A CULTURAL RESOURCE SURVEY FOR THE ROSEMONT PROJECT UTILITY CORRIDOR
PIMA COUNTY, ARIZONA

Prepared for:

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Tucson, Arizona

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ASM Accession No. 2009-830

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Restrict Distribution
To prevent vandalism, restrict information in this report about the location of archaeological sites.

November 2011
EXECUTIVE SUMMARY

Augusta Resource Corporation, the parent company of the Rosemont Copper Company (Rosemont), proposes to develop and operate a copper mine (Rosemont operations) in the Santa Rita Mountains of Pima County. The Rosemont operations will be located primarily in Township 8 South, Ranges 15 and 16 East, north of the Box Canyon Road and south of Mt. Fagan.

Rosemont has proposed to bring water from Sahuarita to the project site along Santa Rita Road. Rosemont has also requested that TEP provide electricity to the operations site. TEP proposes to construct a new 138 kilovolt line between a proposed substation/switchyard 3.5 miles east of Interstate 19 and 3 miles south of Sahuarita Road and the proposed Rosemont Substation. The proposed water pipeline and transmission line may be co-located within a common utility corridor. The proposed water pipeline and transmission line are hereinafter referred to as the proposed project. Rosemont has contracted with EPG to work with TEP to help site the new line.

The project area of potential effect (APE) for the Class III cultural resources survey encompasses 713 acres. This APE is designed to accommodate the co-location of two utilities—in this case a water pipeline and the power transmission line noted above—in a single corridor that is approximately 14 miles long. The width of the corridor varies along its length. For 10 miles the survey corridor is 500 feet wide where the utilities may be co-located; the survey corridor in the remaining approximate 4 miles is 150 feet wide for the pipeline only.

The project APE is located on private land and state land managed by the Arizona State Land Department and the University of Arizona within portions of Sections 17, 20, 21, 29, 31, 32, 33, 34, and 35, Township 17 South, Range 14 East; Sections 1, 2, and 12, Township 18 South, Range 14 East; Sections 7, 17, 18, 20, 21, 22, and 23, Township 18 South, Range 15 East as depicted on the Sahuarita, Corona de Tucson, and Helvetia, Arizona U.S. Geological Survey 7.5-minute topographic quadrangle maps.

A detailed records review in support of the proposed project area was conducted October 2009 by archaeologists Rachelle Robinson and Cara Lonardo. A total of 19 prior cultural resource surveys were conducted on lands that fall within a 1-mile buffer around the Class III survey area for the proposed project, and there are 38 previously recorded historic properties consisting of artifact scatters, extensive resource processing features (such as hearths and roasting pits), and very limited historic remains. Of the 38 sites identified during the records review, 3 were noted to occur in the APE of the proposed project.

Of the three previously recorded sites in the APE, one site, [REDACTED], was found to be plotted incorrectly in the AZSITE database and is not in the project APE. The two other sites were not previously evaluated for their eligibility for listing on the National Register of Historic Places (NRHP). These sites were revisited and their NRHP eligibility assessed during the field survey.

A Class III field survey was conducted between November 30, 2009 and December 10, 2009, with a total of 29 field person days of effort. Dr. Steve Swanson directed the field survey project and archaeologist Meredith Anderson served as crew chief. Dr. Steven Shelley served as Principal Investigator for the project.
HISTORIC PROPERTIES IN THE PROJECT AREA

Three previously recorded sites and six newly recorded sites were identified in the Class III survey area. One previously recorded site, (ASM), was found to be plotted incorrectly in the AZSITE database. The site area was revisited during the survey and no historic property exists there. The previously recorded and newly recorded sites are listed in Table E-1.

<table>
<thead>
<tr>
<th>Site Number</th>
<th>Land Status</th>
<th>Chronology</th>
<th>Description</th>
<th>Eligibility Recommendation</th>
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<td>ASLD*</td>
<td>and private</td>
<td>Archaic</td>
<td></td>
<td>Eligible</td>
</tr>
<tr>
<td>ASLD</td>
<td>Sedentary Period</td>
<td></td>
<td></td>
<td>Eligible</td>
</tr>
<tr>
<td>ASLD</td>
<td>Late Colonial to Sedentary periods</td>
<td></td>
<td></td>
<td>Eligible</td>
</tr>
<tr>
<td>ASLD</td>
<td>Classic Period</td>
<td></td>
<td></td>
<td>Not Eligible</td>
</tr>
<tr>
<td>ASLD</td>
<td>Classic Period</td>
<td></td>
<td></td>
<td>Eligible</td>
</tr>
<tr>
<td>ASLD</td>
<td>Ceramic Period</td>
<td></td>
<td></td>
<td>Not Eligible</td>
</tr>
<tr>
<td>Private</td>
<td>Classic Period</td>
<td></td>
<td></td>
<td>Eligible</td>
</tr>
</tbody>
</table>

*Arizona State Land Department.

Two previously recorded sites occur in the APE of the proposed project, and . The eligibility status of these sites was not evaluated during previous recordations. These two sites were revisited and assessed for their eligibility during the field survey. We recommend that these sites are eligible for listing on the NRHP under Criterion D for their potential to provide information on the subsistence strategies of Archaic and Sedentary period populations in the southern Tucson basin area.

Newly recorded sites are ). Four of these sites are recommended eligible for listing on the NRHP under Criterion D for their potential to provide significant information about prehistoric land use, subsistence strategies, and social interaction employed occupants of the southern Tucson basin area from the Preclassic through Classic periods.

For the proposed project, it may be possible for register eligible sites or contributing components of those sites to be avoided through selective tower placement or slight shifts in the pipeline placement. In these instances, it is our recommendation that those eligible historic properties be barricaded prior to construction and that an archaeological monitor be present for avoidance monitoring when construction occurs within 100 feet of the sites.
There were 41 isolated occurrences (historic remains that do not meet Arizona site definitions) found during the Class III inventory. Because none of these occurrences meets the definitions of an archaeological site or other historic property, none would be considered eligible for listing on the NRHP.

Based on the above discussion, if the sites can be avoided by the proposed project, we recommend a finding of no adverse effect to the historic properties. In the event that these sites are not able to be avoided by the project, we recommend that the project will have an adverse effect to the historic properties. In order to mitigate the adverse effects the proposed project would have on the historic properties, a mitigation plan would be developed in consultation with the Arizona State Land Department and the Arizona State Historic Preservation Office.

