EXHIBIT E
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EXHIBIT E:  SCENIC AREAS, HISTORIC SITES AND STRUCTURES, AND ARCHAEOLOGICAL SITES

Describe any existing scenic areas, historic sites and structures or archaeological sites in the vicinity of the proposed facilities and state the effects, if any, the proposed facilities will have thereon.

Exhibit E includes summaries of existing visual (scenic), historic sites and structures, and cultural resources, as well as the potential impacts the proposed Project may have on each resource.

E.1 Scenic Areas and Visual Resources

E.1.1 Overview

This portion of Exhibit E addresses the scenic and visual resources in the Project area. The area does not contain designated national, state, or local scenic areas. Visual resource inventory data were collected based on a review of existing and future land use plans, aerial photography, field reconnaissance, and visual simulations to compare the visual impact of the proposed facilities with the existing facilities. The narrative that follows provides a description of the visual resource inventory and characterization of impacts to the landscape setting and the associated sensitive viewers.

E.1.2 Landscape Setting

The regional landscape setting is characterized by four mountain ranges surrounding the basin in which the COT is situated. The Santa Cruz river flows generally south to north on the west side of the city. Four mountain ranges can typically be seen from any point in the basin. The Santa Catalina Mountains are to the north, Rincon Mountains to the east, Santa Rita Mountains south of the city, and the Tucson Mountains are on the west side. Major land uses in the region are urban and suburban development, open/undeveloped land, industrial (heavy and light), and airports (military and private).

The COT/Pima County Outdoor Lighting Code (2012) was established to protect access to the dark night sky and support astronomical activity. Two observatories are in the region, Kitt Peak to the west, and Mt. Wrightson to the south. Pima County and COT also have Scenic Routes Plans comprised of a map and regulations that establish setbacks and other development regulations to preserve and enhance visual resources along designated roadways. None of the established scenic routes are in the Project area.

The landscape setting for the Project area is largely undeveloped and rural land within the COT and Pima County. Within and adjacent to the Project area there are three settings: undeveloped/open space, residential, and industrial. The four mountain ranges are all visible in the distance from the Project area. Existing visual impacts include power transmission and distribution lines, prisons, gravel operations, and TIA to the northwest. A residential community of approximately 120 homes is located in the southern portion of the Project area. These residents are the primary sensitive viewers in the Project area.

Few roads transect the study area. South Swan Road is a two lane paved road, and East Old Vail Connection Road is unpaved. Landcover consists of natural desert shrub vegetation of creosote, mesquite, and assorted cacti. There are no scenic or historic trails in the Project area.
Existing lattice transmission line towers are located on the west side of South Swan Road (north of East Old Vail Connection Road), and the line turns to the east at two lattice dead-end towers at the southwest corner of South Swan Road and East Old Vail Connection Road, continuing east on the south side of East Old Vail Connection Road. An existing Western Area Power Authority (WAPA) transmission line supported by H-frame poles bisects the Project area from west-northwest to east-southeast, approximately 0.9 miles south of East Old Vail Connection Road. A 13.8 kV electric distribution line with wooden monopoles is located along the east side of South Swan Road, and the south side of East Old Vail Connection Road.

The Department of Corrections facility is single-story and largely unnoticeable from the Project area or the residences to the south of the Project area. Gravel borrow pits are located southwest, southeast, northwest, and northeast of the intersection of South Swan Road and East Old Vail Connection Road. Views into the gravel pit are screened by a large dirt berm on the west side of South Swan Road.

Residential and recreational viewers are typically associated with longer viewing duration; therefore, viewer sensitivity in these settings is anticipated to be high. Sensitivity is anticipated to be low for industrial settings because these developments are associated with active industrial uses where viewers may not be as sensitive to changes in the landscape. The results of the visual inventory described by Project alternative follow.

_Northern 1 Alternative_

This alternative is located east of South Swan Road on private land. The area is undeveloped except for the gravel pit on the west side of South Swan Road. A distribution line is also located in the COT right-of-way. Viewers would be travelers along South Swan Road.

_Northern Alternative 2_

This alternative is located on undeveloped, private land between South Swan Road and the Department of Corrections facility, south of East Old Vail Connection Road. Viewers would be travelers along South Swan Road, East Old Vail Connection Road, users of the gravel pit and occupants of the prison to the east of the alternative corridor.

_Southern Alternative 1_

This alternative is located on private land on the east side of South Swan Road and within Pima County road right-of-way and private land on the west side of South Swan Road. The residential community is located on the east side of South Swan Road, and the west side is currently undeveloped. A distribution line is currently located in the east Pima County road right-of-way. Viewers would be travelers along South Swan Road and the residents of the community.

_Southern 2 Alternative_

This alternative is located on undeveloped, private land between South Swan Road and South Wilmot Road. The residential community is located on the west side of the north-south section of the alignment, and the east side is undeveloped. The east-west section of this alignment is on undeveloped private land approximately 0.1 miles south of the residential community. Viewers would be travelers along South Wilmot Road and the residents of the community.
E.1.3 Visual Simulations Methods

Field work was conducted to photograph the existing conditions from various locations throughout the study area. Twelve (12) Key Observation Points (KOPs) were selected which best captured the view that could be impacted by construction of the new facilities. The view of individuals traveling through the area on East Old Vail Connection Road, South Swan Road, and South Wilmot Road, and residents in the neighborhoods were taken into account in selection of the KOPs. See Exhibit H for additional information regarding public facilities and Exhibit F for additional recreation opportunities in the project area.

A georeferenced 3-dimensional (3d) model was created, using the engineered transmission line design, structure locations, types, pole finish, and heights. Note that only TEP’s standard pole finish, which is self-weathering steel was simulated and analyzed. The model included the proposed 138 kV transmission lines and towers, the 138 kV substation, and the Cisne Switchyard. The visual simulations were created of the proposed condition to illustrate what the Project would look like to viewers in the study area. See Exhibit G-7 for simulations of the proposed facilities.

E.1.4 Visual Assessment Results

The visual resources impact assessment evaluated the level of visual change, or contrast, that the proposed transmission lines would introduce into each landscape setting in conjunction with effects to associated sensitive viewers. The components of the visual assessment included identification of the types of viewers and their sensitivity to the Project in each segment of the route and characterization of impacts that were quantified as low, moderate, or high. The visual impact assessment considered the effects of new structures (the Project) introduced into the existing setting, associated sensitive viewers, and the influence of existing facilities (i.e., existing transmission and distribution lines, gravel pits, correction facility).

Overall, impacts are anticipated to be low for the Project when it is adjacent to or parallel with similar developed settings or features, such as along the roadways, because there would be minimal visual change. Residential settings typically result in greater impacts when adjacent to the Project, because the proposed condition differs in form and line, and introduces new vertical features. Visual impacts resulting from the Project would typically be reduced when: (1) the proposed route occurs within a setting that is similar in form and line, and (2) the route is within a corridor that has existing transmission or distribution lines.

Visual impacts for each of the routes are described below, and outlined in Exhibit E-1.

Northern 1 Alternative

The Northern 1 Alternative (see Exhibit G-7 for simulations) is compatible with the existing setting, and impacts are anticipated to be low. This conclusion is based on the undeveloped and secondary roadway setting along East Old Vail Connection Road and South Swan Road, and the existing transmission and distribution lines. Viewer sensitivity is low, as viewer type is commuter. The land adjacent to this alternative is undeveloped or developed as gravel pits.
Northern 2 Alternative
The Northern 2 Alternative (see Exhibit G-7 for simulations) is compatible with the existing setting, and impacts are anticipated to be low. This conclusion is based on the secondary roadway setting and the existing transmission and distribution lines along East Old Vail Connection Road, and the undeveloped portion of the route. Viewer sensitivity is low, as viewer type is commuter. The land adjacent to this alternative is undeveloped or developed as gravel pits.

Southern 1 Alternative
The Southern 1 Alternative (see Exhibit G-7 for simulations) is located along South Swan Road. Both sides of South Swan Road have been developed as residential neighborhoods. Viewer sensitivity is moderate, as the viewers live along this alternative. Visual impacts are anticipated to be moderate due to the addition of new poles in this setting that currently has only proximal existing wood distribution vertical structures and a more distant existing transmission line.

Southern 2 Alternative
The Southern 2 Alternative (see Exhibit G-7 for simulations) is located on mostly undeveloped land. A portion of the route is adjacent to an existing residential neighborhood. Viewer sensitivity is moderate, as some residents are adjacent to the alignment. Visual impacts are anticipated to be moderate due to the addition of vertical structures in areas where none currently exist. The existing WAPA line to the east is more distant, and there are no structures existing to the south.

E.2 Historic Sites and Structures, and Archaeological Sites
E.2.1 Overview
A Class I records review was conducted by Tierra Right of Way Services, to determine the extent of archaeological survey work performed along the alternative routes, and whether any sites have been recorded within a 200-foot-wide buffer surrounding each alternative’s corridor. A Class III survey was also conducted of the four alternative corridors and planned Sonoran Substation and Cisne Switchyard sites, see Exhibit E-2.

E.2.2 Inventory Methods and Results
The study included a records search of the Arizona State Museum’s (ASM’s) online database, AZSITE. The records review identified 28 cultural resource studies conducted within the Class I study area, which is within 0.5-mile of each alternative route. The review identified 65 previously recorded sites within and adjacent to the Project area (see Exhibit E-2).

The Class III survey resulted in the identification of a portion of 1 previously recorded archaeological site (AZ BB:13:558[ASM]) and 7 new archaeological sites (AZ BB:13:980–986), as well as 64 isolated occurrences. Isolated occurrences include mostly recent historic trash such as cans and bottles, numerous flakes and cores, and occasional potsherds. No sites or isolated occurrences were located within the Cisne Switchyard site.

AZ BB:13:558 (ASM), a resource processing site is located within the Southern 2 Alternative corridor. This site was recommended as Eligible for the National Register of Historic Places (NRHP) in 1998. Following excavations in 2002 as part of the Wilmot Prison Expansion Project, the portion of the site located in
Section 12 (where the Southern Alternative 2 would run) has no potential for additional information important to prehistory; therefore, the Project archaeologist has stated that no further cultural resource investigations should be required. The remaining sites and isolated occurrences would not be impacted by any of the alternatives or the switchyard.

**Recommendations**

The archaeologist’s recommendations for the Project are to avoid the listed sites, and to comply with the requirements of A.R.S. § 41-865 should any human remains or cultural materials be discovered during ground-disturbing activities (Tierra, 2018b). No impacts or mitigation are anticipated.

