# Gusher State Class I Inventory and Class III Survey of Proposed Drill Sites and Overland Route, Cochise County, Arizona

*Prepared by* D. Shane Miller

Prepared for Gusher State, LLC 11 North Saint James Place Eastborough, Kansas 67206



Overview of the project area, view to southeast.

October 2013 ASM Accession No. 2013-0479 WSA Technical Report No. 2013-55

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William Self Associates, Inc.



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# Submitted by William Self Principal Investigator

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# ABSTRACT

**Project Title:** *Gusher State Class I Inventory and Class III Survey of Proposed Drill Sites and Overland Route, Cochise County, Arizona* 

**Project Description:** Gusher State, LLC proposes to conduct mineral exploration drilling at two locations on land managed by the Arizona State Land Department (ASLD), about 11 miles north-northwest of Douglas in Cochise County, Arizona. William Self Associates, Inc. (WSA) was contracted by Gusher State to conduct a Class I inventory and a Class III survey in order to identify cultural resources in the project area that may be affected by the undertaking. Survey of the project area was conducted on October 4, 2013, by WSA archaeologists Shane Miller and Ted Eldridge, who surveyed the two locations within which the drilling is planned, and an access route that requires vegetation clearing or other improvements for use.

Agency: Arizona State Land Department

Project Numbers: WSA Project No. 2013-87

Land Status/Jurisdiction: Arizona State Land Department

**Location:** The project area consists of two drill locations totaling 4 acres and a single access route totaling 36.04 acres, all on ASLD land, located 11 miles north-northwest of Douglas in Cochise County, Arizona, in Township 22 South, Range 27 East, sections 19, 20, 21, and 22, as depicted on the McNeal, Leslie Canyon, Double Adobe, and Douglas NE, Arizona USGS 7.5-minute topographic quadrangles.

**Permit Numbers:** Arizona Antiquities Act Blanket Permit No. 2013-028bl; ASLD Permit Nos. 13-115963 (State of Arizona 1-21 well) and 13-115995 (State of Arizona 2-22 well)

Number of Surveyed Acres: 40.04 acres

Date(s) of Field Survey: October 4, 2013

Number of Cultural Resources: 1

List of Register-eligible Properties: 1

List of Ineligible Properties: 0

#### List of Properties for Which Eligibility Is Not Determined: 0

Assessment of Effect and Treatment Recommendations: No previously recorded cultural resources are located within the project area, and no new prehistoric archaeological sites were identified during the survey. WSA identified and recorded a single historic linear site (AZ FF:6:34 [ASM]) that is likely a segment of the Courtland Branch of the El Paso and Southwest Railroad, and recommended it as eligible for the NRHP under Criterion A. Consequently, WSA recommends that any travel on the railroad grade be restricted to rubber-tired vehicles, and that the grade not be impacted by any ground-disturbing actions. WSA further recommends that if any grounddisturbing improvement is required for access to the drill locations it be done to the east of and off of the grade.

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#### **INTRODUCTION**

Gusher State, LLC (Gusher State), proposes to conduct exploration drilling at two locations on land managed by the Arizona State Land Department (ASLD), about 11 miles north-northwest of Douglas in Cochise County, Arizona. William Self Associates, Inc. (WSA), was contracted by Gusher State to conduct a Class I inventory and a Class III survey in order to identify cultural resources in the project area that may be affected by the undertaking. Survey of the project area was conducted on October 4, 2013, by WSA archaeologists Shane Miller and Ted Eldridge, who surveyed the two locations within which the drilling is planned, and an access route that requires vegetation clearing or other improvements for use. The survey was conducted under Arizona Antiquities Act Blanket Permit No. 2013-028bl in compliance with the Arizona State Historic Preservation Office (SHPO) and the Arizona Antiquities Act.

#### **Project Location and Description**

The project area consists of two drill locations and a single access route, all on ASLD land, located 11 miles north-northwest of Douglas in Cochise County, Arizona, in Township 22 South, Range 27 East, sections 19, 20, 21, and 22, as depicted on the McNeal, Leslie Canyon, Double Adobe, and Douglas NE, Arizona USGS 7.5-minute topographic quadrangles (Figure 1). The two drill locations are square parcels that are 2 acres each for a total of 4 acres. An existing dirt road can be used initially to access the proposed project area, but an overland route will need to be cleared of vegetation or otherwise improved in order to access the proposed drill site locations. The linear corridor surveyed for the proposed overland route is approximately 100 feet (30 m) wide with a length of 3.03 miles (4.88 km) and covers a total area of 36.04 acres. It begins in the northern half of Township 22 South, Range 27 East, section 19 and continues south and then east through the southern halves of sections 20, 21, and 22. The routes and drill sites are on undeveloped land with native vegetation. Legal information for the proposed drill sites can be found in Table 1.

#### **Environmental Setting**

The project area lies within the Sonoran Desert section of the Basin-and-Range physiographic province of southern Arizona, a generally level region cut by numerous north–south trending ranges of fault-block mountains separated by broad valleys filled with alluvium and colluvium (Walker and Bufkin 1986). The biotic community is the Arizona Upland Subdivision of Sonoran Desertscrub. The project area is 11 miles north-northwest of Douglas in Cochise County, Arizona, in basin fill likely originating from the eastern slopes of the Pendergrass Mountains. The vegetation throughout the project area is classified as belonging to the Semi-desert Grassland biome (Brown and Lowe 1994).





					Square	
<b>Drill Site</b>	Township	Range	Section	Quarters (smallest to largest)	Meters	Acres
State of	22S	27E	22	SW <sup>1</sup> /4, SW <sup>1</sup> /4, SW <sup>1</sup> /4; NW <sup>1</sup> /4, SW <sup>1</sup> /4, SW <sup>1</sup> /4;	8,093.74	2.00
Arizona 2-22				NE <sup>1</sup> /4, SW <sup>1</sup> /4, SW <sup>1</sup> /4; SE <sup>1</sup> /4, SW <sup>1</sup> /4, SW <sup>1</sup> /4		
State of	22S	27E	21	SW <sup>1</sup> /4, SW <sup>1</sup> /4, SW <sup>1</sup> /4; NW <sup>1</sup> /4, SW <sup>1</sup> /4, SW <sup>1</sup> /4;	8,093.74	2.00
Arizona 1-21				NE <sup>1</sup> /4, SW <sup>1</sup> /4, SW <sup>1</sup> /4; SE <sup>1</sup> /4, SW <sup>1</sup> /4, SW <sup>1</sup> /4		
Total					16,187.48	4.00

Table 1. Location of proposed drill sites investigated as part of the cultural resources survey.