In the event human remains or funerary objects are discovered during construction of the proposed project on state or private land, all work in the area should cease and the finding(s) be reported to either the director of the ASM or designee in accordance with Arizona Revised Statutes § 41-844 and § 41-865.
# TABLE OF CONTENTS

Executive Summary ......................................................................................................................... i 

Historic Properties in The Project Area ......................................................................................... ii 

Abstract ........................................................................................................................................ viii 

Introduction .................................................................................................................................... 1 

Project Description ..................................................................................................................... 1 

Project Location .......................................................................................................................... 1 

Environmental Setting ................................................................................................................ 3 

Culture History ............................................................................................................................. 4 

Paloindian Period (11,500 BC to 7500 BC) ................................................................................. 5 

Archaic Period (7500 BC to 1200 BC) ......................................................................................... 6 

Early Agricultural Period (1200 BC to AD 50) ......................................................................... 6 

Early Ceramic Period (AD 50 to AD 500) ................................................................................. 7 

The Hohokam (AD 500 to AD 1450) ......................................................................................... 7 

Protohistoric Period (AD 1450 to AD 1694) ............................................................................ 8 

Spanish and Mexican Periods (AD 1694 to AD 1856) ......................................................... 8 

American Territorial and American Statehood Periods (AD 1856 to Present) .................... 9 

Methods ...................................................................................................................................... 10 

Records Review .......................................................................................................................... 10 

Intensive Pedestrian Survey ...................................................................................................... 10 

National Register Assessment .................................................................................................... 12 

Survey Expectations .................................................................................................................... 12 

Records Review .......................................................................................................................... 13 

Prior Cultural Resource Studies ............................................................................................... 13 

Previously Recorded Sites ......................................................................................................... 19 

Previously Recorded but Misplotted Sites ............................................................................... 20 

General Land Office Plat Maps ............................................................................................... 21 

Survey Results ............................................................................................................................ 21 

Previously Recorded Sites in the APE ....................................................................................... 27 

Newly Recorded Sites .............................................................................................................. 36 

Recommendations ..................................................................................................................... 73 

References Cited .......................................................................................................................... 74
LIST OF TABLES

Table E-1  Historic Properties Recorded During the Class III Inventory ........................................ ii
Table 2: Cultural Chronology of the Tucson Basin¹ ................................................................. 5
Table 3: Prior Cultural Resource Studies .................................................................................. 13
Table 4: Previously Recorded Sites ......................................................................................... 19
Table 5: Recorded at Site ........................................................................................................ 33
Table 6: Observed at Site ........................................................................................................ 39
Table 7: Observed at Site ........................................................................................................ 40
Table 8: Observed at Site ........................................................................................................ 40
Table 9: Observed at Site ........................................................................................................ 45
Table 10: Observed at Site ..................................................................................................... 49
Table 11: Observed at Site .................................................................................................... 49
Table 12: Observed at Site ..................................................................................................... 53
Table 13: in Observation Unit 1 at Site ............................................................................... 59
Table 14: Observed at Site .................................................................................................... 66
Table 15: Observed at Site ..................................................................................................... 67
Table 16: Isolated Occurrences in the APE ............................................................................ 71

LIST OF FIGURES

Figure 1: Project Location ....................................................................................................... 2
Figure 2a: Previous Surveys ................................................................................................. 14
Figure 2b: Previous Surveys ................................................................................................. 15
Figure 2c: Previous Surveys ................................................................................................. 16
Figure 2d: Previous Surveys ................................................................................................. 17
Figure 2e: Previous Surveys ................................................................................................. 18
Figure 3a: Survey Results ...................................................................................................... 22
Figure 3b: Survey Results ...................................................................................................... 23
Figure 3c: Survey Results ...................................................................................................... 24
Figure 3d: Survey Results ...................................................................................................... 25
Figure 3e: Survey Results ...................................................................................................... 26
Figure 4: Site Map ................................................................................................................ 28
LIST OF PHOTOGRAPHS

Photograph 1: Overview of the project area from ..................................................... 3
Photograph 2: Overview of the west end of the project area, view to the east .................. 4
Photograph 3: Overview of Site ............................................................................... 29
Photograph 4: Site showing location of features recorded in 2006, ................................ 31
Photograph 5: Feature 1, example of a relatively .................................................... 34
Photograph 6: Feature 14, example of ................................................................. 34
Photograph 7: ........................................................................................................ 35
Photograph 8: Overview of Site ................................................................................ 36
Photograph 9: Possible ............................................................................................. 38
Photograph 10: ........................................................................................................ 39
Photograph 11: ........................................................................................................ 42
Photograph 12: Overview of Site ............................................................................ 43
Photograph 13: Overview of Site ............................................................................ 46
Photograph 14: Feature 1, Site ............................................................................... 48
Photograph 15: Overview of Site ............................................................................ 51
Photograph 16: Overview of Site ............................................................................ 56
Photograph 17: Feature 1, Site ............................................................................... 57
Photograph 18: Overview of Feature 2, Site ............................................................ 57
Photograph 19: Overview of Feature 3, Site ............................................................ 58
Photograph 20: Overview of Site ............................................................................ 60
Photograph 21: Overview of Feature 1, Site ............................................................ 62
Photograph 22: Overview of Feature 2, Site ........................................63
Photograph 23: Overview of Feature 3, Site ........................................64
Photograph 24: Overview of Feature 4, Site ........................................64
Photograph 25: .................................................................................65
Photograph 26: .................................................................65
Photograph 27: ...........................................................................69
Photograph 28: ...........................................................................70
ABSTRACT

Project Title: Rosemont Project Utility Corridor

Report Title: A Cultural Resource Survey for the Rosemont Utility Corridor Project, Pima County, Arizona (revised)

Report Date: November 2011

Agencies: U.S. Forest Service, Arizona State Land Department

Permit Number: Arizona Blanket Permit 2009-0026bl; Arizona State Museum (ASM) Accession Number 2009-830

Project Number: EPG (Environmental Planning Group) Project Number RMC 0001

Project Description: Augusta Resource Corporation, the parent company of the Rosemont Copper Company (Rosemont), proposes to develop and operate a copper mine (Rosemont operations) in the Santa Rita Mountains of Pima County. The Rosemont operations will be located primarily in Township 8 South, Ranges 15 and 16 East, north of the Box Canyon Road and south of Mt. Fagan.

Rosemont has proposed to bring water from Sahuarita to the project site along Santa Rita Road. Rosemont has also requested that TEP provide electricity to the operations site. TEP proposes to construct a new 138 kilovolt (kV) line between a proposed substation/switchyard 3.5 miles east of Interstate 19 and 3 miles south of Sahuarita Road, and the proposed Rosemont Substation. The proposed water pipeline and transmission line may be co-located within a common utility corridor. The proposed water pipeline and transmission line are hereinafter referred to as the proposed project. Rosemont has contracted with EPG to work with TEP to help site the new line.

The project area of potential effect (APE) for the Class III cultural resources survey encompasses 713 acres. This APE is designed to accommodate the collocation of multiple utilities—in this case a water pipeline and the power transmission line noted above—in a single corridor that is approximately 14.7 miles long. The width of the corridor varies. For 10.4 of miles the survey corridor is 500 feet wide, while the survey corridor in the remaining 4.3 miles is 150 feet. This variation in the width of the survey corridor is directly related to uncertainty regarding the precise location of the water pipeline and the power transmission line.
Acreage: The survey consisted of a total of 713 acres. Of these, 91 acres are on private land while the remaining 622 acres are on state land under the jurisdiction of the Arizona State Land Department.

Location and Jurisdiction: The project APE is located on private land and state land managed by the Arizona State Land Department and the University of Arizona.

The project is within portions of Sections 17, 20, 21, 29, 31, 32, 33, 34, and 35, Township 17 South, Range 14 East; Sections 1, 2, and 12, Township 18 South, Range 14 East; Sections 7, 17, 18, 20, 21, 22, and 23, Township 18 South, Range 15 East as depicted on the Sahuarita, AZ, Corona de Tucson, AZ, and Helvetia, AZ U.S. Geological Survey 7.5-minute topographic quadrangle maps.