**E.3 References**


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<th>Alternatives</th>
<th>From</th>
<th>To</th>
<th>Setting</th>
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<td>Sonoran Substation</td>
<td>Undeveloped; secondary roadway</td>
<td>Gravel pits, existing distribution lines, existing TEP transmission lines</td>
<td>Commute</td>
<td>Low</td>
<td>Low</td>
<td>Minor change in existing views</td>
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<tr>
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<td>E Old Vail Road</td>
<td>Sonoran Substation</td>
<td>Undeveloped; secondary roadway</td>
<td>Gravel pits, existing TEP transmission lines</td>
<td>Commute</td>
<td>Low</td>
<td>Low</td>
<td>Minor change in existing views</td>
</tr>
<tr>
<td>Southern 1</td>
<td>Sonoran Substation</td>
<td>Cisne Switchyard</td>
<td>Residential neighborhood; secondary roadway</td>
<td>Single family homes, existing WAPA transmission line</td>
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<td>Moderate</td>
<td>Addition of new poles in a setting that only has existing distribution (wood) vertical structures</td>
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<td>Sonoran Substation</td>
<td>Cisne Switchyard</td>
<td>Undeveloped; residential neighborhood</td>
<td>Single family homes, undeveloped land, State prison complex, existing WAPA transmission line</td>
<td>Live</td>
<td>Moderate-High</td>
<td>Moderate</td>
<td>Moderate change in existing views. Addition of vertical structures in areas where there are none (south of residential neighborhood)</td>
</tr>
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A Class III Cultural Resources Survey of the Proposed Sonoran-Wilmot Energy Center Transmission Line Project Area in the City of Tucson, Pima County, Arizona

Prepared by:
Jerry D. Lyon, M.A., RPA

Tierra Archaeological Report No. 2018-108
April 23, 2018
Revised August 1, 2018
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ABSTRACT

PROJECT TITLE: A Class III Cultural Resources Survey of the Proposed Sonoran-Wilmot Energy Center Transmission Line Project Area in the City of Tucson, Pima County, Arizona

PROJECT DESCRIPTION: Tucson Electric Power Company (TEP) proposes to construct a new substation, and transmission lines, the Sonoran Substation–WEC Transmission Line project, on a 5.11-ha (12.63-acre) parcel within a larger 21.10-ha (52.14-acre) lease area. The proposed construction project is located within an approximately 227-ha (562-acre) area identified by TEP as the Sonoran Substation Study Area (SSSA).

AGENCY: City of Tucson

TIERRA PROJECT NO.: 18TE0-056

TIERRA REPORT NO.: 2018-108

LAND STATUS: Private

PROJECT LOCATION: The project area is located on land owned by the Tucson Airport Authority (TAA) in portions of Sections 2, 10, 11, and 15, Township 16 South, Range 13 East, Gila and Salt River Baseline and Meridian (G&SRB&M), as indicated on the Tucson SW, Arizona, 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle, in Tucson, Pima County, Arizona.

PERMIT NO.: Arizona Antiquities Act Blanket Permit No. 2018-018bl

ASM ACCESSION NO.: n/a

AREA SURVEYED: 227 ha (562 acres)

FIELDWORK DATE: March 20–23, 29, and July 17, 2018

NO. OF CULTURAL RESOURCES FOUND: 8

NO. OF SITES RECOMMENDED AS NRHP ELIGIBLE: 7
NO. OF SITES RECOMMENDED AS NRHP INELIGIBLE: 1

NO. OF ISOLATED OCCURRENCES: 64

MANAGEMENT RECOMMENDATIONS: Eight archaeological sites, including one previously recorded (AZ BB:13:558[ASM]), six new prehistoric Ceramic period sites with fire-cracked rock features and associated artifacts (AZ BB:13:980, 982–986[ASM]), and one late Historic trash dump (AZ BB:13:981[ASM]), and 64 isolated occurrences were documented during the survey. Tierra Right of Way Services, Ltd. (Tierra), recommends that all identified archaeological sites be avoided during the proposed undertaking.

The client and all subcontractors are reminded that, in accordance with §41-844 of the Arizona Revised Statutes, the person supervising any survey, excavation, construction, or like activity on State-administered lands is required, upon incidentally encountering cultural deposits more than 50 years old, to halt all work on the undertaking and immediately notify the Director of the Arizona State Museum (ASM) of the finding so that a consultation process can be initiated and an appropriate course of treatment decided upon. Work in the area is not to resume until authorization is received from the Director of the ASM.

The client and all subcontractors are also reminded that, in accordance with §41-865 of the Arizona Revised Statutes, if human remains are encountered anywhere in the survey area during any subsequent ground-disturbing activities, these activities shall cease in the area of the discovery, and the Director of the ASM shall be immediately notified. The Director will then have 10 working days to respond to the request. All ground-disturbing activities in the immediate vicinity of the discovery shall cease until a qualified archaeologist assesses the remains. Work in and around the area shall not resume until so directed by ASM personnel.
INTRODUCTION

Tucson Electric Power Company (TEP) proposes to construct a new substation and 138kV transmission lines south of Tucson that will serve to connect the new 100-megawatt (MW) Wilmot Energy Center solar power generation and 30-MW battery storage facility to TEP’s existing South Loop substation. The new substation, which will be called the Sonoran Substation, will be constructed on a 5.11-ha (12.63-acre) parcel within a larger 21.10-ha (52.14-acre) lease area. The proposed construction project is located within an approximately 227-ha (562-acre) area identified by TEP as the Sonoran Substation Study Area (SSSA). The SSSA and new transmission line alternatives are located within the Sonoran-Wilmot Revised Study Area, where TEP is conducting an alternatives analysis to aid in their selection of one of four potential alternative routes for the transmission line. The Class III cultural resources survey was restricted to the SSSA and transmission line corridors totaling 227 ha (562 acres).

Tierra staff archaeologists Jerry D. Lyon, Diane L. Slocum, and Lin Conklin conducted the survey from March 20 to 23, March 29, 2018, and the additional survey of portions of alternative transmission line corridors not include in the original SSSA survey was conducted on July 17, 2018. The purpose of the survey was to identify, record, and assess the significance of any prehistoric or historic cultural resources within the project area that might be adversely affected by the proposed undertaking. Tierra conducted the Class III survey under authority of Arizona Antiquities Act Blanket Permit No. 2018-018bl, issued by the Arizona State Museum (ASM). Jerry D. Lyon, M.A., RPA, acted as Tierra’s project director and principal investigator, and Theresa Knoblock served as project manager for the project.

During the survey, 7 new archaeological sites, 1 previously recorded archaeological site, and 64 isolated occurrences were identified and documented.

PROJECT AREA

The project area is located in the northeast portion of the TEP PSA on land owned by the Tucson Airport Authority (TAA) in portions of Sections 2, 10, 11, and 15, Township 16 South, Range 13 East, Gila and Salt River Baseline and Meridian (G&SRB&M), as indicated on the Tucson SW, Arizona, 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle (Figure 1).

The project area consists mostly of rangeland with an approximately 26-ha (65-acre) inactive borrow pit in the northern portion of the area, as well as an abandoned access road connecting the pit to Old Vail Connection Road to the north (Figure 2). A transmission line access road runs through the central portion of the project area east from Swan Road. An Arizona State Department of Corrections facility is located to the east of the project area, and there are both active and inactive sand and gravel operations to the east, north, northeast, and west of the area. Rural residential areas are present south of the eastern portion of the project area and east of the southern portion of the area along Swan Road. The topography of the project area is mostly flat with a slight western aspect; elevations range from approximately 832–847 m (2,730–2,780 feet) above mean sea level (AMSL).

The project area is located within the Arizona Upland biotic community, as described and mapped by Brown (1994). The Arizona Upland biotic community is often referred to as “the Arizona Desert.” It is the most watered and least desert-like desert scrub habitat in North America. Vegetation in this biotic community takes on the appearance of a scrubland or low woodland of leguminous trees with intervening spaces held by one or several open layers of shrubs and perennial succulents.
Figure 1. Project location map.
Figure 2. Project area detail.
Vegetation observed in the project area during Tierra’s surveys is consistent with previous descriptions of the Arizona Uplands biotic community.

Dominant plant species observed in the project area include creosote (Larrea tridentata), velvet mesquite (Prosopis velutina), yellow palo verde (Parkinsonia microphylla), jumping cholla (Cylindropuntia fulgida), Christmas cactus (C. leptocaulis), walking stick cactus (C. spinosior), and whitethorn acacia (Vachellia constricta). Other common plant species observed in the project area include triangle-bur ragweed (Ambrosia deltoidea), brittlebush (Encelia farinosa), burroweed (Isocoma tenuisecta), ocotillo (Fouquieria splendens), desert Indianweed (Plantago ornata), and desert zinnia (Zinnia acerosa). Other cacti species observed include cactus apple (Opuntia engelmannii), candy barrel cactus (Ferocactus wislizenii), Arizona pencil cholla (Cylindropuntia arburscula), saguaro (Carnegiea gigantea), and the endangered Pima pineapple cactus (Coryphantha scheerii var. robustispina).

CULTURAL BACKGROUND

Southern Arizona and the Tucson Basin have a long and rich cultural history patterned by unique responses to environmental conditions that characterize the region. For the past 13,000 years, and at least prior to the widespread use of powered climate control and water delivery systems, individuals and groups living in this portion of the Sonoran Desert have maintained a close relationship with the natural environment that has colored the ways people have subsisted and developed, how they organized themselves and interacted, and how they distributed themselves across the landscape. The following section presents a generalized cultural history of the region, highlighting the area’s social and cultural trajectories.

**Paleoindian and Early Archaic Periods (11,000–6000 B.C.)**

The first known inhabitants of southern Arizona are referred to by archaeologists as Paleoindians and were most likely small groups of migratory peoples who arrived during the Pleistocene epoch when the climate was wetter and cooler than today (Meltzer 2009). The classic hallmark of Paleoindian material culture is fluted, lanceolate projectile points, especially Clovis points, a type belonging to the earliest of the Paleoindian complexes, which have been found in southeastern Arizona in association with the fossil remains of now-extinct species, particularly Pleistocene megafauna such as mammoth (Mammuthus spp.) and ancient bison (Bison antiquus) (Huckell 1982, 1995; Mabry 1998). Based on these associations, Paleoindian groups were originally conceptualized purely as big game hunters. However, it is now understood that these people actually exploited a spectrum of biological resources, a subsistence strategy not unlike those practiced by later Archaic period peoples (Mabry 1998:105–107). Evidence of Paleoindian occupation in the Tucson Basin is rare, although fluted Clovis points have been found at the Valencia site, AZ BB:13:74(ASM), along the Santa Cruz River in the southern Tucson Basin (Doelle 1985:181–182) and in Rattlesnake Pass through the Tucson Mountains in the northern part of the basin (Huckell 1982). Due to a paucity of finds, the extent and nature of Paleoindian occupation in the basin is currently unknown.