# **Culture History**

### Archaeology of the Pleistocene and Early Holocene

The earliest occupation of the region is associated with the fluted point complexes of the late Pleistocene and early Holocene. The earliest of these Paleoindian traditions is the Clovis complex, dated between 9500 and 9000 B.C. and recognized as a distinct culture of highly mobile groups with a sophisticated flaked-stone tool technology. Clovis culture is relatively well represented in southeastern Arizona. In Cochise County, Clovis artifacts have been found in primary contexts with now-extinct megafauna at several sites in the terraces of the upper San Pedro River valley (Haury 1953; Haury et al. 1959; Haynes and Huckell, ed. 2007; Hemmings 1970). Isolated Clovis projectile points also have been recovered from other locations in the region. Mabry (1998:95) notes that knowledge of Paleoindian prehistory in Arizona is essentially limited to these discoveries. Paleoindian studies have generally emphasized the use of projectile points in big game hunting; however, Clovis groups "exploited a variety of resources, their focus depending on environmental conditions" (Faught and Freeman 1998). Locally, the Amerind Foundation excavated mammoth remains on the west bank of the San Pedro at AZ EE:3:5 (AMF).

# Archaic Period

Following the Paleoindian period is the Archaic period, characterized as a time of increasing sophistication in hunting and gathering techniques through both technological development and the evolution of more-complex subsistence-settlement systems, in conjunction with a gradually increasing dependence on floral food resources. A transition to a partial reliance on agriculture accompanied population growth and the development of more-sedentary settlement patterns. Archaic occupation of southern Arizona has been associated with two broad traditions: the Cochise culture and the Amargosa complex. The former was first defined by Sayles and Antevs (1941; Sayles 1983) in the San Pedro, Sulphur Spring, and San Simon valleys. Within this tradition, three successive phases were recognized: Sulphur Springs, Chiricahua, and San Pedro. The last was initially identified in the Mojave Desert of California and adjacent parts of the Great Basin (Haury 1950; Hayden 1970, 1976; Rogers 1966). The Cochise culture corresponds to the Southern cultural tradition of the Archaic as defined by Irwin-Williams (1979), whereas the Amargosa complex corresponds to the Western tradition (Huckell 1984). Since the mid-1980s, a simpler chronological taxonomy— Early, Middle, and Late Archaic—has been widely used (Huckell 1995). Approximate dates for the Archaic in southern Arizona are from 7500 to 5000 B.C. for the Early Archaic period, and 5000 to 2100 B.C. for the Middle Archaic period. This end date for the Middle Archaic is a recent and possibly provisional development, and is based on the recovery of radiocarbon-dated maize and other annuals from several sites with well-defined agricultural occupations in the middle Santa Cruz Valley (Mabry 2005a). In the Tucson Basin, the period following the Middle Archaic is now generally referred to as the Early Agricultural period, rather than as the Late Archaic, although there is some ambiguity surrounding the distinction between the two terms. However, the early end of the Early Agricultural period is at 1200 B.C., meaning there is a 900-year span of agricultural occupation that is currently unnamed and, in fact, this is presently how it is referred to (Mabry 2005a:51). The Early Agricultural period proper begins with the San Pedro phase and the appearance of a suite of material culture, agricultural technologies, and cultigens (Mabry 2008). The phase extends to 800 B.C., and is followed by the Cienega phase, which extends from 800 B.C. to A.D. 50/150.

# Formative Period

The production of plain ware pottery in southeastern Arizona commenced by around A.D. 150, and this marks the beginning of the Formative period. Over time, local potters refined their craft, so that by the end of this period fine plain ware and red ware vessels were being produced, with red ware pottery being introduced toward the end of the period (A.D. 550–650) (Whittlesey et al. 1994). At the same time, new forms appeared, suggesting the development of innovative techniques and a wider range of uses for ceramic vessels.

This time is also characterized by the development of more formalized and substantial architectural features suggesting more permanent settlements. Differentiation in pithouse styles occurs with pithouses erected inside shallow rectangular or subrectangular pits and supported by postand-beam frames that were coated with matted grasses and mud (Whittlesey et al. 1994). Larger structures, which may have provided communal or ritual foci, also were constructed. Population increase coincided with more diversified and expanded irrigation agriculture. Archaeological evidence suggests that the importation of shell, turquoise, obsidian, and other materials continued and increased (Whittlesey et al. 1994).

Eventually, distinct cultural patterns began to emerge during the Formative period, expressed in increasingly elaborate material culture and social organization. Two principle cultural traditions are recognized in the Formative period in south-central and southeastern Arizona: the Mogollon and the Hohokam. The Mogollon culture was originally defined by Haury (1936) in southwest New Mexico, but Mogollon sites, artifacts, and influence extend far into Arizona. The Hohokam world would primarily be thought of as extending from Phoenix, through central Arizona and into the Tucson Basin. Tucson itself has been seen as something of a Hohokam frontier, with ceramic traditions responding to Mogollon influence as well as the Hohokam heartland to the north. There is not a discrete boundary between the cultures, but Mogollon culture is increasingly well represented moving eastward. The mixing of Hohokam and Mogollon artifacts in southeastern Arizona has historically been seen as two different expressions of prehistoric culture: the Dragoon sequence and the San Simon Branch of the Mogollon. Whittlesey and others (1994) note the legacy of two (in a sense competing) southwestern archaeological institutions in defining these terms: the Amerind Foundation and Gila Pueblo.

The concept of a Dragoon sequence originated at the Amerind foundation, following work in Texas Canyon (Fulton 1938), the Sulphur Springs Valley (Fulton and Tuthill 1940), and along the San Pedro (Tuthill 1947). The Amerind researchers believed they had defined a distinct cultural package, although "no attempt has here been made to add Dragoon to the…list of basic cultures of the Southwest…" (Fulton and Tuthill 1940:64). Rather they proposed that the "basic culture is Hohokam with little more than a veneer of Mogollon influence" (Fulton and Tuthill 1940:55). A four-phase chronology was proposed (Tuthill 1947) that tied approximately into the Tucson Basin Hohokam sequence (all dates A.D.).

Dragoon sequence		Tucson Basin Counterpart
Cascabel phase	700 to 900	Rillito phase (Colonial period)
Tres Alamos phase	900 to 1100	Rincon phase (Sedentary period)
Tanque Verde phase	1100 to 1200	Tanque Verde phase (Classic period)
Tucson phase	1200 to 1450	Tucson phase (Classic period

Ceramic typology was crucial to the chronology because there was no dating by such means as radiocarbon or dendrochronology (Whittlesey et al. 1994). The Dragoon ceramics were seen as distinct forms, although somewhat specialized (Fulton and Tuthill 1940). Red-on-brown types were well represented, including Cascabel, Tres Alamos, Deep Well, and Dragoon wares (Tuthill 1947). There were also San Francisco, Dragoon, and Tres Alamos red wares. The plain ware, at least from the Tres Alamos site, was considered to be closely related to Gila Plain. The Tanque Verde phase was only represented by ceramics. Phases with a more complete cultural package had other distinctive elements, especially in architectural and burial practice. The occurrence of inhumations rather than cremations in the earlier phases was seen as a strong contrast with the Hohokam and perhaps an example of Mogollon influence.