Personnel and Dates of Fieldwork: The detailed records review, in support of the proposed project, was conducted October 2009 by archaeologists Rachelle Robinson and Cara Lonardo. Dr. Steve Swanson directed the field survey project and archaeologist Meredith Anderson served as crew chief. Dr. Steven Shelley surveyed as principal investigator for the project. The fieldwork was conducted between November 30, 2009 and December 10, 2009. A total of 29 field-person days of effort were devoted to the fieldwork.

Register-eligible Sites:

Register-ineligible Sites:

Recommendations: The intensive pedestrian survey in support of the proposed Rosemont Utility Corridor Project identified a total of 41 isolated occurrences, 6 newly identified sites, and 2 previously recorded sites. Newly recorded sites are . A total of 4 out of 6 newly recorded sites are recommended eligible for listing on the National Register of Historic Places under Criterion D for their potential to provide significant information about prehistoric land use, subsistence strategies, and social interaction employed by Preclassic and Classic period occupants of the southern Tucson basin area during prehistory.

Three sites were identified during the records review as occurring in the APE of the proposed project. These sites include , was
found to be plotted incorrectly in the AZSITE database—this site is not in the project APE. The two other sites were revisited and assessed for their eligibility during the field survey. The eligibility status of these sites was not evaluated during previous recordations. We find that these sites are recommended eligible under Criterion D for their potential to provide information on the subsistence strategies of Archaic and Preclassic period populations in the southern Tucson basin area in prehistory.

Given the nature of the project, it may be possible for the register eligible sites to be avoided. In the event that register eligible sites can be avoided during construction, it is our recommendation that those eligible archaeological sites be barricaded prior to construction and that an archaeological monitor be present for avoidance monitoring when construction occurs within 100 feet of the sites.

Based on the above discussion, if the sites can be avoided by the proposed project we recommend a finding of no adverse effect to the historic properties. In the event that these sites are not able to be avoided by the project, we recommend that the project will have an adverse effect to the historic properties. In order to mitigate the adverse effects the proposed project would have on the historic properties, a mitigation plan would be developed in consultation with the Arizona State Land and the Arizona State Historic Preservation Office.

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A CULTURAL RESOURCE SURVEY FOR THE ROSEMONT UTILITY
CORRIDOR PROJECT, PIMA COUNTY, ARIZONA

INTRODUCTION

Rosemont Copper Company (Rosemont) retained EPG (Environmental Planning Group) to conduct a cultural resource survey of the proposed location of the Rosemont utility corridor for a waterline and a 138 kilovolt (kV) transmission line (proposed project [Figure 1]). These studies are intended to assist in compliance with the Arizona State Historic Preservation Act. Because this survey was performed as part of a larger project, the U.S. Forest Service has been designated as the lead agency for Section 106 compliance.

Project Description

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Project Location

The project APE is located on private land and state land managed by the Arizona State Land Department (ASLD) and the University of Arizona. The project is within portions of Sections 17, 20, 21, 29, 31, 32, 33, 34, and 35, Township 17 South, Range 14 East; Sections 1, 2, and 12 Township 18 South, Range 14 East; Sections 7, 17, 18, 20, 21, 22, and 23, Township 18 South, Range 15 East as depicted on the Sahuarita, AZ, Corona de Tucson, AZ, and Helvetia, AZ U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle maps. The APE incorporates all areas where the facilities could possibly be built.
Figure 1: Project Location.
ENVIRONMENTAL SETTING

Although environmental factors do not necessarily determine the course of human events, the environment affects the actions and interactions of all human groups (Photograph 1, Photograph 2). Thus, it is important to characterize the local environment as a background for the summary of local culture history.

Photograph 1: Overview of the project area from .

The vegetation in the APE is predominantly Sonoran Desertsrurb and Chihuahuan Desertsrurb, with Semidesert Grassland in the foothills and bajadas emanating from the Santa Rita Mountains (Brown 1994). The Sonoran Desertsrurb vegetation comprises primarily the mixed palo verde–cacti association that gives way locally to elements of the Lower Colorado River Valley Subdivision of the Sonoran Desert. The primary Lower Colorado River Valley Subdivision association present is creosote bush (*Larrea tridentata*)–bursage (*Ambrosia* sp.). In many areas the mixed palo verde–cacti association is best represented along ephemeral drainage ways by creosote bush. Chihuahuan Desertsrurb, found mainly in the east-central portion of the study area, is a shrub-dominated desert formation with creosote bush, whitethorn, mariola (*Parthenium incanum*), banana yucca (*Yucca baccata*), and ocotillo (*Fouquieria splendens*). Vegetation in the Semidesert Grassland is dominated by velvet mesquite, foothill palo verde (*Parkinsonia microphylla*), blue palo verde (*P. florida*), chain-fruit cholla (*Opuntia fulgida*), cane cholla (*O.
(O. violacea), brownspine prickly pear (O. phaeacantha), and barrel cactus (Ferocactus wislizenii). Vegetation growing on the banks of ephemeral watercourses in Semidesert Grassland, creosote bush–bursage associations, and in the palo verde–mixed cacti association generally consists of the same tree and shrub species, including mesquite (Prosopis juliflora), blue palo verde, catclaw (Acacia greggii), desert hackberry (Celtis pallida), and wolfberry (Lycium sp.).

Photograph 2: Overview of the west end of the project area, view to the east.

CULTURE HISTORY

The history of the Tucson Basin is one that shows a close relationship between people and the natural environment. The desert environment has strongly influenced subsistence practices and as a result, social organization. Changes in the social environment have often made it possible to more efficiently exploit environmental resources. In general, time adaptations to the arid region have become more specialized and regional in scope. By AD 650, Tucson Basin groups could be differentiated from those living in other areas of the Southwest. Modern technology has allowed Tucson and its inhabitants to be less dependent on local adaptation. The chronology of the Tucson Basin is summarized in Table 2.
### Table 2: Cultural Chronology of the Tucson Basin

<table>
<thead>
<tr>
<th>Era</th>
<th>Period</th>
<th>Phase</th>
<th>Date Range</th>
</tr>
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<td>AD 1912 – Present</td>
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<tr>
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<td>American Territorial</td>
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<td>AD 1856 – AD 1912</td>
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<tr>
<td></td>
<td>Mexican</td>
<td></td>
<td>AD 1821 – AD 1856</td>
</tr>
<tr>
<td></td>
<td>Spanish</td>
<td></td>
<td>AD 1694 – AD 1821</td>
</tr>
<tr>
<td></td>
<td>Protohistoric</td>
<td></td>
<td>AD 1450 – AD 1694</td>
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<tr>
<td>Prehistoric</td>
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<td>Tucson</td>
<td>AD 1300 – AD 1450</td>
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<td></td>
<td>Tanque Verde</td>
<td>AD 1150 – AD 1300</td>
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<td>Hohokam Sedentary</td>
<td>Late Rincon</td>
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<td>Early Rincon</td>
<td>AD 950 – AD 1000</td>
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<td>Rillito</td>
<td>AD 850 – AD 950</td>
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<td>Cañada del Oro</td>
<td>AD 750 – AD 850</td>
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<tr>
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<td>Snaketown</td>
<td>AD 700 – AD 750</td>
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<td>Tortolita</td>
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<td>Late Agua Caliente</td>
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<td>7500 BC – 6500 BC</td>
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<td>Paleolindian</td>
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<td>11,500 BC – 7500 BC</td>
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</table>

1Adapted from Thiel and Diehl 2006

**Paleoindian Period (11,500 BC to 7500 BC)**

The earliest use of the Tucson Basin was during the Paleoindian Period (approximately 13,000 years ago), a time when the climate was both wetter and cooler than today. This period was characterized by small, mobile groups of hunter-gatherers who briefly occupied temporary campsites during their search of food and other resources (Cordell 1997:67). We know the most about hunting of large mammals, such as Mammoth and Bison, since these are the types of sites from this time period that are typically recognized. Paleoindian remains are rare in the Tucson Basin, given the large number of sites of this age found just east in the San Pedro River Valley. A (*[*site name*]*) was collected from the (*[*site name*]*) in the Tucson Basin (Doelle 1985:181-182). Another fluted Paleoindian point was found in Rattlesnake Pass, in the northern Tucson Basin (Agenbroad 1967). These rare finds suggest prehistoric use of the Tucson
area began at this time. Post-Clovis occupation of the Tucson Basin by Paleoindian groups is indicated by Plainview-like, unfluted spear points found in several locations (Mabry 1998:47).