The end of the Paleoindian and origins of an Archaic lifeway has been linked to environmental changes that coincide with the end of the Pleistocene, when climatic conditions become much like they are today. The beginning of the Early Archaic period during the early Holocene (ca. 8500–6000 B.C.) is marked by the appearance of ground stone seed-milling equipment and by the transition from the earlier fluted point complexes to later Paleoindian stemmed and lanceolate point complexes (Plainview-like) and the arrival of Early Archaic Western stemmed point complexes (Faught and Freeman 1998:45–52; Mabry and Faught 1998:53–59). One Early Archaic site has been documented
in the Tucson Basin, in Ruelas Canyon south of the Tortolita Mountains (Swartz 1998:24). As with the preceding Paleoindian period, additional finds are critical to any knowledge of how and how often these early groups occupied the region.

**Middle Archaic Period (6000–2100 B.C.)**

The Middle Archaic period is much better represented in the Tucson Basin and southern Arizona. Changes in material culture include the addition of shallow basin metates, mortars and pestles, various bifacial tools, and distinctive side-notched projectile points to the basic tool assemblage of the preceding Early Archaic period. Generally, the Middle Archaic period is viewed as a time when regional variations in material culture across the Southwest became less pronounced. In particular, notched projectile points take on a general similarity of design over large geographic regions (Slaughter 1992:70). It is thought that this uniformity of technology is related to the high degree of mobility that was presumably characteristic of populations living during this period. Middle Archaic diagnostics and sites dating from the last half of period have been identified in the uplands surrounding the Tucson Basin and along major streams and floodplains. Important Middle Archaic components have been documented at the deeply buried site of Los Pozos along the Santa Cruz River (Gregory 1999), at sites skirting the southwest edge of the Tortolita Mountains (Roth 1989), and at bajada (Dart 1986) and canyon (Dart 1984; Douglas and Craig 1986) settings in the Catalina Foothills.

**Late Archaic–Early Agricultural Period (2100 B.C.–A.D. 50)**

The Late Archaic–Early Agricultural period in the Southwest is marked by the widespread transition to subsistence that included cultivated food resources. This period is also marked by the appearance of permanent or semipermanent domestic architecture, canal irrigation, and the first Mesoamerican cultivars, which arrived as early as the beginning of the second millennium B.C. (Huckell 1996:343; Mabry 2007). At the same time, the period is generally thought to be a time during which people continued a lifeway that remained relatively mobile with the objective of exploiting wild food resources; sites that reflect these activities continue to be categorized under the designation of Late Archaic (Huckell 1995; Roth 1989).

Work during the past two decades along the Santa Cruz River valley has resulted in the discovery of numerous Late Archaic–Early Agricultural period sites and the establishment of a refined phase sequence and detailed information on site structure and subsistence for the period (Diehl 1997; Freeman 1998; Gregory 2001; Mabry 1998, 2007; Thiel and Mabry 2006). The earliest known maize and settlements relying on its cultivation date to about 2100 B.C., and the earliest known canals date to around 1500 B.C. Fired sherds, perhaps from incipient vessels, and figurine fragments have also been recovered from sites in the Tucson Basin that date to about 2100 B.C. (Mabry 2007). Many of the sites identified along the Santa Cruz River contain small, oval-to-round semisubterranean pit houses, frequently with large internal storage pits. A few large structures may have been used for communal or ritual activities. Early Agricultural period sites may contain distinctive Cienega, Cortaro, and San Pedro type projectile points, as well as shell and some ground stone materials that would have been brought in and exchanged from outside the Tucson Basin.

**Early Ceramic Period (A.D. 50–650)**

In both the Tucson and Phoenix Basins, the Early Ceramic period (otherwise known as Early Formative period) appears to have developed out of the cultural matrix of the Late Archaic–Early Agricultural period. As the name suggests, the period is distinguished based on the first widespread construction and use of ceramic containers. Two Early Ceramic phases have been proposed for the
Tucson Basin, the Agua Caliente phase and the Tortolita phase, although there remains disagreement on whether or the extent to which the later phase reflects the beginning of the Hohokam cultural sequence (Deaver 1998; Wallace 2003). The Agua Caliente phase or Plain Ware ceramic horizon (A.D. 150–450) is marked by the appearance of plain, smudged, and incipient red ware vessels, often in the form of neckless seed jars, produced by hand-molding, scraping, and paddling (Ciolek-Torrello 1998:261). The Tortolita phase or Red Ware horizon (A.D. 450–650) roughly corresponds to the beginning of the Vahki phase (characterized by Vahki Red Ware) in the Phoenix Basin and is marked by the introduction of a hard-slipped and typically sand-tempered ware, Tortolita Red (Bernard-Shaw 1990; Heidke 2003:148). Early Ceramic assemblages are marked by a variety of milling stones, an expedient flaked stone industry accompanied by a remnant Archaic period bifacial tool technology, and rectangular domestic pit houses that were more formal in design than their predecessors (Whittlesey and Heckman 2000:6). Tortolita phase settlements tend to be larger and have more formal patterning than the previous Agua Caliente phase settlements and were increasingly dependent on maize. Wallace and Lindeman (2003:371–405) argue that the establishment of Tortolita phase villages, especially where irrigation agriculture was possible along the Santa Cruz River; their formal structure around central plazas; and the continuity of settlement at places occupied for the next 800 years suggest that the Hohokam political and religious system had begun by about A.D. 500.

Early Ceramic period components have been documented at a number of sites along the Santa Cruz River from the northern Tucson Basin (Redtail, Lonetree, Silverbell Coachline, and Dairy sites) to areas in the southern basin (Julian Wash and Valencia Vieja), and along Tanque Verde Creek (Houghton Road) and other locations in the east and southeastern parts of the basin (Deaver 1998; Wallace 2003).

Hohokam (A.D. 500/650–1450)

With the introduction of characteristic decorated ceramics and contemporaneous developments in social and ritual organization, Tucson Basin culture history can be described in terms of a distinct cultural tradition or regional system that archaeologists have labeled Hohokam. The Hohokam cultural tradition developed sometime after A.D. 500, eventually incorporating burial practices involving cremation, the use of ballcourts and, later, platform mounds for communal or ritual activities, the organization of houses and households into formal courtyard groups, and an expansion of canal irrigation and dry farming systems (Doyel 1991; Fish and Fish 2008; Wallace et al. 1995). The Hohokam cultural sequence is divided into four periods based on recognized changes in ceramic and architectural styles: Pioneer, Colonial, Sedentary, and Classic periods.

Pioneer Period (A.D. 650–750)

In the Tucson Basin, the Pioneer period begins with the appearance of Phoenix Basin red-on-buff wares and similar red-on-brown wares that were produced locally. Red ware ceramics continued to be produced in the Tucson Basin into the Cañada del Oro phase of the subsequent Colonial period (Wallace et al. 1995:596). It is during the Snaketown phase that distinctly Hohokam traits in material culture (ceramic design and other technologies) become evident in the Tucson Basin. The Snaketown phase is viewed by some archaeologists as being the actual beginning of what can be defined as Hohokam, although others believe that a Hohokam regional cultural tradition cannot be defined until the Colonial period, when traits such as ballcourts and a distinctive mortuary complex appeared (Wallace et al. 1995:576, 606).
Colonial Period (A.D. 750–950)
The Colonial period comprises two phases, the Cañada del Oro phase (A.D. 750–850) and the Rillito phase (A.D. 850–950), which can be distinguished primarily by changes in ceramic designs. Ballcourts and cremation burials with a distinctive assemblage of mortuary offerings introduced at this time became hallmarks of the Hohokam regional system. Settlement expanded in the Tucson Basin during the Colonial period, and large villages were constructed in the Santa Cruz River valley at several sites. Most of the large villages contained ballcourts—large, oval features formed with earthen banks—which likely served as arenas for a ball game, as well as focal points for regional socioeconomic interaction (Wilcox and Sternberg 1983). Larger villages were laid out in clusters of pit houses focused around courtyard areas, and cremations were frequently clustered in cemeteries that appear to have been associated with house clusters (Wilcox 1991:256). Some of the larger villages known from this period in the Tucson Basin include the Hardy site near the historic Fort/Camp Lowell, Hodges Ruin in the northern part of the Santa Cruz Valley, the Dakota Wash, St. Mary’s, and Julian Wash sites near the center of the basin, and the West Branch and Valencia sites to the south. From this list, ballcourts have been identified at the Valencia site, the Dakota Wash site, the West Branch site, and Hodges Ruin, and other ballcourts are known to the north at Sleeping Snake Village, Honeybee Village, and Romero Ruin in Oro Valley.

Sedentary Period (A.D. 950–1150)
The succeeding Sedentary period, divided into the Early, Middle, and Late Rincon subphases, was a time of population growth and expansion across the Tucson Basin. Established Hohokam villages became larger, and smaller settlements were established along secondary drainages and in bajada environments (Doelle and Wallace 1986). Smaller settlements such as farmsteads and field houses also began appearing around village peripheries. The construction of ballcourts and the unique Hohokam cremation complex continued, but the deceased began to be buried as inhumations again after the practice had virtually disappeared during the Colonial period. Copper bells imported from western Mexico and etched marine shell objects appear for the first time during the Sedentary period. Ceramics took on increasingly geometric, abstract designs during this time, and the distinctive Gila shoulder, which was formed by the sides of a vessel sloping downward sharply from the neck to create a low shoulder near the base, became a diagnostic marker of the Sedentary period. Specialists at some village sites produced decorated red-on-brown ceramics for trade across the Tucson Basin at this time (Harry 2000 Heidke 1988, 1995, 2011). Near the end of the Sedentary period (Late Rincon phase), the importance of the ballcourt system began to wane, and formally constructed platform mounds increasingly became the primary form of public architecture (Doyel 2000:308). Because of the large number of sites and the extent of archaeological investigation of Sedentary period sites in the Tucson area, more is known about this time than any other prehistoric period. Well-documented Sedentary period village sites in the Tucson Basin include the Tanque Verde Wash (Elson 1986; Elson and Cook 2009) and Hardy (Gregonis 1996; Thiel 2013) sites in the eastern basin, Los Morteros (Wallace 1995) in northeastern Tucson, Honey Bee Village (Wallace 2012) and Sleeping Snake Village (Ezzo 2007) in the northern reaches of the basin, and the West Branch site (Whittlesey 2004) and Julian Wash (Wallace 2011) along the Santa Cruz River in the southern portion of the basin.