The Amerind concept of a liminal Dragoon culture—distinct, yet part of the Hohokam; influenced by the Mogollon, but outside it; discrete, but not a basic culture—is intriguing. Overall, the Dragoon culture has remained something of a footnote, and Gumerman's (1991) contributors were able to explore the Hohokam world without reference to Dragoon, even though they were writing for the Amerind Foundation. Despite the convincing reservations of Whittlesey and others (1994) and the limited use of the term in contemporary papers, there remains a strong sense that Hohokam and Mogollon cultures overlap in this region, producing not only a mixture, but also some specifically local material. A good example of this is provided by the discovery of pithouses with unusual recessed hearths at the Mescal Wash site (AZ EE:2:51 [ASM]) (Vanderpot 2001; Vanderpot and Altschul 2007). Without explicitly naming the Dragoon culture, the author(s) found a parallel for this distinctive feature in the sites the Amerind used to define it.

While the Amerind Foundation formulated the Dragoon culture, archaeologists from Gila Pueblo were studying the San Simon and San Pedro valleys from a different perspective. Whittlesey and others (1994) note the great interest of the Gila Pueblo team in establishing the range, chronology, and indeed the validity of the Mogollon culture that had recently been defined by Haury (1936) in New Mexico. In the San Simon Valley, the San Simon branch of Mogollon culture was defined by Sayles (1945) as a sequence based on ceramic typology, beginning with the Peñasco phase, continuing through the Dos Cabezas, Pinaleño, Galiuro, and Cerros phases, and ending with the Encinas phase. The San Simon branch was influenced by surrounding cultural provinces. In the San Simon Valley, this meant close ties with the Mimbres Mogollon on the east; to the west, in the Sulphur Springs and San Pedro valleys, Hohokam influence was more pronounced (Bronitsky and Merritt 1986). Sayles' original sequence was revised by Franklin (1978) and most recently by Gilman (1997), who has restructured and extended the sequence into five periods (all dates are A.D.):

Early Pit Structure Period	100 to 650
Middle Pit Structure Period	650 to 900
Late Pit Structure Period	900 to 1050
Surface Structure Period	1050 to 1150
Post-1150 Period	1150 to 1450

As a result of her investigations in the San Simon Valley, Gilman (1997:84) found that "during the early Pit Structure period, sites were located where the most reliable water was present, allowing access to the densest wild food and the best farmland. More sites and probably more people were present in the later Pit Structure periods, and sites were additionally located on secondary washes and in areas not previously used for habitation."

Hohokam culture was first defined in the Phoenix Basin, the core area of the culture (Gladwin 1928; Gladwin and Gladwin 1934; Gladwin et al. 1937). By about A.D. 800, in the mid-Colonial period, the full set of cultural traits had developed, including public architecture in the form of ballcourts, a large infrastructure of irrigation canals, an extensive trade network with surrounding regions, a mortuary complex based on cremation, and a distinctive material culture of red-on-buff pottery, shell jewelry, and other crafts. The original core-periphery model of the relationship of the Phoenix Basin to the Tucson Basin and other areas (Gladwin and Gladwin 1934; Haury 1976) has been supplanted with the concept of a Hohokam regional system, in which the ballcourts served as nodes for social and economic interaction (Abbott et al. 2007; Crown 1991; Doyel 1991; Wilcox 1979; Wilcox and Sternberg 1983). During the Colonial period, the Tucson Basin became integrated with the regional system, while still maintaining distinct differences from the Phoenix Basin. For example, populations in the Tucson Basin relied on "a more diversified subsistence base with less emphasis on irrigation" (Foster et al. 2002:26). Doyel (1984) notes that, although there were canals on the Santa Cruz floodplain, the thin soil and heavy gravel of the Tucson Basin were not ideal for canal irrigation agriculture. This was offset, to a certain extent, by the diversity of resources available in the local environment between the floodplain, the floor of the basin, the

foothills, and the mountains. In terms of material culture, Tucson Basin red-on-brown pottery parallels the Phoenix Basin red-on-buff sequence.

In the San Pedro River valley specifically, there is a shift during the pre-Classic to the occupation of secondary drainages rather than major rivers, perhaps due to some unusually wet years in the late eleventh century that drove people away from the surging San Pedro (Altschul 1997:61; Van West and Altschul 1994). Throughout the San Pedro River valley, Rillito and Rincon Redon-brown ceramics are more abundant than the Mogollon wares, reinforcing the idea of a tighter connection with the Hohokam of the Tucson Basin in general.

The regional system reached its maximum extent during the first half of the Sedentary period, from about A.D. 950–1050. New settlements were established and many existing large villages, such as Snaketown on the middle Gila River, attained their greatest size and complexity. Evidence suggests that pottery was being mass-produced by specialists (Abbott 1983, 2000). However, the later part of the period saw major changes: the settlement system contracted, populations aggregated along major drainages, and ballcourts were abandoned. By the end of the period, the regional system was collapsing.

# Classic Period

The middle of the twelfth century is recognized as a critical turning point of Southwestern prehistory (Cordell and Gumerman 1989; Lekson 1999). The trajectory of Mogollon culture into the Classic period is controversial (Cordell 1997), and it may be that the Mogollon tradition effectively ends at around A.D. 1000 with the introduction of Pueblo-style architecture (Lekson 1999). In the Safford, San Bernardino, Sulphur Springs, and San Pedro valleys, the period from ca. A.D. 1150 to A.D. 1300 has been associated with Western Pueblo culture or complex. Originally defined by Reed (1948) and modified by Johnson (1965), this complex "developed in the mountainous region of east-central Arizona and west-central New Mexico about A.D. 1000...[and] represents a cultural syncretism of Mogollon features, Pueblo traits, and Hohokam elements" (Johnson and Wasley 1966:249). The period from ca. A.D. 1300 to 1450 throughout southern Arizona is associated with the concept of the Salado, discussed below.