**Archaic Period (7500 BC to 1200 BC)**

Climatic changes associated with the end of the last Glacial Period marked the transition from the Paleoindian Period to the Archaic Period. The Tucson Basin became warmer and drier, so that by the end of this time the environment came to look much like it does today. The establishment of the Sonoran Desert communities provided a greater mixture of subsistence opportunities, particularly with wild plants. Archaic Period people pursued a mixed subsistence strategy, characterized by intensive wild plant gathering and the hunting of small animals. The only Early Archaic (7500 BC to 6500 BC) site known from the Tucson Basin is found in Ruelas Canyon, south of the Tortolita Mountains (Swartz 1998:24). Middle Archaic sites, dating between 3500 BC and 2100 BC, are known from the bajadas surrounding Tucson and floodplain and mountain areas. Middle Archaic sites have been excavated in the Tucson Basin along the Santa Cruz River (Gregory 1999) and the southern foothills and bajada of the Santa Catalina Mountains (Chavarria 1996; Dart 1984, 1986; Douglas and Craig 1986). Archaic Period sites in the Santa Cruz floodplain were found to be deeply buried by alluvial sediments, suggesting more of these sites are present but undiscovered, due to the lack of surface evidence.

**Early Agricultural Period (1200 BC to AD 50)**

The Early Agricultural Period (previously called the Late Archaic Period) began with the introduction of domesticated plant species in the greater Southwest. The timing of the introduction of cultigens from Mexico is not known. Radiocarbon dates on maize suggest that cultivation in the Tucson Basin and other areas of the Southwest was underway by 1200 BC (Mabry 2006). By 400 BC, substantial agricultural settlements existed on the Santa Cruz River floodplain. Recent archaeological investigations suggest canal irrigation also began sometime during this period.

Recent excavations have revealed Early Agricultural Period sites in the Tucson Basin and its vicinity (Diehl 1997; Ezzo and Deaver 1998; Freeman 1998; Gregory 2001; Huckell and Huckell 1984; Huckell et al. 1995; Mabry 1998, 2006). These sites tend to contain small, round, or oval semi-subterranean pithouses, many with large internal storage pits. At some sites a larger, round structure is also present, which is thought to have been for communal or ritual purposes. Stylistically distinctive Cienega, Cortaro, Empire, and San Pedro type projectile points are common, as are a range of groundstone and flaked-stone tools, ornaments, and marine shell jewelry (Diehl 1997; Mabry 1998). The presence of marine shell and certain lithic materials, not locally available in the Tucson area, suggests trade networks were operating. Agriculture, particularly the cultivation of maize, was important in the diet. Dependence on gathered wild plants such as tansy mustard and amaranth seeds, mesquite seeds and pods, and agave hearts was still common. Protein was provided by hunting of animals such as deer, cottontail rabbits, and jackrabbits.
Early Ceramic Period (AD 50 to AD 500)

Ceramic artifacts, including figurines and crude pottery, were first produced in the Tucson Basin at the beginning of the Early Agricultural Period (Heidke and Ferg 2001; Heidke et al. 1998); however, the widespread use of ceramic containers did not occur until the transition to the Early Ceramic Period (Huckell 1993). Undecorated plainware pottery was widely used in the Tucson Basin by about AD 50, at the start of the Agua Caliente Phase (AD 50 to AD 500).

During the Early Ceramic Period architecture became more formalized and substantial, perhaps indicating the investment in more permanent settlements (Wallace 2003). Pithouse styles were varied throughout this period and included small, round, and basin-shaped houses, and slightly larger sub-rectangular structures. Significantly larger structures may have functioned as communal or ritual structures.

Reliance on agricultural crops increased with a wide variety of cultigens, including maize, beans, squash, cotton, and agave becoming the staple part of the subsistence economy. Populations grew as farmers expanded their crop production to floodplain land near permanently flowing streams; canal irrigation systems are also assumed to have expanded. Evidence from archaeological excavations indicates trade in shell, turquoise, and obsidian, while other materials intensified and new trade networks developed (Thiel and Diehl 2006).

The Hohokam (AD 500 to AD 1450)

The Hohokam tradition developed in the deserts of central and southern Arizona around AD 500 and is characterized by the introduction of redware and decorated ceramics—red-on-buff-ware in the Phoenix Basin and red-on-brown-ware in the Tucson Basin (Doyel 1991; Wallace et al. 1995). Redware pottery was introduced to the ceramic assemblage during the Tortolita phase (AD 500 to AD 700). Through time Hohokam pottery became increasingly decorated with highly distinctive geometric figures and life forms such as birds, humans, and reptiles.

The Hohokam sequence is divided into the Preclassic (AD 500 to AD 1150) and Classic (AD 1150 to AD 1450) occupations. At the start of the pre-Classical, small pit-house hamlets and villages were clustered around the Santa Cruz River. About AD 750, large, nucleated villages were established along the river or its major tributaries. Smaller settlements in outlying areas served as seasonal camps for hunting, gathering, or limited agriculture (Doelle and Wallace 1991). Some riverine villages had large, basin-shaped earthen embankments. These features probably served as arenas for playing a type of ball game, as well as for holding religious ceremonies and other communal purposes (Wilcox 1991; Wilcox and Sternberg 1983).

Between AD 950 and AD 1150, Hohokam settlement in the Tucson area became more dispersed, with people using the extensive bajada zone as well as the valley floor (Doelle and Wallace 1986). Possibly driven by an increase in population, functionally specific seasonal sites and more permanent habitations were now situated away from the river. The largest sites were still situated on the terraces just above the Santa Cruz River. There is evidence for increasing specialization in ceramic manufacture at this time, with some village sites producing decorated red-on-brown ceramics for trade throughout the Tucson area (Harry 2000; Heidke 1988, 1996; Huntington 1986).
Dramatic changes in settlement patterns, and possibly in social organization, are seen in the Classic Period. Above-ground adobe compound architecture appears for the first time supplementing traditional semi-subterranean pithouse architecture (Crown 1991). Maize agriculture was still the primary subsistence focus; however, extremely large Classic Period rock-pile field systems associated with the cultivation of agave have been found in both the northern and southern portions of the Tucson Basin (Doelle and Wallace 1991; Fish et al. 1992).