Classic Period (A.D. 1150–1450)
The Classic period is divided into two phases: the Tanque Verde phase (A.D. 1150–1300) and the Tucson phase (A.D. 1300–1450). During the Tanque Verde phase, Tanque Verde Red-on-brown became the dominant ceramic type in the Tucson Basin and common across southern Arizona. At the same time, a number of nonlocal types, such as corrugated, black-on-white, and white wares, were
also introduced to the region. Inhumation burials continue, along with cremations. Domestic architecture in the form of pit houses continued to be built, but aboveground adobe and masonry structures, often freestanding and constructed within adobe compound walls, were also constructed (Rice 2003:8–10). In the Tucson Basin and throughout the Hohokam region, ballcourts fell out of use at this time, being replaced by platform mounds, which supported elevated rooms, as the primary public structures at villages (Doelle et al. 1995). During the late Classic period (Tucson phase), a number of population movements led to widespread social changes across much of southern Arizona (Hill et al. 2004). Following the abandonment of many of the Tanque Verde phase sites, settlements aggregated into fewer but larger sites, possibly as a response to increased warfare (Doelle and Wallace 1990:331). Freestanding structures declined, and architecture became oriented toward contiguous room blocks with more substantial walls.

Important Classic period sites in the Tucson Basin include University Indian Ruin (Hayden 1957) in the eastern foothills, the Los Robles (Downum 1993) and Marana Platform Mound sites (Fish et al. 1992) to the north, and the Zanardelli (Jones 2011; Ruble 2011) and Martinez Hill sites along the Santa Cruz river in southern part of Tucson, all of which contained platform mounds and compounds. A Tucson phase compound, the Shamrock Ruin, was excavated at the Dairy site north of the Olsson Parcel by Statistical Research, Inc., in 1995 (Heckman and Altschul 2007).

Protohistoric Period (1450–1540)

The Protohistoric period—the era between the end of the Classic period and the arrival of the Spanish—is an obscure period. Comparatively little archaeological evidence associated with this period has come to light, and much must be inferred from the accounts of Spanish explorers of the state of the Southwest toward the end of the Protohistoric period. In the Tucson area, the Hohokam settlement system had been replaced by those of two groups of people: the Sobaipuri in the Santa Cruz valley and the Tohono O’odham in the desert areas west of the valley (Doelle and Wallace 1990; Gilpin and Phillips 1998; Masse 1981). According to historic accounts, both groups spoke the Piman language and lived in dispersed settlements made up of jacal surface structures instead of pit houses. Archaeological studies in southern Arizona have documented roasting pits, rock rings, flat cobble platforms, and burials attributed to the Sobaipuri (Gilpin and Phillips 1998:38), and many features and assemblages of plainware pottery (Whetstone Plain and Sobaipuri Plain) have produced a protohistoric chronology (Seymour 2011). Protohistoric period finds are rare in the Tucson Basin (Doelle 1984), although remains are known from the Clearwater site, particularly in the area of the San Agustin Mission and Mission Gardens near downtown Tucson, where Father Kino had noted a Pima village in the 1690s (Thiel and Mabry 2006) and possibly the Barrio Libre Cemetery (Thiel and McClelland 2007). A large Sobaipuri community named Bac was also located near the historic mission of San Xavier del Bac (Doelle 1984; Ravesloot 1987). Other historic villages documented by early Spanish visitors along the Santa Cruz River include San Agustin del Oyaut, located near the confluence of Rillito Creek and the Santa Cruz River, and San Clemente, located near the northern end of the Tucson Mountains (Doelle 1984).

It remains a subject of debate whether or not the Piman-speaking people encountered by the Spanish in southern Arizona in the late seventeenth century were direct descendants of the prehistoric peoples known by archaeologists as the Hohokam or if they were a new group of people who had moved into the region following the decline of late Classic period Hohokam villages. The oral traditions of contemporary Piman speakers in southern Arizona suggest that the people inhabiting southern Arizona and northern Sonora at the time of European contact were the descendants of new arrivals.
from Mexico who had become integrated into an existing population that would have been the direct ancestors of the Hohokam (Teague 1993). Loendorf (2012; Loendorf et al. 2013) has recently presented continuity in material culture (projectile point styles, obsidian sources, ceramic technology and style) and other lines of evidence (e.g., Teague 1993) to support a direct connection between the Hohokam and the Akimel O’odham of the Salt-Gila Basin. Similarly, Craig (2016) argues that the scale of Hohokam collapse and abandonment after A.D. 1400 may be overestimated (e.g., Hill et al. 2004) and that our understanding of Hohokam to early Historic period continuity is distorted by the lack of archaeological visibility and poor preservation of late prehistoric and protohistoric sites and difficulties in dating them.

**Historic Period (1540–1960)**

Spanish exploration of the Southwest began as early as 1539 with the preliminary scouting expedition of Fray Marcos de Níza, who had been sent to the region by Mexican viceroy Antonio de Mendoza in response to the accounts of Alvar Núñez Cabeza de Vaca and an African named Esteban—the first person of Old World descent known to have passed through southeastern Arizona—who had wandered to Sonora after being shipwrecked in the Gulf of Mexico in 1528. Esteban was sent back out in 1539 as a guide on an expedition traveling from Sonora northward to the Pueblo country of northern New Mexico. When other members of his party fell ill, Esteban is believed to have traveled alone across the eastern edge of present-day Arizona to Zuni, where he was killed (Weber 1992). The nominal leader of the expedition, Fray Marcos de Níza, may or may not have eventually followed along. After de Níza’s return, Viceroy Mendoza proposed a larger follow-up expedition and selected Vásquez de Coronado as its leader. Coronado’s party departed in 1540 in search of the fabled Seven Cities of Cibola. The route of the expedition probably took Coronado through what is now eastern Arizona, although at one time it was speculated that one stop on the journey, Chichilticale or Red House, was in fact the Hohokam adobe house at Casa Grande (Wilson 1999:25–26).

Jesuit missionary Eusebio Francisco Kino arrived in Sonora in 1681. Kino and his fellow Jesuits established a chain of missions that began in present-day Sonora and that, by 1700, ultimately extended northward into what is now Arizona. The Pima Indians of the missions revolted against the Spanish in 1751. This rebellion was put down quickly, and in the following year a presidio was established at Tubac (Weber 1992). Apart from guarding against further internal revolt, the presidio was intended to help stem incursions by the Apache. Apaches had been raiding Piman settlements since shortly prior to the time of Kino’s initial contact (Spicer 1962:234), and the escalation of raiding over time resulted in increasing resettlement of the Piman-speaking populace into defensible locations. From the late 1780s, the implementation of a policy of “carrot-and-stick” diplomacy, by which Apaches and other nomadic tribes were supplied with gifts of food and other items in exchange for halting their raids on settlements, allowed for an expansion of ranching and stock raising all along Mexico’s northern frontier. This time of relative peace ended with the independence of Mexico from Spain in 1821. The Mexican government dropped the policy of purchasing a state of relative peace with stipends, and raiding resumed, the result being that ranching once again ceased to be viable (Morrisey 1950:151).

Most of Arizona passed into the hands of the United States at the conclusion of the Mexican-American War of 1846–1848. The boundary between New Mexico and Texas was established in 1850, at which time the entire region south of the 37th parallel, stretching from the new Texas–New Mexico border west to the eastern boundary of California, became the Territory of New Mexico. In 1854, the Gadsden Purchase expanded the New Mexico Territory from the Gila River south to the present-day
Mexican border (Walker and Bufkin 1979:22). The Territory of Arizona was split off from the Territory of New Mexico in 1863. The first railroad, the Southern Pacific, reached Arizona from the west in 1877, but it did not reach Tucson until 1880 (Myrick 1975). Conflict between the Apache and the Euroamerican settlers continued until 1886 when Geronimo surrendered and peace was negotiated (Collins et al. 1993:32). With the end of open hostilities, settlers resumed their migration to the area with the aid of the railroad. Mining and cattle ranching, which had already become fairly well-established in Arizona prior to the Civil War, became the Territory’s main industries.

Arizona attained Statehood in 1912. From the end of the Civil War, ranching and homesteading, in addition to increased urban development, brought by the railroads had proliferated in the West, including Arizona. Mining also played a vital role in Arizona’s economy. In the 1930s, the Great Depression limited economic growth, with the mining industry being particularly affected. However, recovery from the Great Depression was extremely rapid in the Tucson Basin, as evidenced by a large population increase. Ranching, mining, and farming continued to account for a large portion of the economic activity of the Tucson area, even into comparatively recent times.

PREVIOUS RESEARCH

Prior to fieldwork, a Class I records check was performed using the AZSITE online database, which contains records pertaining to all surveys and sites registered with the ASM. The Class I search found that 28 surveys had been previously conducted and that 65 previously recorded sites were present within a 1.6-km-radius (1.0-mile-radius) buffer zone surrounding the project area (Tables 1 and 2; see Appendix B, Figures B.1 and B.2). Only a portion of one site (AZ BB:13:558[ASM]) has been recorded within and adjacent to the project area (see Figure B.2).

General Land Office (GLO) maps covering the same 1.6-km-radius (1.0-mile-radius) buffer zone were also examined to see if historic properties not documented elsewhere could be identified in the vicinity of the project area. GLO Map No. 2169 (Township 16 South, Range 14 East, G&SRB&M, filed June 11, 1873) shows no structures or other entities that might be considered a cultural resource in the project area (Figure 3). The adjacent GLO Map No. 2118 (Township 15 South, Range 14 East, G&SRB&M, filed June 11, 1873), likewise shows structures or other entities on the north side of the project area (see Figure 3). GLO Map No. 2169 depicts a drainage flowing east to west across the extreme south end of the project area.

Please note that in response to requirements of ASM and its online database, AZSITE, the mapped locations of the previous projects and sites are presented in a detachable appendix in order to keep their locations confidential.