In the Hohokam world after A.D. 1150, the platform mound replaced the ballcourt as public architecture. Canals in the Phoenix Basin were consolidated, resulting in linear systems of irrigation communities (Doyel 1980; Howard 1987) which were "comprised of one or more platform mound villages that served as administrative centers to regulate the allocation of water and organize the construction and maintenance of the canal system" (Waters and Ravesloot 2001:291). Various reasons, from social to environmental, have been proposed to account for this transformation. Waters and Ravesloot (2001) attribute the changes to a period of channel down-cutting and widening on the middle Gila River between A.D. 1020 and 1160 that "disrupted nearly a millennium of floodplain stability" (Waters and Ravesloot 2001:292) and would have required a reconfiguration of the entire canal system. They also note that in the Tucson Basin a similar "dramatic cultural reorganization between A.D. 1050 and 1150 is coincident with the cutting of a deep channel into the floodplain of the Santa Cruz River" (Waters and Ravesloot 2001:295). Other Classic-period developments in the Hohokam area included the appearance of adobe architecture and walled compounds, a decline in the production of red-on-buff pottery with a corresponding increase in red ware, and reorientation of trade and exchange networks. In terms of mortuary customs, cremation had been preferred during the pre-Classic period, although inhumation also occurred during the late pre-Classic. In the Classic period, cremation continued to be practiced, but inhumation became increasingly common. The beginning of the Civano phase in the Phoenix Basin and the Tucson phase in the Tucson Basin, ca. A.D. 1300, is associated with the advent of what is termed the Salado horizon, defined by the common denominator of Gila Polychrome, the most widely produced and distributed of all ceramic types in the Southwest (Dean 2000; Nelson and LeBlanc 1986; Rice 1998). The concept of the Salado (the name comes from the Salt River, or Río Salado) was originally developed to explain the changes that occurred during the Classic period; the Salado were presumed to have been a mixed Mogollon-Anasazi population that had migrated into the Tonto Basin, and from there into the Phoenix Basin and beyond, "taking with them Pueblo traits such as polychrome ceramics, walled compounds, and inhumation burial practices" (Rice 1998:14).

Lekson (2000) defines what he calls the Chihuahuan Salado as encompassing that portion of the Chihuahuan desert that covers southeastern Arizona, southern New Mexico, and northwest Chihuahua. Within this larger context, he places the valleys of southeastern Arizona in the "Casa–Casas Corridor" (Lekson 2000:286) linking Casas Grandes with Hohokam Casa Grande in the middle Gila Valley. The Casa–Casas Corridor revives a concept suggested previously by Wilcox and Sternberg (1983:255), which is that Salado was more an ideology that allowed small-scale regional systems to articulate from the Phoenix Basin to Casas Grandes.

Altschul (1997:65-66) proposed that the differences between sites in the middle and lower San Pedro River valley (i.e., rectangular compounds with interior rooms and Salado polychromes in the lower San Pedro, versus circular compounds with attached rooms on the outside, Babocomari polychrome, and more defensible locations for villages, such as mesas or ridges in the middle San Pedro) suggests a distinct cultural boundary lying somewhere between Tres Alamos and the Charleston Hills. This program or ideology, however defined, appears to have come to an end in the mid-fifteenth century, when throughout southern Arizona most of the archaeological record itself comes to an end, indicating a massive region-wide depopulation. Recent research by the Center for Desert Archaeology (now Archaeology Southwest) in the lower San Pedro River valley, which is proposed as a regional model of population decline and coalescence, suggests that populations "did not abandon the region en masse at A.D. 1450. Demographic decline was considerably more complex and involved many of the processes associated with coalescence, including migration and aggregation" (Hill et al. 2004:708).

Explanations of the turbulent Classic period tend to have two broad themes. Environmental change and climatic pressures represent one line of argument. The second emphasizes political (and, as noted above, possibly ideological) developments within the perceived Southwestern regional system. It has been noted that changes to the Gila River occurred between the Sedentary-Classic period transition and that episodes of channel down-cutting and widening were also observed on the Santa Cruz and San Pedro rivers (Waters and Ravesloot 2001). Down-cutting and widening events would have required extensive reconstruction of canal and field systems associated with these rivers.

# Protohistoric Period

The protohistoric period in southern Arizona has been defined in various and sometimes contradictory ways (Gilpin and Phillips 1998), but here we follow Ravesloot and Whittlesey (1987:83) and Officer (1987). For southern Arizona, they prefer to define the period as beginning with the first formal Spanish *entrada*–Coronado's expedition of A.D. 1540 to 1542–and ending with the establishment of the presidio at Tubac in 1752. Officer (1987) argues that a more appropriate endpoint would be the 1690s, when the Jesuit Order undertook the conversion of the northern reaches of Pimería Alta (Land of the Upper Pima), or this local portion of New Spain.

The inhabitants of this territory were the O'odham; their language, Piman, is one of the Sonoran languages within the Uto-Aztecan family (Miller 1983). The O'odham are generally considered, by themselves and by most archaeologists, to be descendants of the Hohokam. The small, terminal prehistoric populations in southern Arizona "were ultimately unable to continue identifiable Hohokam cultural traditions and consequently disappeared from the archaeological record, either through migration or a shift in lifestyle that rendered them archaeologically invisible" (Hill et al. 2004:689). Therefore, verifying the Hohokam-O'odham continuum is a major challenge for archaeology in the region. At the same time, from the perspective of the Hopi and Zuni, the possibility that the Hohokam have other descendants besides the O'odham is not sufficiently addressed. In this view, an exclusive reliance on the material record and its attendant constructs of culture areas and traits creates problems when archaeologists attempt to determine cultural affiliation.

This position has been reaffirmed by ethnohistoric research in the San Pedro River valley (Ferguson et al. 2004). Present-day representatives of the Hopi, Zuni, and O'odham all saw traces of their ancestors at archaeological sites they visited, their appreciation of the sites being informed by individual tribal histories and traditions. The authors concluded a "model of braided cultural transmission best fits the multiple tribal histories evident in the San Pedro [River] valley" (Ferguson et al. 2004:13).

In the 1690s, the O'odham consisted of the Sobaipuri, living on the middle Santa Cruz and San Pedro; the Tohono O'odham, west of the Santa Cruz; the Hia C'ed O'odham, farther to the west; the Kohatk, on the lower Santa Cruz; and the Akimel O'odham, along the middle Gila (Dobyns 1974; Erickson 1994). The Sobaipuri, the Kohatk, and the Akimel O'odham were known as One Villagers, living in ranchería-type settlements along the rivers and relying on agriculture for a significant portion of their subsistence; the Sobaipuri at Bac were irrigating with canals when the Spanish arrived (Fontana 1983). The Tohono O'odham were known as Two Villagers, moving seasonally between their winter well villages in the foothills and summer field villages in the valleys, where they practiced alluvial fan floodwater farming (Foster et al. 2002). The Hia C'ed O'odham, mobile hunters and gatherers, were known as No Villagers (Erickson 1994).

