been set.

#### Current Research in the PA

Currently three projects are in the process of being implemented: a rock art recording project, an evaluation of sites in the SW Slopes Physiographic region, and an assessment of the impact of the operation of the PA on the archeological record within the PA area.

#### Rock Art Study

The rock art recording project includes 21 sites located on BLM land within the CFO, plus one significant site located on private property for a total of 22 sites. Specifically, the project is to record in detail rock art at 12 sites, to find and record rock art at six locations that are reported to have rock art, but that have not been recorded, and to integrate information about four previously documented and analyzed sites into the results of the study.

Rock art is defined as petroglyphs that were incised, pecked, or abraded into exposed bedrock or rock eroded from it, and pictographs that were painted on the rock's surface. Rock surfaces containing art are not portable, so the distribution and arrangement of the different elements at each site are important to record. Recorded petroglyphs and pictographs include human and animal figures and various geometric designs. The sites contain primarily pictographs (19 sites), while petroglyphs occur at two of the sites. One site has a combination of petroglyphs and pictographs, but the type of art present at one of the locations to be surveyed is unknown.

This project will be comprehensive as it will include all known rock art sites on BLM land. The addition of the site on private property is a plus because of the extensive number of figures, both pictographs and petroglyphs located there. As befitting CFO's location at the interface of the Plains, the Chihuahuan Desert, and the Guadalupe/Sacramento mountains the rock art reflects cultural influences from different



Figure 3. Rock art elements at site LA 164284 are located high on a bluff overlooking Dark Canyon Draw.

regions. Horses and riders resemble those in the Plains, while miniature figures of humans and animals appear to be duplicates of those found farther south in the lower Pecos River valley, painted geometric designs replicate those found in the Rio Grande valley farther to the west.

The recording crew will also be reflective of the apparent multiple origins of the rock art, because it will include members of the Hopi and Mescalero Apache tribes. They will assist in recording and be able to offer interpretations. Tribal consultations will be held with representatives from the BLM and the Mescalero Apache and Hopi tribes upon completion of the project. Further consultation includes a field trip for elders from Isleta Pueblo who will visit rock art sites upon completion of the project and project materials will be reviewed by the Isleta del Sur Tribe Historic Preservation Officer as well.

The rock art recording project stands out for its comprehensive coverage, for its collaborative effort to include tribal members, and in its expanded consultation with tribes that have ancestral ties to the region. The results of this project are eagerly anticipated.

#### Evaluation of Sites in the SW Slopes Physiographic Region

This project includes the evaluation of 42 prehistoric sites. The southern portion of the Southwest Slopes has seen a sharp increase in oil and gas drilling in the last few years and the eastern portion of the study



area that lies within the Bond Draw and Cottonwood Hills USGS 7.5 Minute quadrangle maps was recently added to the Permian Basin PA area. The results of this study will contribute to an increased understanding of the prehistory of the study area and better management of the sites within this developing region.

The study area comprises a portion of the larger SW Slopes region. The landscape within the study area is primarily formed by erosion and most of the area has shallow soils 10 to 14 inches (25 to 35 cm) deep. Some soils are described as “stony” or “rocky” and areas of exposed bedrock are common. In the eastern portion of the study area soils can be 32 inches (81 cm) deep, but some of these deeper soils occur in swales or the bottoms of draws and these are not suitable locations for camp or village sites. Bedrock within the study area is composed of the Permian-age Castile formation consisting of anhydrite, gypsum, and small amounts of halite, dolomite, and sandstone. This formation outcrops in a broad belt south and southeast of the Black River.

Sites in the study area can be characterized as small and with few artifacts in their inventories. Except for a two-sigma date of 832 B.P. or A.D. 1170-1260, obtained from a sampled feature that had fire-cracked rock and charcoal at LA 169204 (which is included in the study) none of the sites within the study area have been excavated or dated. The sites will be evaluated by resurveying them using the Transect Recording Unit (TRU) method, by analyzing their artifact inventories and through small-scale excavations to define the number, size, and types of features, such as hearths or roasting pits, present at each site.