SURVEY EXPECTATIONS

The project area includes a portion of the lower bajada south of Airport Wash. The area is incised by numerous small drainages that flow from east to west on their way to the Santa Cruz River. The area contained wild plant and animal resources that could have been targeted by prehistoric inhabitants. Because the area is not near a major or perennial water source, prehistoric occupation of the area was likely sporadic and short term, and sites are expected to be small resource gathering and processing sites.
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Table 2. Previously Recorded Sites within 1.6 km (1.0 Mile) of the Project Area
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<td>roasting pit features and artifact scatter</td>
<td>Dosh, Deborah, Brian Stull, David Gregg, and Ray Sanchez</td>
<td>3/18/1999</td>
<td>determined Eligible by SHPO</td>
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<td>AZ BB:13:599(ASM)</td>
<td>roasting pit features and artifact scatter</td>
<td>Dosh, Deborah, Brian Stull, David Gregg, and Ray Sanchez</td>
<td>3/18/1999</td>
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</tr>
<tr>
<td>AZ BB:13:600(ASM)</td>
<td>roasting pit features and artifact scatter</td>
<td>Dosh, Deborah, Brian Stull, David Gregg, and Ray Sanchez</td>
<td>3/18/1999</td>
<td>determined Eligible by SHPO</td>
</tr>
<tr>
<td>AZ BB:13:601(ASM)</td>
<td>roasting pit</td>
<td>Dosh, Deborah, Brian Stull, David Gregg, and Ray Sanchez</td>
<td>3/18/1999</td>
<td>considered Eligible by recorder</td>
</tr>
<tr>
<td>AZ BB:13:602(ASM)</td>
<td>roasting pit and lithics</td>
<td>Dosh, Deborah, Brian Stull, David Gregg, and Ray Sanchez</td>
<td>3/18/1999</td>
<td>considered Eligible by recorder</td>
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<tr>
<td>AZ BB:13:603(ASM)</td>
<td>roasting pit features and artifact scatter</td>
<td>Dosh, Deborah, Brian Stull, David Gregg, and Ray Sanchez</td>
<td>3/19/1999</td>
<td>determined Eligible by SHPO</td>
</tr>
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<td>AZ BB:13:604(ASM)</td>
<td>roasting pit features and artifact scatter</td>
<td>Dosh, Deborah, Brian Stull, David Gregg, and Ray Sanchez</td>
<td>3/18/1999</td>
<td>determined Eligible by SHPO</td>
</tr>
<tr>
<td>AZ BB:13:605(ASM)</td>
<td>roasting pit features and artifact scatter</td>
<td>Dosh, Deborah, Brian Stull, David Gregg, and Ray Sanchez</td>
<td>3/19/1999</td>
<td>considered Eligible by recorder</td>
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<tr>
<td>AZ BB:13:606(ASM)</td>
<td>roasting pit features and artifact scatter</td>
<td>Dosh, Deborah, Brian Stull, David Gregg, and Ray Sanchez</td>
<td>3/19/1999</td>
<td>determined Eligible by SHPO</td>
</tr>
<tr>
<td>AZ BB:13:607(ASM)</td>
<td>roasting pits</td>
<td>Dosh, Deborah, Brian Stull, David Gregg, and Ray Sanchez</td>
<td>3/19/1999</td>
<td>considered Eligible by recorder</td>
</tr>
<tr>
<td>AZ BB:13:608(ASM)</td>
<td>roasting pit features and artifact scatter</td>
<td>Dosh, Deborah, Brian Stull, David Gregg, and Ray Sanchez</td>
<td>3/19/1999</td>
<td>determined Eligible by SHPO</td>
</tr>
<tr>
<td>AZ BB:13:609(ASM)</td>
<td>roasting pit features and artifact scatter</td>
<td>Dosh, Deborah, Brian Stull, David Gregg, and Ray Sanchez</td>
<td>3/19/1999</td>
<td>considered Eligible by recorder</td>
</tr>
<tr>
<td>AZ BB:13:610(ASM)</td>
<td>roasting pit features and artifact scatter</td>
<td>Dosh, Deborah, Brian Stull, David Gregg, and Ray Sanchez</td>
<td>3/19/1999</td>
<td>considered Eligible by recorder</td>
</tr>
<tr>
<td>Site No.</td>
<td>Site Name/ Description</td>
<td>Recorder</td>
<td>Date Recorded</td>
<td>NRHP Eligibility</td>
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<tr>
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<td>-----------------------------------------------</td>
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</tr>
<tr>
<td>AZ BB:13:611(ASM)</td>
<td>rock pile features and artifact scatter</td>
<td>Dosh, Deborah, Brian Stull, David Gregg, and Ray Sanchez</td>
<td>3/19/1999</td>
<td>determined Eligible by SHPO</td>
</tr>
<tr>
<td>AZ BB:13:612(ASM)</td>
<td>roasting pit features and artifact scatter</td>
<td>Dosh, Deborah, Brian Stull, David Gregg, and Ray Sanchez</td>
<td>3/20/1999</td>
<td>determined Eligible by SHPO</td>
</tr>
<tr>
<td>AZ BB:13:613(ASM)</td>
<td>historic road segment</td>
<td>Dosh, Deborah, Brian Stull, David Gregg, and Ray Sanchez</td>
<td>3/18/1999</td>
<td>determined Eligible by SHPO</td>
</tr>
<tr>
<td>AZ BB:13:614(ASM)</td>
<td>historic road segment</td>
<td>Dosh, Deborah, Brian Stull, David Gregg, and Ray Sanchez</td>
<td>3/20/1999</td>
<td>determined Eligible by SHPO</td>
</tr>
<tr>
<td>AZ BB:13:672(ASM)</td>
<td>single roasting pit</td>
<td>Hohmann, John W.</td>
<td>05/2001</td>
<td>determined Not Eligible by SHPO</td>
</tr>
<tr>
<td>AZ BB:13:746(ASM)</td>
<td>artifact scatter with 7 rock clusters</td>
<td>E. Petersen, S. Plumlee, S. Tiedens, D. Broockmann</td>
<td>12/31/2004</td>
<td>considered Not Eligible by recorder</td>
</tr>
<tr>
<td>AZ BB:13:747(ASM)</td>
<td>artifact scatter with rock clusters</td>
<td>E. Petersen, S. Plumlee, S. Tiedens, D. Broockmann</td>
<td>12/31/2004</td>
<td>considered Not Eligible by recorder</td>
</tr>
</tbody>
</table>

*Note: Gray-shaded cells indicate sites within the project area.
Key: SHPO = State Historic Preservation Office.*
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Figure 3. GLO Map No. 2169 for Township 16 South, Range 14 East, and Map No. 2118 for Township 15 South, Range 14 East, G&SRB&M.
SURVEY METHODS

The survey was conducted in accordance with standards established by the ASM for pedestrian surveys on lands administered by the State of Arizona and its subdivisions. According to these standards, 100 percent coverage of an area can be claimed if the entire area is surveyed by crews walking transects spaced no more than 20 m (66 feet) apart across the entire area of potential effect (APE).

The survey area was photographed, and methods and any findings were noted on standardized forms where applicable. Ground visibility was excellent, but portions of the project area have been disturbed by cattle and earth-moving.

Cultural properties identified during any survey are evaluated in accordance with standards established by the ASM for State-administered lands (Fish 1995). These standards require a property to be at least 50 years old.

For a property of sufficient age to be recorded as an archaeological site, it must consist of one of the following:

1. At least 30 artifacts of a single type (i.e., ceramics or lithics), representing the remains of more than a single episode of activity (i.e., the dropping of a single pot or the reduction of a single core into lithic artifacts);

2. At least 20 artifacts, of two or more types of artifact;

3. A single fixed feature, with any number of artifacts in association; or

4. More than one fixed feature, with or without associated artifacts.

A property of sufficient age that does not meet any of these criteria may be recorded as an isolated occurrence. However, if such a property is considered to be of particular interest for some other reason, it may also be recorded as a site at the discretion of the recorder. Examples of such isolated occurrences would include rare types of projectile points or significant historic features.

Cultural properties are further evaluated with regard to significance, which is assessed largely in terms of a property’s eligibility for inclusion on the National Register of Historic Places (NRHP). As defined by Code of Federal Regulations Title 36, Part 60.2 (36 CFR 60.2), the NRHP is “an authoritative guide to be used by Federal, State, and local governments, private groups and citizens to identify the Nation’s cultural resources and to indicate what properties should be considered for protection from destruction or impairment” (36 CFR 60.2).

Pursuant to 36 CFR 60.4, these are the criteria by which properties are evaluated:

\[
\text{The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and}
\]

Exhibit Page 159
A. That are associated with events that have made a significant contribution to the broad patterns of our history; or

B. That are associated with the lives of persons significant in our past; or

C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. That have yielded or may be likely to yield, information important in prehistory or history (National Park Service 2004).

SURVEY RESULTS

The survey resulted in the identification of a portion of 1 previously recorded archaeological site (AZ BB:13:558[ASM]) and 7 new archaeological sites (AZ BB:13:980–986), as well as 64 isolated occurrences (Figure 4). Isolated occurrences are summarized in Table 3 and include mostly recent historic trash such as cans and bottles, numerous flakes and cores, and occasional prehistoric sherds. Archaeological sites identified within the project area are described below. Photographs of features and artifacts, along with additional photos of the project area, are found in Appendix A.