East and northeast of O'odham lands was the territory of Athapaskan groups that had entered the Southwest from the north, presumably sometime in the sixteenth century (Gunnerson 1979). South-eastern Arizona is considered the homeland of the Central band of the Chiricahua Apache; to the north were the Western Apache (Basso 1983; Opler 1983). These groups intensively used different

environmental zones by employing hunting and gathering subsistence strategies that allowed them to exploit large areas containing varied resources (McGuire 1980). The mobility of the Apache was also instrumental in allowing them to effectively control much of their range throughout the Spanish Viceregal and Mexican Republic periods and well into the United States Territorial period. The Apache regarded all settlements–O'odham, Spanish, Mexican, or Anglo-American–as resources to be exploited by periodic raiding (Basso 1983). Amongst the O'odham, the Sobaipuri in particular became "staunch allies" of the Spanish in fighting the Apache (Sheridan 1995:31), but by the 1770s the San Pedro Sobaipuri, who had formed a first line of defense against Apache attacks, had abandoned their settlements. Some joined the Akimel O'odham, but most moved to Bac, where they were eventually absorbed into the increasing Tohono O'odham population (Fontana 1983).

# The Historic Period

The history of the general project area is best understood with reference to three periods in southern Arizona history, corresponding to the three successive political entities that have prevailed in the region: the Spanish Colonial period (A.D. 1692–1821), the Mexican period (A.D. 1821–1854), and the U.S. period (A.D. 1854–present). The following brief discussion of the three periods is based on syntheses of Arizona and regional history presented by Bolton (1984), O'Mack and Klucas (2004), Sheridan (1988, 1995), Weber (1982, 1992), and Whittlesey and others (1994). Following the discussion of the three periods are San Pedro River valley-specific topical summaries on military posts, transportation, farming and ranching, and Tombstone and mining.

# Spanish Colonial Period (A.D. 1692–1821)

Spaniards started visiting southern Arizona on a more or less regular basis in the late seventeenth century, traveling northward from their settlements in what is now northern Mexico. Except for a small number of expeditions made to parts of northern Arizona, the northernmost extent of the Spanish presence in what is now the state of Arizona was, throughout the Spanish Colonial period, the middle Gila River valley. The last leg of the route from the settlements in Mexico to the middle Gila was along the Santa Cruz River, the diffuse lower course of which meets the Gila about 15 miles west of modern Phoenix. The route along the Santa Cruz, which probably diverged from the river to follow the same general corridor as modern Interstate 10, was undoubtedly used by Native Americans long before the Spanish arrived. It remained an important route throughout the Spanish Colonial period.

The first well-documented Spanish expedition to reach the middle Gila was that of Eusebio Francisco Kino in 1692. Kino was a Jesuit priest intent on spreading the Catholic faith to the native peoples of the region he knew as Pimería Alta, just as he and his Jesuit colleagues had already done at their missions in northern Mexico. Kino's many subsequent trips to Pimería Alta over the next two decades led to the establishment of missions at several O'odham settlements on the upper Santa Cruz, most notably San Xavier del Bac, nine miles south of modern Tucson. Kino and his Jesuit colleagues established a number of *visitas*, or secondary mission sites without resident clergy, at small O'odham settlements north of San Xavier del Bac, but none of these was located farther north than the northern limit of the modern metropolitan area of Tucson. The Akimel O'odham of the middle Gila River valley remained essentially free from the direct effects of Spanish missionizing and settlement.

Throughout the Spanish Colonial period, contacts between the Akimel O'odham and Europeans were limited to the occasional visits of Spanish expeditions from the south seeking access to the route that headed west along the Gila. The best-known Spanish expedition of the period was that of Juan Bautista de Anza, who traveled to the Gila in 1775 from the Spanish presidio at Tubac on the upper Santa Cruz, en route to the Franciscan missions of Alta California. From the Akimel O'odham settlements on the Gila, Anza headed down the river to its confluence with the Colorado, then successfully crossed the California desert. This newly opened land route to Alta California was short-lived and was not reopened until the U.S. period, but Anza was the first European to demonstrate the importance of the Gila River valley as an east-west travel corridor.

# Mexican Period (A.D. 1821–1854)

With the establishment of a presidio at Tucson in 1776, the Spanish colony of New Spain reached its maximum northern extension. The Tucson presidio had a small, permanent contingent of soldiers and officers, which afforded enough protection from the nearly constant threat of Apache raids to allow the development of a small community outside the presidio walls. This settlement, the beginning of modern Tucson, was made up of Spanish settlers, mostly from other parts of New Spain, but it also included Tohono O'odham from settlements in the surrounding desert and a small enclave of pacified Apaches.

Such was the extent of the Spanish presence in southern Arizona when Mexico gained its independence from Spain in 1821, and very little changed under the newly formed Mexican government. The remoteness of the administrative center of Mexico, the instability of the Mexican government in the early decades of independence, and an increase in the incidence of Apache raids further isolated the already remote outpost of Tucson. The middle Gila River valley was still used occasionally as a travel corridor by non–Native Americans, but the Akimel O'odham remained effectively outside the Mexican cultural and political realm.

In 1848, when the Treaty of Guadalupe Hidalgo ended the Mexican-American War, the Gila River became the new boundary between Mexico and the United States. A year later, the California gold rush brought a great influx of Anglo-American and other Euroamerican immigrants to southern Arizona, as the Gila River valley became a principal route for immigrants headed to the Pacific coast. In addition to the immigrants' impact on the valley landscape in the form of trails, camps, and eventually farms and settlements, this was the beginning of sustained contact between the Akimel O'odham and Anglo-Americans.

# U.S. Period (A.D. 1854-present)

In 1854, the Gadsden Purchase made the rest of what is now southern Arizona, from the Gila River south to the modern international border, a part of the United States. The Gadsden Purchase was

prompted by U.S. interest in securing a suitable right-of-way for a southern railroad route to California, and it was immediately followed by topographical surveys searching for the most practical route. Soon more Anglo-Americans and others were entering the region, first as traders and merchants, and later as farmers and ranchers. The Homestead Act of 1862 made it easy for ordinary citizens to file claims on recently acquired government lands, and the end of the Civil War sent a new generation of immigrants to the west in search of economic opportunities, including farming, ranching, and mining. Tucson was the only substantial settlement in southern Arizona at the start of the U.S. period, but within a decade or so, new settlements were taking shape in the region, including along the Salt and Gila rivers. By 1870, Anglo-Americans had filed claims on much of the land in the middle Gila River valley, often adjacent to the traditional farm lands of the Akimel O'odham, who saw their supply of irrigation water from the Gila diverted into a growing number of Anglo-American ditches. Soon the Akimel O'odham were essentially cut off from river water altogether. They entered a desperate time in their history that the U.S. government did not seriously address until 1924, when the San Carlos Irrigation Project was authorized.

The Southern Pacific Railroad was built across southern Arizona, from west to east, between 1878 and 1880. Following basically the same Gila River–Santa Cruz River corridor used for centuries by foot and wagon traffic, the railroad reached the vicinity of the confluence of the two rivers in 1879. The completion of the railroad led to an even greater influx of Anglo-Americans and others to southern Arizona. The subsequent development of large-scale commercial agriculture in the Phoenix area placed heavy demands on the supply of irrigation water and led to a proliferation of irrigation systems in both the Salt and Gila River valleys. The twentieth century also saw the advent of the automobile and a proliferation of roads suitable for automobiles. Some roads followed foot trails and wagon routes established long before; others traced recently surveyed township, range, and section lines; and still others connected newly formed towns and service centers.