The sites to be examined include a number that have been previously determined to be “not eligible” for listing on the National Register of Historic Places. The determination of eligibility for listing on the National Register provides a standard for archeological site management and those that are not eligible are no longer managed. There are four criteria used for eligibility determinations, but these sites were evaluated under criterion “d. That have yielded or may yield information important in history or prehistory.” The majority of prehistoric archeological sites are evaluated under criterion d and their research potential is usually the yardstick through which “important information” is measured. Half of the recorded sites within the study area have been determined “not eligible,” primarily based upon their physical condition. These sites are located on bedrock or in thin soils. They have been heavily impacted by erosion that has destroyed features, such as hearths or roasting pits containing carbonized material, so there is no opportunity to obtain radiocarbon dates. Many have no diagnostic artifacts, such as pottery or projectile points, which eliminates the possibility of determining their places within the broad regional time periods, such as Archaic or Formative, that have been established. Viewed individually these sites have diminished or no research potential that would produce significant information, but it may be that when viewed collectively new insights may be gained. This project will examine the information potential of these sites and make a recommendation for determining future eligibility decisions.

Other sites included in the project do have features with carbonized material present that can be dated, as well as analyzed to determine the kinds of plants that have been burned for fuel and potentially used for food. One goal of the project is to construct a timeline, based upon radiocarbon dates, illustrating the settlement history of the study area. A number of other topics will be addressed:

- the definition of a site typology for the study area;

- the elucidation of a settlement pattern or patterns for the study area;
- determining the function and chronological placement of small sites containing five or fewer artifacts and three or fewer fire-cracked rock features;
- the creation of criteria for feature definitions;
- an examination of the patterns of lithic procurement, reduction, transport, use and discard;
- the identification of rock formations or formation members within or adjacent to the study area that potentially could provide sandstone, limestone, or dolomite for ground stone tools;
- the initiation of a ground stone tool typology for the CFO.



Figure 4. A view of the landscape in the SW Slopes Physiographic region.

These are ambitious goals, but achieving them will increase our knowledge of the archeology of this region and contribute a new chapter to the study of southeastern New Mexico archeology.



## Evaluating the Impact of the PA on the Archeological Record

Archeological survey is the first step in the study of any region. Determining the number, what kind of archeological sites are present, and their ages gives the archeologist a context in which to examine those sites. In the absence of any written records, the search for patterns in the distribution and association of sites and artifacts within a region is the primary method of learning about the past.

A major consideration in the creation of the PA area is the amount of survey that has been completed within its boundaries. Two studies were completed, one based upon site and survey records showed that once 10 percent of a defined area had been surveyed in a systematic manner the basic pattern of site locations in relation to the environment had been determined. The other study was the complete survey of a specific USGS 7.5 Minute Quadrangle map to demonstrate the validity of the 10 percent determination. The PA area boundaries are composed of USGS 7.5 Minute quadrangle maps and the minimum amount of survey within any included quadrangle map is 20 percent, but most have more. Seismic surveys to identify potential subsurface oil and gas deposits, which cover a specific area with a net of surveyed lines and linear project surveys, such as roads and pipelines, provide the primary systematic survey information that qualifies a quadrangle map for inclusion in the PA area.

The operation of the PA is based upon avoiding recorded sites and placing projects in “blank” areas of the constituent maps. The project sponsor contributes the cost of the archeological survey to the PA, but the survey is not completed. One underlying assumption is that if any unrecorded sites are located in the blank areas damage to them or their loss will be mitigated by research supported by the donated funds. Monitoring the operation of the PA has been through checks completed by CFO archeologists on an intermittent basis and this monitoring has turned up only a couple of instances when a project affected a site. In each of these cases the project proponent voluntarily adjusted the impact area of the project and CFO staff archeologists were able to examine it prior to construction. In each case the research potential of the site was saved.

This project is to examine a 10 percent sample of 1,658 projects processed under the PA during the period from May 1, 2013 to June 30, 2016 which coincides with the length of time during which the PA was first in effect. Any previously unidentified sites that have been affected by these projects will be found and the impact on their potential research will be evaluated. The results of this study will enable all interested parties to see the results of the operation of the PA on the archeological record of southeastern New Mexico and this in turn can provide information to guide the administration of the PA into the future.

## Other News from the Permian Basin

### New Location for Blackwater Draw Museum

The Blackwater Draw Museum has a new location in Lea Hall on the Campus of Eastern New Mexico University in Portales. The museum, located at 1457-1461 South Avenue K, features exhibits on the scientific research that has been conducted at the Clovis site over the past 85 years. Summer hours are 9:00 a.m. to 5:00 p.m. Tuesday through Saturday and 12:00 p.m. to 5:00 p.m. on Sunday. Telephone (575) 562-2103 for additional information. The Blackwater Draw (Clovis) site is located approximately 4 miles north of Portales on New Mexico 467. Summer hours for the site are the same as the museum hours.



Figure 5. This excavated area is protected from the elements within a building at the Blackwater Draw locality. A bison bone bed is exposed within a gray Archaic age stratum.

#### Newsletter Contact Information

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