Table 3. Isolated Occurrences

<table>
<thead>
<tr>
<th>IO No.</th>
<th>Description</th>
<th>UTM Easting</th>
<th>UTM Northing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>aluminum top steel beverage cans, top stamped &quot;ALUMINUM,&quot; scattered over 20 m area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>brown chert tertiary, gray rhyolite core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3 plainware sherds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>ground stone fragment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>fine-grained basalt hammerstone (10 by 9.5 by 9 cm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>fire-affected rock cluster (1.4 by 1.1 m), small scatter of fire-affected rocks 3 m west-northwest; 2 plain ware sherds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>fine-grained basalt core (9 by 7 by 3.5 cm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>can with stamped mark &quot;Burlington&quot; (5 1/2 diam. by 7 1/4 ht.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>basalt tertiary flake</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>basalt core (11 by 7.5 by 4 cm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>pink chert tested cobble</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>clear glass bottle fragment,&quot;BOTTLE&quot; and UG in hexagon maker's mark (1959-1968)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>basalt secondary flake</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>brown quartzite core (14 by 9 by 4 cm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>fire-affected rock scatter, 3-m area, along rill; 20 cobbles and fragments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>basalt core/tested cobble (9 by 7 by 6 cm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IO No.</td>
<td>Description</td>
<td>UTM Easting</td>
<td>UTM Northing</td>
</tr>
<tr>
<td>-------</td>
<td>-----------------------------------------------------------------------------</td>
<td>--------------</td>
<td>--------------</td>
</tr>
<tr>
<td>17</td>
<td>basalt primary flake</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>aluminum top steel beverage, stamped &quot;Budweiser Please Don't Litter&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>basalt core (9 by 9 by 7 cm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>basalt secondary flake</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>basalt core (11 by 9 by 6 cm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>basalt secondary flake</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>basalt secondary flake</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>basalt core (8 by 7 by 5 cm), core fragment, 2 secondary flakes, 1 m area</td>
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<td></td>
</tr>
<tr>
<td>25</td>
<td>basalt tertiary flake</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>buff ware sherd, angular sand temper</td>
<td></td>
<td></td>
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<tr>
<td>27</td>
<td>plainware sherd, white grit inclusions, 2 buff sherd 20 m west</td>
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<td></td>
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<tr>
<td>28</td>
<td>fire-affected rock cluster (1.4 by 0.8 m), 25 cobbles and fragments</td>
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<tr>
<td>29</td>
<td>basalt core, 1 secondary, 1 tertiary, in 1-m area; gray rhyolite core 4 m north-northeast</td>
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<td></td>
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<tr>
<td>30</td>
<td>steel beverage can, church-key opened</td>
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<td></td>
</tr>
<tr>
<td>31</td>
<td>steel beverage can</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>plainware sherd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>steel beverage can and small sanitary can</td>
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<td></td>
</tr>
<tr>
<td>34</td>
<td>basalt core or tested cobble (12 by 11 by 10 cm), 1 basalt primary, green rhyolite core (9 by 9 by 6 cm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>3 rock piles or possible cairns: 1) 0.70 m diam.; 2) 1.0 by 0.8 m; 3) 0.6 m diam.</td>
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<tr>
<td>36</td>
<td>2 possible fire-affected rock clusters: 1) 0.75 m diam.; 2) 1.5 by 1.0 m</td>
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<td>37</td>
<td>2 steel beverage cans, church-key opened, steel oil can nearby</td>
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<td></td>
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<tr>
<td>38</td>
<td>16 steel beverage cans dispersed over 40 m area, 2 clear glass bottle bases (Maywood Glass, 1930-1959; Glass Container Corp., 1934-ca.1968), all washed down slope to road</td>
<td></td>
<td></td>
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<td>39</td>
<td>fire-affected rock scatter with core area of 12 small cobbles and fragments (1.8 m diameter), and several fragments dispersed 20 m west</td>
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<tr>
<td>40</td>
<td>4 steel beverage cans, church-key opened, 20 by 5 m area</td>
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<tr>
<td>41</td>
<td>5 steel beverage cans, church-key opened, 15 by 10 m area</td>
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<td></td>
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<tr>
<td>42</td>
<td>basalt secondary flake</td>
<td></td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>fine-grained rhyolite biface (5 by 4.5 by 1.5 cm)</td>
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<td></td>
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<tr>
<td>44</td>
<td>3 plainware sherds (9 mm th.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>basalt bifacial core (7 by 8 by 3 cm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>prospect trench (12 m long by 1.7 m wide), cut east-west into side of gravel pit wall; backhoe teeth marks visible</td>
<td></td>
<td></td>
</tr>
<tr>
<td>47</td>
<td>purple chert secondary flake</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IO No.</td>
<td>Description</td>
<td>UTM Easting</td>
<td>UTM Northing</td>
</tr>
<tr>
<td>-------</td>
<td>------------------------------------------------------------------------------</td>
<td>-------------</td>
<td>--------------</td>
</tr>
<tr>
<td>48</td>
<td>fire-affected rock scatter (3.2 by 2.2 m), 1 pink chert uniface (3 by 2 by 0.5 cm)</td>
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</tr>
<tr>
<td>49</td>
<td>basalt tested cobble</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>2 rhyolite secondary flakes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51</td>
<td>basalt secondary flake</td>
<td></td>
<td></td>
</tr>
<tr>
<td>52</td>
<td>2 aluminum top steel beverage cans, 1 is tall boy &quot;Budweiser&quot; and oil filter, shot up</td>
<td></td>
<td></td>
</tr>
<tr>
<td>53</td>
<td>aluminum top steel beverage can, stamped &quot;Budweiser&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>54</td>
<td>basalt secondary flake</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>basalt tested cobble (10 by 9 by 6 cm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>56</td>
<td>steel beverage can, church-key opened</td>
<td></td>
<td></td>
</tr>
<tr>
<td>57</td>
<td>6 small decorated sherds, basalt secondary flake</td>
<td></td>
<td></td>
</tr>
<tr>
<td>58</td>
<td>gray chert tertiary flake</td>
<td></td>
<td></td>
</tr>
<tr>
<td>59</td>
<td>4 milk cans, crushed, 3 concentric rings on top, 20 m area</td>
<td></td>
<td></td>
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<tr>
<td>60</td>
<td>chalcedony late stage biface fragment (4 by 2 by 0.5 cm)</td>
<td></td>
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<tr>
<td>61</td>
<td>fire-affect rock scatter (1.5 m diameter) containing 40 mostly intact cobbles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>fire-affect rock scatter (12 by 2.5 m area) dispersed west to east by drainage or along cattle trail</td>
<td></td>
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</tr>
<tr>
<td>63</td>
<td>rectangular Spam can with twist key</td>
<td></td>
<td></td>
</tr>
<tr>
<td>64</td>
<td>fire-affect rock scatter (1.5 m diameter) containing 20 mostly intact cobbles</td>
<td></td>
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</table>
Figure 4. Results map.
Previously Recorded Site

AZ BB:13:558 (ASM)

**Site Description:** Artifact scatter with features
**Site Function:** Resource processing
**Cultural Affiliation:** Hohokam
**Chronological Placement:** Prehistoric Ceramic (A.D. 200–1500)
**Site Size:** 190 by 122 m

**Description:** The site is located in the southeast corner of the project area. It was originally recorded by archaeologists with Kinlani Archaeology, Ltd., in 1998 as a 360-by-300-m area containing 23 fire-affected rock clusters and associated artifacts (AZSITE 1998). In 1999, the site was re-recorded by archaeologists with Old Pueblo Archaeology Center (Old Pueblo), who identified 23 fire-affected rock clusters and extended the site boundary to cover an area measuring 450 by 270 m along both sides of an incised wash that flows from east to west (AZSITE 1999). The site is mostly located within Section 12, east of the Sonoran Substation project area, but a small part of the site was depicted as extending onto Section 11 and within the Sonoran Substation project area (Figure 5). In 1999, archaeologists mapped the site and excavated 17 fire-affected rock features within Section 12 to expose features and collect flotation samples for analysis prior to the Wilmot Prison Expansion Project (Jones 2002). Recorded artifacts included 180 flakes, 2 ground stone fragments, and 45 prehistoric ceramic sherds; diagnostic artifacts included 2 Rillito or Rincon Red-on-brown, 1 Rincon or Papago Red-on-brown, and 1 Papago Red sherds, as well as 1 San Jose projectile point, 1 Cienega projectile point, and 1 Chiricahua projectile point. Diagnostic artifacts suggest the site area was used sporadically between 5000 B.C. until A.D. 1700.

During Tierra’s 2018 survey, only that portion of the site within Section 11 and along a 30.5-m-wide corridor along the west side of Section 12 was identified and documented. This portion of the site is located on the northeast side of a minor drainage and south of a power line road. Although previous recorders identified two artifact concentrations within Section 11, including one along the power line road, the few prehistoric and historic artifacts identified by Tierra archaeologists in the area along the power line road were recorded as isolated occurrences because they do not reach a density sufficient to be designated a site. Artifacts are restricted to areas around two fire-affected rock features (see Figure 5; see Appendix A, Photo A.8). In addition, a plain ware sherd and a basalt tertiary flake were identified on the south side of the road that roughly corresponds to the northern boundary of the site.

**Features:** Feature 1 is a cluster of 30 fist-sized, fire-affected cobbles in an area measuring 2.0 by 1.2 m (see Appendix A, Photo A.9). Feature 2 is similar cluster of 20 fist-sized, fire-affected cobbles in an area measuring 1.6 by 0.9 m. A wooden stake has been placed near the south edge of the feature. It is possible the stake was placed there during Old Pueblo’s 1999 recording, although the features have not been excavated. Features excavated by Old Pueblo in Section 12 revealed a few cases where shallow pit bases rest on a slightly discolored sterile argillic soil horizon.

**Artifacts:** Artifacts identified during Tierra’s survey include a limestone bifacial tool measuring 17.0 by 11.5 by 4.0 cm (PL: 2), 1 chert flake (PL 1), and three plain ware sherds (PL 3).

**Condition:** The features are situated away from rills on relatively stable surfaces, and buried deposits may be preserved.
Figure 5. Map of site AZ BB:13:558(ASM).
Interpretation and NRHP Eligibility Evaluation: The site reflects an episode of resource processing, and the two fire-affected rock features have potential to contain some intact buried deposits, including charred macrobotanical remains that could provide important information on subsistence and could provide radiocarbon dates. Additional artifacts, including diagnostic ceramics and projectile points, may be present within the site.

The site was originally recommended as Eligible for the NRHP (AZSITE 1998) because it possessed integrity and had potential to yield important information on prehistory. Following the excavations conducted by Old Pueblo, Jones (2002) recommended that the site was no longer eligible because it was unlikely to yield additional information beyond that collected and analyzed as part of the Wilmot Prison Expansion Project. However, as of 2008, the Arizona State Historic Preservation Office (SHPO) determined that the site was Eligible individually. Tierra agrees that the site should be considered Eligible for the NRHP under Criterion D because it has potential to provide additional important information on subsistence and land use.

New Archaeological Sites

AZ BB:13:980(ASM)

Site Description: Artifact scatter with features
Site Function: Resource processing
Cultural Affiliation: Hohokam
Chronological Placement: Prehistoric Ceramic (A.D. 200–1500)
Site Size: 53 by 33 m

Description: The site is located along a small rill and is about 40 m south of the power line road that crosses the project area. The site consists of four fire-affected rock features and associated artifacts (Figure 6).