Platform mounds are found at a number of Tucson Basin villages dating around AD 1275 to AD 1300 (Gabel 1931) and are typical of mounds that occur throughout southern and central Arizona. Platform mounds typically consist of a central structure that was deliberately filled to create an elevated room on a platform. The function of this room is unclear. Some were undoubtedly used for habitation, while others may have been primarily ceremonial. The construction of a platform mound required a fair degree of organization and labor; such mounds are thought to be symbols of a socially differentiated society (Doelle et al. 1995; Elson 1998; Fish et al. 1992; Gregory 1987). Around the time that the platform mounds were constructed, most of the smaller sites were abandoned. Tucson Basin populations were largely concentrated at a half-dozen large, aggregated communities. Research has suggested that aggregation and abandonment in the Tucson area may be related to an increase in conflict and possibly warfare (Wallace and Doelle 1998). By AD 1450, the Hohokam tradition as presently known disappeared from the archaeological record.

**Protohistoric Period (AD 1450 to AD 1694)**

Little is known of the period from AD 1450 to AD 1694, when Father Eusebio Francisco Kino first traveled to the Tucson Basin (Doelle 1984). By this time the Hohokam tradition had disappeared and many of the native groups present today were first identified. Living west of the Santa Cruz River were the Tohono O’odham. Along the San Pedro and Santa Cruz rivers were a people known as the Sobaipuri (Doelle and Wallace 1990; Masse 1981). Both groups spoke the Piman language and lived in oval, jacal surface dwellings. The mission of San Xavier del Bac was established by Spanish Jesuit priests. One of the larger Sobaipuri communities was located at Bac; however, due to the paucity of documents and archaeological research, little can be said regarding this period.

**Spanish and Mexican Periods (AD 1694 to AD 1856)**

Spanish exploration of southern Arizona began at the end of the seventeenth century. Early Spanish explorers in the Southwest noted the presence of Native Americans living in the Tucson area; this was the largest concentration of population in southern Arizona (Doelle and Wallace 1990). Father Bernard Middendorf arrived in the Tucson area in 1757, and within 15 years the construction of the San Agustín Mission, near the base of A-Mountain, was begun. By 1773 a church was completed (Dobyns 1976:33).

In 1775, the site for the Presidio of Tucson was selected on the eastern margin of the Santa Cruz River floodplain. The Presidio of Tucson was one of several forts built both to counter the threat of Apache raiding groups who had entered the region at about the same time as the Spanish, and to establish Spain’s hold on this part of the frontier against encroachment by other European
powers (Thiel et al. 1995; Wilcox 1981). With the presidio for protection, Spanish colonists established farms along the Santa Cruz River, mines in the surrounding hills, and grazed cattle. Spanish goods, and the relative safety provided by the presidio, attracted indigenous settlers. The Spanish and Native American farmers grew corn, wheat, and vegetables, and cultivated fruit orchards. The San Agustín Mission was known for its impressive gardens (Williams 1986).

Mexico gained independence from Spain in 1821. Mexican settlers continued farming, ranching, and mining activities in the Tucson Basin until the threat of Apache raids forced them out of all but the presidio. The San Agustín Mission was abandoned in 1831, followed by much of the rest of the Tucson Basin (Elson and Doelle 1987; Hard and Doelle 1978).

**American Territorial and American Statehood Periods (AD 1856 to Present)**

The 1848 resolution of the Mexican-American War and the 1853 Gadsden Purchase resulted in Mexico ceding much of the Greater Southwest to the United States, establishing the international boundary at its present location. The U.S. Army’s first outpost was in Tucson in 1856, and in 1873 Fort Lowell was moved from town (at that time well to the west) to the confluence of the Tanque Verde Creek and Pantano Wash.

Railroads arrived in Tucson in the 1880s. The railroads not only brought goods and services previously unavailable in most of Arizona, it also brought an influx of new Anglo-American settlers. The surrender of Geronimo in 1886 ended Apache raiding, and the region’s settlement boomed as people felt safe to establish homes, ranches, and businesses away from the protection of the army. Local industries associated with mining and manufacturing grew, and the railroad supplied the Santa Cruz River Valley with commodities it could not produce locally. Homesteaders established numerous cattle ranches in outlying areas, bringing additional residents and income to the area.

By the twentieth century municipal improvements to water and sewer service, as well as the introduction of electricity, made life in southern Arizona more hospitable (Mabry et al. 1994). New residences and businesses continued to appear within an ever-widening perimeter around Tucson, and city limits stretched to accommodate the growing population. Tourism, the health industry, and activities centered on the University of Arizona and Davis-Monthan Air Force Base have contributed significantly to the growth and development in the Tucson Basin in the twentieth century (Sonnichsen 1982).

Noteworthy twentieth century events in the area include the establishment of the Santa Rita Experimental Range (SRER), now operated by the University of Arizona, and the creation of the communities of Sahuarita and Helvetia. SRER is located approximately 15 miles south of Tucson. Established in 1903 by the US Department of Agriculture, it is the oldest experimental range in the country, managed by the US Forest Service until 1987, when administration was taken over by the University of Arizona College of Agriculture. SRER is located approximately 15 miles south of Tucson. Established in 1903 by the US Department of Agriculture, it is the oldest experimental range in the country, managed by the University of Arizona College of Agriculture. SRER includes more than 80 square miles, spanning Sonoran Desert at less than 3,000 feet elevation and receiving less than 10 inches of precipitation, to semi-arid grassland scrub at 4,500 feet elevation and receiving approximately 18 inches of annual precipitation. SRER was founded to study range recovery from drought and overgrazing, as well as sustainable grazing practices. Livestock grazing has
been studied by university and government scientists at SRER for over 80 years. Parts of the
rangeland have been excluded from grazing since 1903, and many ecological and wildlife studies
have been conducted on grazed and ungrazed areas at SRER through the use of an archive of
repeat photos, some dating back to 1903 (University of Arizona College of Agriculture and Life
Sciences 2010).

The Town of Sahuarita was founded in 1911 (Arizona Department of Commerce 2008) and
incorporated in 1994 (Town of Sahuarita 2007). During World War II, Sahuarita was home to an
agricultural effort focused on cultivation of rubber producing plants such as guayule, a German
prisoner of war camp, and a bombing and gunnery range used to train Army Air Force aircrews.

Helvetia (AZ EE:1:80[ASM]) was founded in 1891 for the settlement of workers from the
surrounding copper mines. At its peak, the city had 550 inhabitants, most of which were
Mexicans. In 1911, the Helvetia mines closed due to low commodity prices, though mining
activity in the surrounding area continued into the 1950s. The Helvetia Post Office opened on
December 12, 1899 and closed on December 31, 1921, thus marking the end of the town (Ezzo et
al. 2009). Currently, Helvetia consists of little more than a few foundation walls, traces of a
cemetery, and a scattering of slag heaps and mine shafts.

METHODS

Records Review

EPG conducted a literature review for the proposed project. Records at the following institutions
were reviewed:

- Arizona State Historic Preservation Office
  - NRHP
  - Arizona State Register of Historic Places
- AZSITE Database (University of Arizona 2009)
- BLM Arizona State Office (General Land Office [GLO] Maps)
- Coronado National Forest
- Arizona State Museum (ASM)

The goal of the review was to identify any prior cultural resource surveys or recorded
archaeological and historical sites within 1 mile of the APE, and assess the potential for the
project to affect cultural resources. The detailed records review, in support of the proposed
project, was conducted October 2009 by archaeologists Rachelle Robinson and Cara Lonardo.