# Military Posts

In 1776, the presidio Santa Cruz de Terrenate was founded as a Spanish outpost for the San Pedro region, captained by Francisco Tovar. Over 300 people, including soldiers and their families, Pima, and Sobaipuri, lived at the presidio. The Apache attacked Santa Cruz de Terrenate numerous times, but found more success in simply restricting supplies to the presidio. By 1780, the outpost was largely abandoned (Sugnet 1994).

Later, during the U.S. period, what would become Fort Huachuca was established to monitor the movement of Chiricahua Apaches between the San Carlos and the Sierra Madres in Mexico. Designated a fort in 1882, it "was of key importance to the Army's Apache pacification efforts" (Vanderpot and Majewski 1998:3). It served as the primary center and staging area for the Geronimo campaigns; it was also strengthened in 1877 by Yavapai enlistees and later by recruits from the Western Apache groups, predominantly the White Mountain Apache (Vanderpot and Majewski 1998).

# Transportation

The Butterfield Overland Mail Route (AZ T:14:61 [ASM]) was first used by the San Antonio and San Diego Mail Line in 1857. The following year the line was taken over by John Butterfield, who (with a sizeable federal subsidy) operated the southern route of the Overland Mail until it was discontinued in 1861 with the approach of the Civil War (Stein 1994). Four coaches a week (two in each direction) ran between St. Louis and San Francisco; stations were located, on average, 25 miles apart (Ormsby 1955). The portion of the route from El Paso to Tucson was Division VII; in what would become Arizona Territory, Division VII stations (from east to west) were San Simon, Apache Pass, Ewell's, (in the Sulphur Spring Valley), Dragoon Springs, San Pedro (at present-day Benson), Cienega (at the point where Davidson Canyon meets Cienega Creek), and Tucson (Con-kling and Conkling 1947).

Related to the Butterfield Overland Mail Route is AZ BB:14:673 (ASM), a former stage and freight route known to have been in use during the 1870s. By this time, Tucson had established its role as the primary regional distribution center serving the mining and ranching industries; freight and stage companies were major businesses (Sheridan 1986; Walker 1973). The services of the Overland Mail were taken over by the Texas and California Stage Line, the Southern Pacific Mail Line, and other companies. Wagon freighting firms such as Tully and Ochoa hauled immense amounts of goods throughout the Territory. Tucson was served by three routes: from Fort Yuma to the west, on the Colorado River; from Guaymas to the south, in Sonora; and from La Mesilla to the east, in New Mexico Territory (Stein 1994; Walker 1973). The Mesilla-Tucson-Fort Yuma route was essentially the same as the one that had been used by the Overland Mail. Often the route was immediately adjacent to (or sometimes in) the beds of drainages like Cienega Creek, where the going was easier; when the drainages flooded, alternate routes were used (Conkling and Conkling 1947).

# Ranching and Farming

Besides mining, ranching and farming constituted the later nineteenth- and early twentieth-century economy in southeastern Arizona. Major cattle ranches were established east of Tucson in the 1870s and in the San Simon and Sulphur Spring valleys in the following decade (Collins 1996; Wagoner 1952). One of the largest outfits in Cochise County, formed from the eastern portion of Pima County in 1881, was the San Simon Cattle Company. The 1880s were boom years for the cattle industry and ranges throughout Arizona were overstocked. Combined with a major drought in the early 1890s, this produced "a disaster of biblical proportions, one in which nature and greed conspired to magnify their individual effects. Cattle died like flies all over the territory, but the losses were greatest in southern Arizona, where 50 to 75 percent of all animals perished" (Sheridan 1995:141). The ranching industry recovered on a considerably reduced scale but as Bahre (1991) points out, southeastern Arizona continued to be overstocked and overgrazed until the early 1930s, when the onset of the Great Depression and widespread regional drought brought major changes.

The earliest Anglo-American farms in the San Pedro River valley were those of Mormon settlers at St. David. The Latter-Day Saints played a key role in the development of Arizona agriculture

during the late nineteenth and early twentieth centuries. In the words of McClintock (1921:3), who wrote the first comprehensive study of Mormon settlement in the Arizona, "…in the valleys of the Little Colorado, the Salt, the Gila and the San Pedro and their tributaries, and at points where the white man theretofore had failed, if he had reached them at all, the Mormons set their stakes and, with united effort, soon cleared the land and dug ditches, all to the end that farms should smile where the desert had reigned."

St. David was founded in 1877 by a group of families from Lehi (one of the Salt River settlements that are now part of Mesa). By 1881 the families had built the St. David Ditch on the east side of the river. In keeping with the Mormon pattern of colonization, satellite communities were established around St. David: McDonald, to the south, in 1882; Miramonte, to the west in 1913; and Pomerene, to the north, in 1915 (Campbell 1978; McClintock 1921). A second ditch was built to Pomerene. According to Lacher (1994) the ditch was built in 1912, washed out in the late 1920s, and was rebuilt in 1934. This is AZ EE:3:85 (ASM), the Pomerene Canal. Lacher (1994:18) states that this ditch and the St. David Ditch were "the only two permanent direct surface water diversions in the Upper San Pedro Basin." As rebuilt, the Pomerene Canal was 7 miles long, heading on the river 7.5 miles downstream from the St. David Ditch and running east of the river north to Pomerene. In 1990 the canal irrigated about 1,050 acres (Lacher 1994). Since that time, it has been abandoned.

# Tombstone and Mining

The largest silver strike in Arizona history occurred between 1879 and 1886 after Edward Schieffelin passed through Camp Huachuca and ventured to what he shortly thereafter named Tombstone. By 1880, Tombstone was one of the largest communities in the Arizona territory. During its heyday, "Tombstone's tentacles extended far beyond its dark tunnels and dusty streets" (Sheridan 1995:155), into communities like Fairbank and Charleston that served as milling towns for processing the 400,000 tons of ore that would come out of the Tombstone mines. Unfortunately, the dropping price of silver and the rising water table in the mines created a double flooding of Tombstone—too much silver and too much water for the mines to remain profitable (Sheridan 1995:145–158).

In 1881, New Mexico and Arizona's (NM&A) Benson to Sonora railroad reached the area of Fairbank; immediately, a few commercial buildings sprouted up to serve the local growing population. A post office, four stores, five saloons, and three restaurants defined this chief shipping point for Tombstone and Bisbee. At its peak in the mid-1880s, the population of Fairbank reached 100. It is the location of the famous Montezuma Hotel, which was flooded, mostly destroyed and rebuilt, in the mid-1890s, and finally razed in 1936 by A.D.OT. The Fairbank area was purchased as a Land Grant in 1901 by Boquillas Land and Cattle Company, who hired some locals, leased out some of the land, but largely evicted most of the local townsfolk (Cook 2007:18).