Features: Feature 1 is a scatter of 60 fist-sized, fire-affected cobbles in a 3.25-m-diameter area; a small 0.8-m-diameter cluster of rocks is preserved near the center of this scatter (see Appendix A, Photo A.10). Feature 2 is a small (1.9-by-0.6-m) cluster of 15 fire-affected cobbles exposed on the side of a rill. Several fire-affected rocks are scattered between Features 2 and 1. Feature 3 is a cluster of fire-affected rocks in an area measuring 1.2 by 0.4 m. The feature is exposed in a small rill (see Appendix A, Photo A.11). Feature 4 is a small (1.1-by-0.3-m) cluster of fire-affected rocks exposed in the side of small drainage.

Artifacts: Artifacts identified in the area include six plain ware sherds.

Condition: The features are somewhat deflated, and fire-affected rocks have been dispersed by stream flow and sheetwash to the west. The large number of rocks that make up Feature 1 suggests that it may contain intact buried deposits.

Interpretation and NRHP Eligibility Evaluation: The site reflects an episode of resource processing, and the proximity of features, each within 8–16 m from the others, suggests that the features were used during a single occupation between A.D. 200 and 1500.
Figure 6. Map of AZ BB:13:980(ASM).
Although the fire-affected rock features are partially deflated, they have potential to contain intact buried deposits, including charred macrobotanical remains, that could provide important information on subsistence and could provide radiocarbon dates. The site is recommended Eligible for the NRHP under Criterion D because it has potential to provide important information on subsistence and land use.

AZ BB:13:981(ASM)

Site Description: Trash dump
Site Function: Disposal
Cultural Affiliation: Euroamerican
Chronological Placement: Late Historic (A.D. 1950–present)
Site Size: 105 by 66 feet

Description: The site consists of a scatter of tin cans and a few glass fragments. It is located on a gradual slope about 279 feet north of the power line road that crosses the project area (see Figure 4). Artifacts are concentrated in an area about 16.4 feet in diameter (see Appendix A, Photo A.12), and a few artifacts are dispersed downslope to the south and to a small drainage to the north (Figure 7).

Artifacts: Artifacts include a few glass fragments and mostly steel, flat-top beverage cans (n=11) and sanitary cans (n=4). Other identified can types include two steel cone-top beverage cans (see Appendix A, Photo A.13), two small sanitary cans, two milk cans, one rectangular meat tin, and one squat and wide sanitary can. Glass includes a clear glass jug base that is 5.5 inches in diameter, a clear glass pitcher fragment with vertical handle, and a brown bottle fragment. The clear glass jug contains the Anchor Hocking maker’s mark, and the brown glass has the Duraglas (1940–1964) and Owens Illinois (1929–ca. 1960) maker’s marks. The diagnostic cans fit within these dates. Although the milk cans were crushed, did not retain accurate dimensions, and could not be precisely dated, the beverage cans suggest a date prior to 1960. Cone-top beverage cans were phased out during the mid-1950s and discontinued entirely by 1960 (Maxwell 1993).

Condition: Cans and glass appear to have been dumped near where they were consumed and either loosed or dispersed by sheetwash downslope.

Interpretation and NRHP Eligibility Evaluation: The cans and glass fragments reflect a single dumping event that occurred prior to 1960. Because of the small number of variety of artifacts and lack of associated features, the site lacks any potential to provide important information and Tierra recommends that it is Not Eligible for the NRHP.
Figure 7. Map of AZ BB:13:981(ASM).
AZ BB:13:982(ASM)

Site Description: Artifact scatter with features
Site Function: Resource processing
Cultural Affiliation: Hohokam
Chronological Placement: Prehistoric Ceramic (A.D. 200–1500)
Site Size: 144 by 75 m

Description: The site consists of three fire-affected rock features and associated ceramics situated on the north and south sides of a drainage that flows from east to west (Figure 8). The site is located just west of the confluence of two drainages at the base of a low ridge that is covered with sparse cobbles and gravels. Artifacts and features are exposed on a reddish brown fine sandy loam surface (see Appendix A, Photo A.14).

Features: Feature 1 is a 2.5-by-1.5-m scatter of 25 fire-affected cobbles and fragments situated beside a rill (see Appendix A, Photo A.15). It is largely deflated. Feature 2 is located about 65 m south on the opposite side of the main drainage through the site. It is a 2.5-m-diameter scatter of small, mostly angular fire-affected cobble fragments (see Appendix A, Photo A.16). More fire-affected rock fragments are scattered about 3 m to the north. Feature 3 is situated in the western half of the site. It is a dispersed scatter of fire-affected rocks covering an area 12 m in diameter. Artifacts and fire-affected rocks are scattered to the west and southwest.

Artifacts: Artifacts identified at the site include numerous sherds and flakes and one metal belt buckle that is not associated with the prehistoric site. Ceramics are mostly plain wares (n=40), but a few decorated sherds are present. The decorated sherd (PL 3) is a red-on-brown ware with narrow bands. PL 1 is a brown chert early-stage biface measuring 6 by 4 by 2 cm; it retains some cortex (see Appendix A, Photo A.17). PL 2, a possible anvil, is a granitic boulder measuring 27 by 16 by 18 cm (see Appendix A, Photo A.18); it is the only boulder in the vicinity of the site. Flaked stone artifacts include eight basalt flakes and one basalt core or expedient chopper, four rhyolite flakes and a rhyolite core, one quartzite flake, and two chert flakes.

Condition: The site has been eroded and deflated, and artifacts have been dispersed from east to west. However, the relatively large number of ceramics, flaked stones, and fire-affected rocks across the site indicates that some intact deposits may be preserved.

Interpretation and NRHP Eligibility Evaluation: The site reflects episodes of resource processing between A.D. 200 and 1500. Because the features are more than 50 m apart, it is possible that they represent three distinct episodes of occupation.

Although the fire-cracked rock features are partially deflated, they have potential to contain intact buried deposits, including charred macrobotanical remains, that could provide important information on subsistence and could provide radiocarbon dates. Decorated ceramics may also provide important temporal information. The site is recommended Eligible for the NRHP under Criterion D because it has potential to provide important information on subsistence and land use.
Figure 8. Map of AZ BB:13:982 (ASM).
AZ BB:13:983(ASM)

Site Description: Artifact scatter with features
Site Function: Resource processing
Cultural Affiliation: Hohokam
Chronological Placement: Prehistoric Ceramic (A.D. 200–1500)
Site Size: 53 by 15 m

Description: The site consists of six fire-affected rock features and associated ceramics and flaked stone artifacts situated along an incised drainage (Figure 9). The site is located on the north slope of a low ridge, and the drainage flows from south to north-northwest. The surface is relatively stable, gravelly fine sandy loam, and features are intact tight clusters of rocks. The site lies 70 m south of AZ BB:13:982(ASM) and above the silty bottomlands (see Figure 4).

Features:
Feature 1 is located at the southern end of the site approximately 16 m north of the nearest feature (see Figure 3). It is a 1.5-by-1.2-m cluster of more than 100 fire-affected rocks with several additional rocks scattered across a larger, 2.5-m-diameter area (see Appendix A, Photo A.19). The rocks include fragments and whole fist-sized cobbles.

Feature 2 is a 1.25-m-diameter cluster of about 75 fire-affected rocks (see Appendix A, Photo A.20). The scatter is roughly ring-shaped with rock encircling a 20-by-10-cm area. Like the other features, rocks include fragmented and whole fist-sized and larger cobbles.

Feature 3 is the best-preserved feature at the site and is situated approximately 3 m southeast of Feature 2 on the west side of the rill that bisects the site. The fire-affected rock cluster measures 1 m in diameter and includes a bed of at least 150 densely packed fragmented cobbles (see Appendix A, Photo A.21).

Feature 4 is another largely intact fire-affected rock cluster. It is located on the east side the drainage that bisects the sites and southeast of Features 2 and 3. The feature is situated on the slightly sloped bank of the drainage. The cluster measures 1.7 m in diameter and contains at least 100 small cobbles and fragments (see Appendix A, Photo A.22).

Feature 5 is a 1.2-m-diameter scatter of some 25 fire-affected rocks that are exposed in a small rill. A few rocks are dispersed along the rill to the northwest. The feature is situated about 10 m southeast of Feature 4 and is also on the east side of the drainage that bisects the site. Because rocks have been scattered, it may be difficult to located associated buried deposits.

Feature 6 is a cluster of about 25 fire-affected rocks in 0.90-m-diameter area. A few cobble fragments are scattered within 1m around the central cluster. Rocks defining this feature are less dispersed than at Feature 5 and is significantly smaller than the well-preserved Features 1, 3, and 4.

Artifacts: Artifacts include 3 plain ware and numerous decorated sherds and flaked stone, including PL 1, a gray rhyolite core (13.5 by 13.0 by 7.5 cm) and PL 5, a scatter of two gray rhyolite secondary flakes and one basalt secondary flake. PL 2 is a cluster of red-on-brown sherds from the same vessel (see Appendix A, Photo A.23), PL 3 is a large red-on-brown sherd (see Appendix A, Photo A.24), and PL 4 is a plain ware bowl rim sherd. Decorated sherds are probably Tanque Verde Red-on-brown, which suggests that the site dates from between A.D. 1150 and 1300.
Figure 9. Map of AZ BB:13:983(ASM).
Condition: The surface of the site is relatively stable gravelly fine sandy loam, and half of the features are intact clusters of rocks. Although situated on either side of a relatively steep drainage, artifacts and features have been largely held in place within the stable, gravelly surface.

Interpretation and NRHP Eligibility Evaluation: The site reflects an episode of resource processing, and the close proximity of features, each within 2–16 m from the others, suggests that the features were likely used during a single occupation in the Hohokam Classic period.

Because the fire-affected rock features are largely intact, they have great potential to contain well-preserved buried deposits such as wood charcoal and other macrobotanicals. These kinds of remains and the context in which they were deposited are key to understanding how the thermal features were constructed and used, what plants or animals were being processed, and during what time periods they were used. The site is recommended Eligible for the NRHP under Criterion D because it has potential to provide important information on subsistence and land use.

AZ BB:13:984(ASM)
Site Description: Artifact scatter with features
Site Function: Resource processing
Cultural Affiliation: Prehistoric
Chronological Placement: Prehistoric (1500 B.C.–A.D. 1500)
Site Size: 20 by 13 m

Description: This small site contains two fire-affected rock features and one basalt flake (Figure 10). It is situated just 20 m south of the same east-west-flowing drainage that passes through AZ BB:13:982(ASM) (see Figure 4). It is located more than 200 m west of AZ BB:13:982(ASM) and 100 m upslope and east-northeast of AZ BB:13:95(ASM). The site is also located just north of and at the base of a low gravelly ridge.