Intensive Pedestrian Survey

The fieldwork was conducted between November 30 and December 10, 2009. Dr. Steve
Swanson directed the survey and Meredith Anderson served as crew chief. A total of 40 field-
person days of effort were devoted to the fieldwork.
The field crew identified the survey areas using aerial photographs and confirmed these locations with a Magellan Mobile Mapper CX global positioning system (GPS) with an accuracy of 2-3 meters RMSE. The field crew surveyed the APE by walking systematic, parallel pedestrian transects, spaced no more than 15 meters (approximately 50 feet) apart and oriented parallel to the centerline of the survey corridor. A GPS was used to map the location of isolated artifacts, features, artifact scatters, and sites found during the survey.

Site identification and boundaries were defined according to the ASM guidelines. The ASM Site Recording Manual (version 1.1) defines a site as the physical remains of past human activity that is at least 50 years old. ASM letters dated October 1, 1994 and August 21, 1995 further specify what may constitute a site, including the following:

- 30 or more artifacts of a single class within an area of 15 meters (50 feet) in diameter, except when all pieces appear to originate from a single source
- 20 or more artifacts, including at least two classes of artifact types within an area of 15 meters (50 feet) in diameter
- 2 or more temporally associated archaeological features without any artifacts

ASM recognizes that there may be situations that warrant designation as an archaeological site and gives archaeologists authority to use professional judgment in making appropriate field determinations. One such circumstance would include non-linear, isolated features devoid of artifacts. ASM defines an isolated feature as a feature that does not have any additional features within a 100-meter (328 feet) radius. Examples of non-linear features include isolated rock piles, mine shafts, prospecting pits, and unidentified depressions. In these types of situations, ASM allows archaeologists to make decisions concerning the classification of these features as a site.

All cultural materials were recorded according to their type and material, with features and isolated artifacts plotted with a GPS. Within each artifact class further designations were used to describe each artifact. These designations were used to draw inferences concerning the activities that may have occurred at each location. Designations include brief descriptions of the stages of manufacture and the degree of core reduction in chipped-stone materials, the location of wear on groundstone items, and the ceramic style (if identifiable). Temporally diagnostic artifacts were either drawn by hand or photographed. Artifact density at archaeological sites was calculated on the basis of surface artifact quantity across the total site area.

Chipped-stone material was identified according to the stages of lithic manufacturing and was labeled as primary, secondary, or tertiary flakes. Each of the flake types have been defined as follows:

- Primary flakes have 100 percent cortex on dorsal side and are the result of initial core reduction.
- Secondary flakes have less than 100 percent cortex and represent the middle process of tool manufacturing.
- Tertiary flakes are typically very thin and do not have cortex. These flakes represent the last stage in tool manufacturing.

Ceramics are important temporal and cultural indicators. All ceramics were recorded according to ware (plainware, redware, etc.). If a design element was present and was sufficient to allow a confident identification, the ceramic was recorded to specific type.

When cultural material was identified in the field, the crew examined the surrounding area to determine whether any additional artifacts were present. From the presence or absence of additional cultural materials, members of the field crew determined whether the artifact was part of a site or an isolated occurrence. The site integrity and subsurface potential of each site was evaluated as accurately as possible, based solely upon surface observation. No artifact collections were made and no surface testing was conducted during the survey.

**National Register Assessment**

Sites were evaluated in the field as to their eligibility for listing on the NRHP. The eligibility of a property for listing on the NRHP may be based on national, state, or local significance. Properties eligible for listing on the NRHP must demonstrate importance in American history, architecture, archaeology, engineering, or culture. A property is considered significant in these categories if it meets one or more of the criteria from the NRHP regulations listed in 36 CFR § 60.4.

In addition to demonstrating significance in one or more categories cited above, a property must also demonstrate integrity. The historic property must be a preservable entity that demonstrates the qualities that make it significant. Integrity is most often assessed based on the condition of the site’s location, setting, design, materials, workmanship, feeling, and association.

**SURVEY EXPECTATIONS**

The information identified in the literature review indicates that archaeological sensitivity is high across the project study area. Prehistoric cultural remains located in the project siting area consist of several site types. Most common are sites that are likely associated with agricultural production and food processing on the bajada. These sites tend to be low- to moderate-density artifact scatters accompanied by rock features (piles, linear alignments, check dams). Less common are artifact scatters associated with food processing. These types of sites tend to be artifact scatters (frequently lithic scatters, occasionally with ceramics) with evidence of roasting pits. Habitation sites tend to be rare in large measure due to the paucity of critical resources, such as predictable water and arable land, needed to support larger population densities.

Historic sites within or near the APE consist mainly of the town of Helvetia. Helvetia was founded in 1891 for the settlement of workers from the surrounding copper mines. Currently, Helvetia consists of little more than a few foundation walls, traces of a cemetery, and a scattering of slag heaps and mine shafts.
RECORDS REVIEW

Our literature review identified 19 studies and 38 previously recorded sites that were conducted within 1 mile of the project APE.

Prior Cultural Resource Studies

A list of prior cultural resources studies is provided instable, and their locations are plotted on Figure 2a through Figure 2e. The earliest survey identified was a survey conducted in 1975 (Debowski 1980). Other studies identified include work associated with scholarly research (Buttery 1987), state land surveys (Rozen 1985a,b; Rozen 1988; Rozen 1989a; Alexander and Kenny 1992), the expansion of mining operations (Stone 1999; Christenson 2006; Ezzo et al. 2009), soil surveys (Lange 1999; Twilling 2003), road surveys (Archer et al. 2000; Heilen and Stephen 2001; Hesse and Petersen 2003), and the development of electrical transmissions lines (Fenicle et al. 1988; Stephen 1995; Tucker 1997; Moses 2004). These surveys have identified numerous prehistoric and historic sites. For a majority of these projects, AZSITE lists no information concerning the projects other than a location, project name, and project number.

<table>
<thead>
<tr>
<th>ID</th>
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<th>Project Number</th>
<th>Project Size</th>
<th>Reference</th>
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<td>1975-1.ASM</td>
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<td>Debowski 1980</td>
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<td>State Land Survey</td>
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Figure 2a: Previous Surveys
Figure 2b: Previous Surveys
Figure 2c: Previous Surveys
Figure 2d: Previous Surveys
Figure 2e: Previous Surveys
Previously Recorded Sites

The previously recorded sites within 1 mile of the project study area, identified during the literature review, consist of numerous artifact scatters, extensive resource processing features such as hearths and roasting pits, and very limited historic remains. Table 4 provides an overview of these sites, and Figures 2a through 2e show the locations.

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<td>Ezzo et al. 2009</td>
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<td>Buttery 1987</td>
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<td>37</td>
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<td>Wasley 1964</td>
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<td>Holmlund and Huckell 1981</td>
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**Previously Recorded but Misplotted Sites**

Site location data from the AZSITE database indicated that site should be found within the project APE. However, intensive survey of the area where it is plotted in AZSITE reveals that there is no site at that location. The site was recorded during a survey for Master’s degree research by a University of Arizona student, P. S. Frick, in 1953. He provided a very general sketch map and noted that he plotted the location of the site on a 15-minute USGS topographic map. His sketch map and site description indicate that the site measures. There is no indication in ASM records that the site was ever revisited.
Although the site card has a notation indicating the site is not plottable, a location for the site was eventually assigned in the 1990s by ASM staff for inclusion in the AZSITE spatial database. AZSITE data indicate a [redacted] and is not consistent with the site card dimensions. The location that the site is plotted on is also not consistent with the original description and sketch map; AZSITE plots the site approximately [redacted] to it.