Nine miles southwest of Tombstone, another small town supported by Tombstone's silver boom was Charleston, where reduction works in many mills occurred. From 1878 to 1889, Charleston

found success; however, no railroad passed near the town during its peak construction years (early 1880s), and therefore many buildings were simple adobe or brick, lacking glass for windows or timber that could have been shipped in via rail. The town had no bank, jail, church, or newspaper. It was the closest town to Fort Huachuca, but when work at the silver mills shut down in 1886, the town went into rapid decline (Tiller 1982).

East of Tombstone and north of Douglas, the mining boomtown of Courtland was founded in 1909. A railroad line was constructed in 1908 by the Mexico and Colorado Railroad to allow the El Paso and Southwestern Railroad to have access to copper mines at Courtland from Douglas, Arizona. A second line was also built at the same time by the Southern Pacific Railroad, which led to open hostilities on February 17, 1909, between the two groups constructing the railroad lines. Courtland began to fade as early as 1910, as the mines previously thought to be rich in copper were discovered to have significant deposits of limestone only 300 feet down. The town was effectively abandoned in the early 1920s, although its Post Office remained open until 1942. The Southern Pacific Railroad purchased the El Paso and Southwestern Railroad in 1924, and abandoned the Courtland Branch connecting Douglas to Courtland in 1932 (Myrick 1975:350–352, 362–364).

# **PREVIOUS RESEARCH**

Prior to initiation of the field survey, a Class I inventory consisting of a records review and site file check was conducted using the AZSITE online database. Five previous archaeological surveys have been conducted within a 1-mile radius of the project area for various undertakings including mineral exploration, transmission lines, and road construction/maintenance (Table 2). The project area is located in a region with few previously recorded archaeological sites. Two previously recorded archaeological sites, both of which are single projectile points, are located within the record search area, but outside of the project area (Table 3).

Project Number	Client/Sponsor	Undertaking	Performing Agency/ Consultant	Reference
1981-139.ASM	Department of the Air Force	cultural resource inventory of a proposed Southern Arizona Auxiliary Airfields	The Benham Group	Wilson 1982
1999-91.ASM	Arizona Department of Transportation	road development	EcoPlan Associates	Folb 1999
1982-196.ASM	unknown	unknown	unknown	AZSITE
2007-737.ASM	El Paso Corporation	pipeline improvements	SWCA Environmental Consultants	Hesse 2007
2012-73.ASM	Valley Telephone Cooperative	fiber optic corridor construction	Lone Mountain Archaeological Services	Fletcher 2012

Table 2. Previous cultural resource surveys within 1 mile of the project area.

ASM Site No.	Site Type*	Temporal/Cultural Affiliation*	Reference
AZ FF:10:17(ASM)	isolated projectile point	Late Archaic	Wilson and Bowerman 1981a
AZ FF:10:18(ASM)	isolated projectile point	Archaic	Wilson and Bowerman 1981b

Table 3	. Pr	eviously	recorded	sites	within	1	mile	of the	project	area.
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\*As classified by original recorder(s)

Prior to survey, historic plats from the Bureau of Land Management (BLM) General Land Office (GLO) and historic USGS topographic quadrangles were reviewed at the University of Arizona Map Library for potentially historic features in the project area. The GLO plat for Township 22S South, Range 27 East (GLO 1886) depicts an unnamed road that runs north–south with several small spurs to the east and well outside of the project area through sections 2, 3, 10, 11, 14, 15, 23, 26, 34, and 35.

The 1958 Double Adobe, Arizona and Douglas NE, Arizona USGS 7.5-minute topographic quadrangles (USGS 1958a, 1958b) only show a pipeline and State Highway 191 (formerly Highway 666) near the project area. The oldest maps available for the McNeal, Arizona and Leslie Canyon, Arizona USGS 7.5-minute topographic quadrangles were from 1986 (USGS 1986a, 1986b), and are not historic. The Pearce, Arizona (USGS 1916 [1948]) and Douglas, Arizona (USGS 1913) 15-minute topographic quadrangles both show the "Courtland Branch" of the El Paso and Southwestern Railroad (Figure 2) in the project area. This railroad line does not appear on subsequent USGS topographic maps.

# SURVEY EXPECTATIONS

The results of the record search indicated minimal prehistoric use of the project area. Based on previously recorded sites in the general area, prehistoric cultural resources were expected to be small artifact scatters or isolated finds. Our reviews of local history and previously recorded sites in the area suggested that potential historic cultural resources might be related to transportation, mining, or ranching. Specifically, we expected to encounter the remains of the Courtland Branch of the El Paso and Southwestern Railroad.

# **SURVEY METHODS**

The archaeological survey was conducted in accordance with the Arizona SHPO Reporting Standards and non-collection survey guidelines developed by the Arizona State Museum (ASM Staff 1993; Fish 1995). WSA archaeologists Shane Miller and Ted Eldridge completed the survey on October 4, 2013. Locational information was provided prior to the project by Gusher State, and the drill site locations were flagged prior to WSA's visit. The locational information provided by Gusher State was loaded into a Trimble GeoXT global positioning system (GPS) unit with sub-meter accuracy. That information was used for locating the proposed drill sites and overland routes. Each



proposed drill site was surveyed with a maximum spacing of 15 m. The proposed overland route was surveyed with the same transect width. Photographs were taken at each proposed site, as well as at multiple locations along the proposed overland route (Figures 3–13). A handheld Trimble unit was used to record cultural resources and other project elements. Ground visibility was generally excellent, but in some locations high grass was encountered which reduced visibility.

# National Register of Historic Places Assessment Methods

All cultural resources within the project area were assessed to determine their eligibility for inclusion on the NRHP. Historic context, historic significance, and historic integrity are the three interrelated concepts on which eligibility is based. "Historic," in this sense, applies to both prehistoric and historic-period cultural resources. The significance of a cultural resource (historic property) depends upon its association with an important historic context and upon retaining the integrity of those features necessary to convey its significance. Historic contexts are defined as "those patterns, themes, or trends in history by which a specific occurrence or property is understood and its meaning (and ultimately its significance) within history is made clear" (National Register of Historic Places 1998:7). For archaeological sites, the historic context is "the analytical framework within which a property's importance can be understood" (Townsend et al. 1993:251).