Features: Feature 1 is a largely intact, circular cluster of fire-affected rocks. It is 0.85 m in diameter and includes an outer ring of cobbles, inside of which are mostly small fragments and silt (see Appendix A, Photo A.25). Feature 2 is a small (0.7-by-0.6-m) cluster of 25 fire-affected cobbles. The features are less than 4 m apart (see Appendix A, Photo A.26).

Artifacts: One basalt flake (PL 1) was identified in the area.

Condition: The features are largely intact, even though they are located within the drainage bottom. Buried deposits are likely well preserved within the features, and additional artifacts may be buried.

Interpretation and NRHP Eligibility Evaluation: The site reflects an episode of resource processing, and the proximity of two features suggests that the features were used during a single prehistoric occupation.

Because the fire-affected rock features are well preserved, they have potential to contain intact buried deposits, including charred macrobotanical remains that could provide important information on subsistence and could provide radiocarbon dates. Additional artifacts may be present in buried cultural deposits. The site is recommended Eligible for the NRHP under Criterion D because it has potential to provide important information on subsistence and land use.
AZ BB:13:985(ASM)

**Site Description:** Artifact scatter with features

**Site Function:** Resource processing

**Cultural Affiliation:** Hohokam

**Chronological Placement:** Prehistoric Ceramic (A.D. 200–1500)

**Site Size:** 32 by 20 m

**Description:** This small site contains two fire-affected rock features and one plain ware sherd (Figure 11). It is situated just 25 m south of the same east-west-flowing drainage that passes through AZ BB:13:682(ASM) (see Figure 4). It is located about 100 m downslope and west-southwest of AZ BB:13:984(ASM). The site is also located just north of and at the base of a low gravelly ridge.

**Features:** Feature 1 is an intact 1.0-by-0.8-m ring of fire-affected rocks with a few small fragments and silt inside (see Appendix A, Photo A.27). Feature 2 is a cluster of 50 fire-affected cobbles and fragments in a 1.5-m-diameter area. The features are less than 10 m apart.

**Artifacts:** One plain ware sherd (PL 1) was identified southeast of Feature 2.

**Condition:** The features are largely intact, even though they are located within the drainage bottom. Buried deposits are likely well preserved within the features, and additional artifacts may be buried.

**Interpretation and NRHP Eligibility Evaluation:** The site reflects an episode of resource processing, and the proximity of two features suggests that the features were used during a single prehistoric occupation.

Because the fire-affected rock features are well preserved, they have potential to contain intact buried deposits, including charred macrobotanical remains that could provide important information on subsistence and could provide radiocarbon dates. Additional artifacts may be present in buried cultural deposits. The site is recommended Eligible for the NRHP under Criterion D because it has potential to provide important information on subsistence and land use.
Figure 11. Map of AZ BB:13:985(ASM).
AZ BB:13:986(ASM)

Site Description: Artifact scatter with features
Site Function: Resource processing
Cultural Affiliation: Hohokam
Chronological Placement: Prehistoric Ceramic (A.D. 200–1500)
Site Size: 34 by 2 m

Description: The site consists of a single fire-affected rock feature associated with plain ware and decorated ceramics, flakes, and one projectile point (Figure 12). The site is situated along an unnamed drainage that flows southeast to northeast. It is located 180 m north of the northeast corner of the abandoned gravel pit and 400 m south of Old Vail Road (see Figure 4).

Features: Feature 1 is a 2.2-by-1.5-m cluster of about 60 fist-sized, fire-affected rocks (see Appendix A, Photos A.28 and A.29). Rocks are dispersed on a low mound surrounding a small tree.

Artifacts: Identified artifacts include 20 decorated sherds from the same vessel (PL 2; see Appendix A, Photo A.30), 3 basalt primary flakes, 1 pink chert tertiary flake, and 1 projectile point of brown chert (PL 1; see Appendix A, Photo A.31). Decorated ceramics are Tanque Verde Red-on-brown. The projectile point is nearly complete, with only its base missing, and measures 5.5 by 2.0 by 0.7 cm in size. The point is probably a Late Archaic San Pedro point (Sliva 1997:51) that was reused during the Hohokam Classic period.

Condition: The feature is somewhat deflated, and fire-affected rocks have been dispersed by streamflow and sheetwash to the northeast.

Interpretation and NRHP Eligibility Evaluation: The site reflects an episode of resource processing during a single occupation between A.D. 200 and 1500.

Although the fire-cracked rock feature may be partially deflated, it is associated with diagnostic artifacts and has potential to contain intact buried deposits, including charred macrobotanical remains that could provide important information on subsistence and could provide radiocarbon dates. The site is recommended Eligible for the NRHP under Criterion D because it has potential to provide important information on subsistence and land use.
Figure 12. Map of AZ BB:13:986(ASM).
ASSESSMENT OF EFFECT AND MANAGEMENT RECOMMENDATIONS

Tierra recommends that the seven prehistoric sites (AZ BB:13:558[ASM] and AZ BB:13:980, 982-986[ASM]) that contain fire-affected rock features and associated artifacts are Eligible for inclusion in the NRHP because they have potential to provide important information on the prehistory of the southern Tucson Basin. Preserved cultural deposits at these sites may contain charred macrobotanical remains that could provide radiocarbon dates that would position them within the culture history of the region, as well as important information on the kinds of plant and/or animal remains that were processed. These data would provide additional information on Hohokam settlement and land use in the marginal lower bajada zone between the Santa Cruz River and Santa Rita Mountains. Because of the information potential at these sites, Tierra recommends that they be avoided during the proposed undertaking.

Tierra recommends that the late Historic site (AZ BB:13:981[ASM]) is ineligible for the NRHP because it lacks sufficient information potential. Therefore, Tierra recommends that the proposed undertaking would have no adverse effect on this site.

Potential damage to NRHP-eligible sites stems from TEP's proposed construction of a new substation on a 5.11-ha (12.63-acre) parcel within a larger 21.10-ha (52.14-acre) lease area (Figure 13). In addition, four alternative transmission lines have been identified to connect the substation to existing infrastructure. Alternative 1 extends west from the proposed substation site, then north along Swan Road, to the existing 138kV transmission line that runs along Old Vail Connection Road. Alternative 2 extends east from the substation site, then north along the eastern boundary of the SSSA, to the existing transmission line. Alternative A extends west from the proposed substation site, then south along Swan Road, to the proposed WEC site. Alternative B extends east from the substation site, south along the Section 11/12 section line into Section 15, then directly west in Section 15 to the proposed WEC site.

Of the four transmission line alternatives, only Alternative B passes through an archaeological site (AZ BB:13:558[ASM]) (see Figure 13). The other alternative transmission line corridors (Alternatives 1, 2, and A) avoid identified archaeological sites. Site AZ BB:13:558[ASM] was investigated between 1998 and 1999 by archaeologists with Old Pueblo, who conducted Phase 1 archaeological testing at the site as part of the Wilmot Prison data recovery project (Jones 2002). During the Phase 1 work, Old Pueblo archaeologists remapped the site, established 436 10-m-square surface collection units across the site area within Section 12, collected all surface artifacts within these units, and sampled or completed excavated 17 fire-affected rock clusters (Jones 2002:31–32). Fire-affected rock features were found concentrated on the north and south sides of an incised and braided wash area, and the test excavations revealed 5–10 cm of the original roasting pit and often only a slightly oxidized and discolored area of about 30 cm in diameter on average. Diagnostic artifacts collected from the site surface include Rillito or Rincon Red-on-brown sherds (A.D. 850–1000), Rincon or Papago Red-on-brown sherds (A.D. 950–1150 or post 1700), and Papago Red sherds (post A.D. 1700) (Jones 2002:118–119). In addition, five projectile points from the site surface, including a Chiricahua, a San Jose, and a Cienega style point, suggest that the site may have been occupied as early as the Middle Archaic (5000–1500 B.C.) and Late Archaic (600 B.C.–A.D. 650) periods (Jones 2002:86). Following the Phase 1 data testing and analysis, Old Pueblo recommended that the site area within Section 12 has no potential for additional information important to prehistory and that no further cultural resource investigations should be required.
Figure 13. Map showing survey results and proposed construction areas and alternatives.
Because the proposed Alternative B transmission line will pass through the site area along the Section 11/12 section line, Tierra recommends that no additional archaeological work be required at site AZ BB:13:558(ASM) because the information potential at the site has been exhausted.

One archaeological site, AZ BB:13:983(ASM) is located partially within the proposed substation boundary (see Figure 13), and construction activities in the area have potential to damage the site and destroy information important to the prehistory of the Tucson Basin. To determine the nature and extent of cultural resources at the site and to mitigate potential impacts, Tierra recommends that a program of Phase 1 data testing and analysis be carried out at the site prior to any ground-disturbing activities within the substation boundary. Finally, site AZ BB:13:985(ASM) is located outside the proposed substation boundary but within the substation lease area; however, no ground-disturbing activities will take place in this area. On July 18, 2018, a Tierra archaeologist flagged the perimeters of archaeological sites AZ BB:13:983(ASM) and AZ BB:13:985(ASM), so that they will be avoided during pre-construction borings within the lease area and during access path and substation construction.

The client and all subcontractors are also reminded that, in accordance with §41-865 of the Arizona Revised Statutes, if human remains are encountered anywhere in the survey area during any subsequent ground-disturbing activities, these activities shall cease in the area of the discovery, and the Director of the ASM shall be immediately notified. The Director will then have 10 working days to respond to the request. All ground-disturbing activities in the immediate vicinity of the discovery shall cease until a qualified archaeologist assesses the remains. Work in and around the area shall not resume until so directed by ASM personnel.
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<tr>
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APPENDIX A. SELECTED PROJECT PHOTOS
Photo A.1. View of project area from gravel pit facing south-southeast.

Photo A.2. View of gravel pit in northern part of project area facing northeast.
Photo A.3. IO 6.

Photo A.4. IO 10.
Photo A.7. IO 48.


Photo A.17. PL 1 at site AZ BB:13:982(ASM).


Photo A.25. Feature 1 at site AZ BB:13:984(ASM).

Photo A.27. Feature 1 at site AZ BB:13:985(ASM).


APPENDIX B

Class I Research

CONFIDENTIAL

This appendix contains information on the locations of cultural properties discussed in the report:

*A Class III Cultural Resources Survey of the Sonoran Substation Project Area in the City of Tucson, Pima County, Arizona*

Public disclosure is prohibited by ARS §39-125.