EPG revisited the site location in November 2009 and could not locate cultural materials that were consistent with the previously recorded site description. There was no source of disturbance, such as extensive erosion or major land use change, that would have removed evidence for the site. Furthermore, surface visibility was very good, so it is also not the case that artifacts were present but obscured by vegetation. To verify that no site is present in this location, crews performed an intensive survey of the site boundaries as recorded in AZSITE, walking east-west transects spaced 5 meters apart. This survey revealed only [redacted] and did not find evidence for an [redacted]. There is no site at this location.

**General Land Office Plat Maps**

Historic GLO plat maps were consulted for the project study area. The GLO plat maps that follow were reviewed to determine whether any potential historic features were within the project study area.

- Township 17 South, Range 14 East dated 1873 and 1947
- Township 18 South, Range 14 East dated 1873, 1903, and 1947
- Township 18 South, Range 15 East dated 1915

The Township 17 South, Range 14 East map dated 1873 does not reveal any historic resources within or near the APE for the proposed project. The 1947 map portrays a variety of dirt roads and at least one historic structure; however, none of these are affected by the proposed project. The Santa Rita Road appears on this map and crosses the APE in Section 34. Santa Rita Road parallels the south side of the APE through its terminus near the historic Town of Helvetia. None of the maps for Township 18 South, Range 14 East revealed any historic resources. The map for Township 18 South, Range 15 East, Sections 22 and 23 contain a series of plots associated with the historic town of Helvetia. These plots are outside the APE for the current project. No additional historic resources were revealed for Township 18 South, Range 15 East.

**SURVEY RESULTS**

The cultural resource survey, conducted in support of the proposed project, identified 41 isolated occurrences (IO), 2 previously recorded sites, and 6 newly recorded sites. Figure 3a through Figure 3e show the areas that were intensively inspected for cultural resources and the results of the survey.
Figure 3d: Survey Results
Previously Recorded Sites in the APE

Site

privately owned and state owned land managed by the University of Arizona. A portion of the site is within the project APE. The site is located in , as depicted on the Sahuarita, AZ 7.5-minute USGS topographic quadrangle (Figure 3b). UTM grid coordinates for the site are . The site extends . (Figure 4).

Previous Research at Site

was originally recorded as an Archaic by Bruce Huckell for the ASM, who identified the site on the . Huckell noted that had been collected from the site surface by a landowner as well as by archaeologist James Holmlund (see Figure 4). Cultural materials noted at the site in 1981 consisted of an . It was noted during this recordation that and were being exposed through erosion of overlying sand deposits. Individual features and artifacts were neither plotted nor described.

Environmental Setting

The site is located where it is the site. The site is at an elevation of 2,840 feet amsl. Archaic period cultural materials are restricted to areas of . Vegetation in the site area consists of cholla (Cylindropuntia imbricata), acacia (Acacia sp.), ephedra (Ephedra trifurca), mesquite, creosote bush, and prickly pear (Opuntia sp.) and barrel cactus.

Surface Observations

Surface survey of the site revealed an . In 17 other cases, FCR features were eroded, deflated, and often dispersed, and feature boundaries in some cases may incorporate what were originally more than one thermal feature. Because individual features were indistinct, feature numbers were not assigned at this site.
Figure 4: Site Map
Because ASM only requires that a site update be prepared to document previously recorded sites, no systematic examination and recording of artifactual material was conducted. Rather, the presence or absence of artifact types was noted to determine whether there were differences in the kinds of artifacts present relative to the earlier recordation. The only notable difference is the absence of San Pedro projectile points during the 2009 recordation. With the exception of a few artifacts and features (Photograph 3), all cultural material observed at the site is

Evidence of Site Age and Function

The artifact assemblage at

Photograph 3: Overview of Site.
National Register Recommendations

The NRHP status of [redacted] was not evaluated during the original recordation. However, the presence of intact features and likelihood of [redacted] the site could contribute significant information for understanding [redacted] and [redacted] of the Tucson Basin region during the San Pedro phase. The site is recommended eligible for listing on the NRHP under Criterion D, and avoidance is recommended. If avoidance is not possible, appropriate procedures for mitigating adverse effects to the site should be developed in a Historic Properties Treatment Plan (HPTP).

Site

[redacted] with features in the project APE on state land managed by the University of Arizona. The site is located in the [redacted] USGS topographic quadrangle (see Figure 3b). UTM grid coordinates for the site are [redacted]. The site extends [redacted] (Figure 5).

Environmental Setting

Site

[redacted]. The southern boundary of the site is [redacted]. edge of the site. Vegetation at the site is dominated by cholla cactus, but numerous other perennial plants are also present and include mesquite, ephedra, burrow weed, saltbush, and mistletoe, as well as prickly pear, barrel, and hedgehog cacti.

Previous Research at Site

The site was originally recorded in 2006 by John Madsen (ASM) and William Gillespie (Coronado National Forest) after road maintenance caused erosion that exposed cultural materials. They described the site as a [redacted]. During that site visit, the inventory of cultural material included [redacted]. The original recorders [redacted]. At the time, the site was described as covering [redacted].

Site Description

Cultural materials consist of a [redacted]. EPG archaeologists visited the site in November 2009 and relocated the area where the original features and artifacts
were recorded. While the artifact assemblage is consistent with the 2006 recordation, with the exception), the original features recorded at the site in 2006 have been severely deflated and dispersed as a result of erosion (Photograph 4). However, intensive survey in the vicinity

Surface Observations

Surface survey of the site revealed a series of ), EPG archaeologists recorded a total (Table 5). (F1 through F4) and correspond to the location of features originally recorded in 2006. Unfortunately, and only

recorded at the site. In some cases, archaeologists noted a feature. However, none of the features has evidence for charcoal or ash.
Table 5: Features Recorded at Site

<table>
<thead>
<tr>
<th>ID</th>
<th>Type</th>
<th>Size (m)</th>
<th>Condition</th>
<th>Associated artifacts</th>
</tr>
</thead>
</table>

have a potential for (F1, F5, F7, F11, and F13). Photograph 5 shows an example of one of.

Because ASM only requires that a site update be prepared to document previously recorded sites, no systematic examination and recording of artifactual material was conducted. Rather, the presence or absence of artifact types was noted to determine whether there were differences in the kinds of artifacts present in the larger, newly defined site boundaries relative to the earlier recordation. No appreciable differences in artifact assemblages between the two recordations were noted.

The
Photograph 5: Feature 1, example of

Photograph 6: Feature 14, example of
Evidence of Site Age and Function

While no charcoal or ash was noted, the presence of some . The association with these features of variety of . The presence of the site suggests use during the late Preclassic Sedentary period. It is likely that the site vicinity was used repeatedly over time for activities.

National Register Recommendations

When it was originally recorded, the NRHP status of was not evaluated. Although there is extensive erosion at the site, a in the southern Tucson basin. EPG recommends that the site be considered eligible for listing on the NRHP under Criterion D, and that
Newly Recorded Sites

Six new sites were recorded during the survey for the Rosemont Utility Corridor Project.