Historic significance is defined as "the importance of a property to the history, architecture, archaeology, engineering, or culture of a community, state, or the nation" (McClelland 1997:235). The criteria used to determine significance recognizes different types of values embodied in the various types of cultural resources: districts, sites, buildings, structures, and objects. These values fall into one or more categories (National Register 1998:11):

1. Associative value (Criteria A and B): Historic properties significant for their association or linkage to broad patterns, events (Criterion A), or persons (Criterion B) important in the past;

2. Design or Construction value (Criterion C): Historic properties significant as representatives of the manmade expression of culture or technology, and which have distinctive characteristics of type, period, or construction; and

3. Information value (Criterion D): Historic properties significant for their ability to yield information important about prehistory or history.

Historic integrity is defined in general as "the authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic period" (McClelland 1997:4). Register guidelines specify seven aspects or qualities of integrity: location, design, setting, materials, workmanship, feeling, and association.

For cultural resources evaluated under Criteria A, B, or C, a key question is whether the property retains the characteristics it did during its period of significance. For archaeological sites significant under Criterion D, the site's importance resides in its potential to answer questions relevant to its historic or prehistoric context. This, in turn, means that its integrity is defined by the presence of sufficiently intact archaeological features and deposits (Townsend et al. 1993).



Figure 3. Overview of the State of Arizona 22-2 drill site, view to the east.



Figure 4. Overview of the State of Arizona 22-2 drill site, view to the west.



Figure 5. Overview of the overland route from the State of Arizona 22-2 drill site, view to the west.



Figure 6. Overview of the overland route from the State of Arizona 22-2 drill site, view to the east.



Figure 7. Overview of the State of Arizona 1-21 drill site, view to the west.



Figure 8. Overview of the State of Arizona 1-21 drill site, view to the east.



Figure 9. Overview of the overland route from the State of Arizona 1-21 drill site, view to the west.



Figure 10. Overview of the middle of the overland route, view to the east.



Figure 11. Overview of the middle of the overland route, view to the northwest.



Figure 12. Overview of the unnamed access road at the entrance to the project area, view to the east.



Figure 13. Overview of the unnamed access road at the entrance to the project area, view to the west.

# SURVEY RESULTS AND EVALUATION

A single historic linear site was recorded within the project area and is described below. No prehistoric sites and no isolated occurrences were discovered within the project area.

# Site Number: AZ FF:6:34(ASM)

Land Status: ASLD

Site Type: abandoned railroad

Temporal/Cultural Affiliation: historic (early twentieth century)/Euroamerican

Site Length: 3,937.6 feet (1,200 m)

Environmental Setting: The site is located in Sulphur Springs Valley in basin fill originating from the eastern slopes of the Pendergrass Mountains. The sediments consisted of silts and sands interspersed with sporadic volcanic pebbles and cobbles. The area surrounding the site has been classified as belonging to the Semi-Desert Grassland biome (Brown and Lowe 1994) and WSA archaeologists observed mesquite bushes and several varieties of tall grasses.

Elevation: 4,131 feet (1,259 m)

Diagnostic Artifacts: Metal railroad spike with "09" imprinted on the head.

# Previous Research: none

Site Description: A single historic linear feature was recorded within the project area that is consistent with the location of the Courtland Branch of the El Paso and Southwestern Railroad that was constructed in 1909 and abandoned in 1932 (Myrick 1975:350–352, 362–364). The remains of the grade constructed for the railroad grade are clearly visible and overlap with the western portion of the project area that runs parallel to Highway 191 (Figures 14–18). This grade is approximately 32.8 feet (10 m) wide and has been used as an unnamed and poorly maintained access road. Interspersed across this linear site are artifacts related to the construction of the railroad, including unidentified pieces of metal, bolts, nuts, spikes, a tie plate anchor, and a metal tie plate (A01; Figure 19) that was likely attached to a railroad tie that has since been removed. WSA also recorded the locations of bolts (A03; Figure 20) and a spike with "09" imprinted on the top (A02; Figures 21-22). The "09" imprint likely reflects the year during which the railroad line was constructed (1909). Finally, an artifact concentration consisting of three spikes, a bolt, and two nuts in a 6-m by 10-m area was also recorded (Figures 23–28). The site continues beyond the northern and southern boundaries of the project area for an undetermined distance.

# Site Condition: fair

National Register Eligibility Recommendation: WSA recommends the remains of the abandoned railroad as eligible for the NRHP under Criterion A. This historic linear feature is likely the remains of the Courtland Branch of the El Paso and Southwest Railroad and is associated with events that have made a significant contribution to the broad patterns of history in the region. More specifically, this railroad was built and abandoned during the boom and bust of the copper mining industry in southern Arizona (Myrick 1975:350-352, 362-364). The site is not associated with the lives of persons significant to our past, and does not demonstrate distinctive characteristics of type, period, or construction, and therefore is not eligible under Criteria B or C. As an archaeological site, it contains a modest associated artifact assemblage, and given the site type (historic linear) and depositional context, the potential for buried cultural deposits is low. In addition, while the site retains its historical alignment, its use as an access road has impacted its integrity. Additional archaeological investigation of the portion of the site in the current project area is unlikely to yield information important to our understanding of history, making the site not eligible under Criterion D. It should be noted, however, that only a small portion of the site was documented during this project. To the extent the site exists outside of the project area, additional research or archaeological investigation may allow the site to be recommended eligible to the NRHP under additional criteria.

# **EVALUATION AND RECOMMENDATIONS**

No previously recorded cultural resources are located within the project area, and no new prehistoric archaeological sites were identified during the survey. WSA identified and recorded a single historic linear site (AZ FF:6:34 [ASM]) that is likely a segment of the Courtland Branch of the El Paso and Southwest Railroad, and recommended it as eligible for the NRHP under Criterion A.



Figure 14. Site location map for AZ FF:6:34(ASM).



Figure 15. Site sketch map for AZ FF:6:34(ASM).



Figure 16. Overview of abandoned railroad grade extending beyond the project boundary, view to the south.



Figure 17. Overview of abandoned railroad grade at the southern extent of the project area, view to the north.



Figure 18. Overview of abandoned railroad grade at the northern extent of the project area, view to the south.



Figure 19. Metal tie plate found on the abandoned railroad grade (A01).



Figure 20. Bolts found on the abandoned railroad grade (A03).



Figure 21. Nail found on the abandoned railroad grade (A02).



Figure 22. Top of the nail with the "09" imprint found on the abandoned railroad grade (A02).



Figure 23. Overview of the historic artifact concentration on the abandoned railroad grade, view to the south.



Figure 24. Bolt from within the historic artifact concentration.



Figure 25. A metal nut from within the historic artifact concentration.



Figure 26. Two spikes from within the historic artifact concentration.



Figure 27. A spike from within the historic artifact concentration.



Figure 28. A metal nut from within the historic artifact concentration.

Consequently, WSA recommends that any travel on the railroad grade be restricted to rubber-tired vehicles, and that the grade not be impacted by any ground-disturbing actions. WSA further recommends that if any ground-disturbing improvement is required for access to the drill locations it be done to the east of and off of the grade.

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