Site  

Cruz floodplain (Photograph 8; Figure 6). The site is located on land managed by the ASLD. The site is located in the [redacted] as depicted on the Sahuarita, AZ 7.5-minute USGS topographic quadrangle (see Figure 3b). UTM grid coordinates for the site are [redacted]. The site extends [redacted] (see Figure 6).
Environmental Setting

The site is at an elevation of 2,785 feet, at the base of the Santa Rita Mountains. It is situated on a hillside. Vegetation in the site area consists predominantly of creosote bush, mesquite in the nearby wash, scattered palo verde trees, and barrel and saguaro cactus. Two tracks of the site.

Surface Observations

Surface survey of the site revealed a... A possible... Photograph 9:...
Table 6: Tools Observed at Site

<table>
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<tr>
<th>Description</th>
<th>Material</th>
<th>Measurements (cm)</th>
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Photograph 10: 

hown in Photograph 10.
To document the site, two observation units were established within the site boundaries and all artifacts in each observation unit were tallied. Each observation unit measured 1 meter x 10 meters. A total of artifacts observed are listed in Table 8.

Table 7: Ceramics Observed at Site

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Table 8: Lithic Debitage Observed at Site

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Represented in the site are a number of well-documented types, including documented, forms. The lithic assemblage observed in the OUs, as well as the presence of cores recorded outside the OUs, includes observed at other sites documented during survey.

Also different from other sites is that this site, when compared to higher elevation sites up the bajada to the .

Two observations at the site support the notion that there exists cultural materials. First, the Photograph 11 shows a fairly excavated at the site. These observations indicate that there are intact cultural deposits at the site.

Evidence of Site Age and Function

(AD 850 to AD 950) and Rincon (AD 950 to AD 1150) phases respectively, indicating use of this site location during the late Colonial and Sedentary periods of the Hohokam Preclassic. In addition to its location just above the Santa Cruz floodplain, the

National Register Recommendations

Although impacted by some looting and a has intact, . Such information could provide significant insights into the prehistoric settlement and subsistence patterns of Hohokam inhabitants of the southern Tucson basin during the late Preclassic period. It is therefore recommended that the site is eligible for listing on the NRHP under Criterion D.
Photograph 11: Site (Figure 3b; Photograph 12). The site is located on state land managed by the University of Arizona. Environmental Setting

The site is in a flat area between G&SRBM, as depicted on the Sahuarita, Arizona USGS 7.5-minute topographic quadrangle map. UTM coordinates are

Environmental Setting

The site is in a flat area between (Figure 7). Soils consist of silty sand with approximately 30-40 percent angular gravel and small pebble inclusions. The Santa Cruz River is approximately The site is at an elevation of 2,923 feet amsl. Dominant vegetation in the area consists of cholla, creosote bush, mesquite, desert hackberry, burrow weed, ephedra, and barrel, prickly pear, and saguaro cactus.
Surface Observations

No features or formal stone tools were found on-site. The site has been impacted by erosion, grazing, and most likely by use of the two-track immediately to the [ . Surface survey of the site revealed a [ All artifacts observed at the site were recorded. The artifacts consist

The bulk of the [ were also identified (Table 9). Unfortunately, the [ were too small to be identified to a particular type of [ that would be temporally diagnostic. The lithics observed consist of a [ (see Table 9).
Evidence of Site Age and Function

The small number of artifacts and low diversity of artifact types suggests a limited range of activities and infrequent use of the site. The artifacts present at the site could not be identified to type. Given the nature of the artifact assemblage and lack of surface features at AZ Site , it is not possible to make an accurate assessment of site age or function.

National Register Recommendations

It is recommended that site is not eligible for listing on the NRHP, because any potential it had to contribute significant information on the prehistoric use of the area has been exhausted by the current recording.

Site Location

(Figure 8; Photograph 13). The site is located on state land managed by the University of Arizona in the , as depicted on the Helvetia, AZ 7.5-minute USGS topographic quadrangle (see Figure 3e). UTM grid coordinates for the site are .

The site extends

Environmental Setting

The site is at an elevation of 3,950 feet, on a slope. Vegetation in the site area consists of mesquite, lovegrass, catclaw, burrow weed, hackberry, agave (Agave sp.) cane cholla, prickly pear, and barrel cactus.
Surface Observations

Surface survey revealed the remains of a [redacted] (Photograph 14). [Redacted] at the site.
Site boundaries were established based on the extent of the artifact scatter present at the site. The assemblage consists of

A total of were recorded in the site. While the suggest a variety of activities occurred at the site, the emphasis of

Evidence of Site Age and Function

Although the observed on the surface were too small to identify to type, the presence of was used during the Classic period. Site function is somewhat ambiguous. The could represent the present, so the ceramic data provide
little insight into the range of activities that may have occurred at the site. The

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<th>Table 10: Observed at Site</th>
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<th>Table 11: Observed at Site</th>
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National Register Recommendations

Site Although the integrity of this feature has been impacted by some erosion, there is a likelihood. If intact deposits are present at the site, they could yield significant information that would be important for understanding areas of the southern Tucson basin during the Classic period. It is therefore recommended that the site be considered eligible for listing on the NRHP under Criterion D.

Site (Figure 9; Photograph 15). The site is located on state land managed by the University of Arizona. Sit G&SRBM, as depicted on the Helvetia, Arizona USGS 7.5-minute topographic quadrangle map. UTM coordinates for the datum are .

Environmental Setting

The site is situated on the (Figure 3e). Soils consist of gravely sands, which are colluvium from the nearby Santa Rita Mountains. The site is at an elevation of 3,885 feet amsl. Dominant vegetation in the site area consists of mesquite, cholla, lovegrass, fairy duster, catclaw, burrow weed, hackberry, agave, and prickly pear and barrel cactus.

Surface Observations

Surface survey of the site revealed a All artifacts observed at the site were recorded (Table 12). The artifacts also present. The , representing all stages of reduction. No tools or features were observed at the site. Based on the observation of surface artifacts, the artifact density for the site is .
Photograph 15: Overview of Site
Evidence of Site Age and Function

The small number of artifacts and low diversity of artifact types suggests a limited range of activities and infrequent use of the site. The artifacts present at the site could not be identified to type. Given the nature of the artifact assemblage and lack of surface features at the site, it is not possible to make an accurate assessment of site age or function.

National Register Recommendations

It is recommended that site AZ EE:1:445(ASM) is not eligible for listing on the NRHP, because any potential it had to contribute significant information on the prehistoric use of the area has been exhausted by the current recording.

Site AZ EE:1:445(ASM)

Site AZ EE:1:445(ASM) is located on state land managed by the University of Arizona (Figure 10; Photograph 16). The site location is depicted on the Corona de Tucson 7.5-minute topographic quadrangle in the

Environmental Setting

The site is positioned on the landscape such that it is

site. The site is at an elevation of 3,835 feet amsl, of Santa Rita Road. A two-track road in the recent past roughly paralleling that road; white PVC irrigation piping is visible in places along the
ditch. Vegetation in the site area consists primarily of mesquite, lovegrass, burrow weed, acacia, cholla, agave, and prickly pear and barrel cactus.

Surface Observations

Surface survey of the site revealed an extensive artifact assemblage consisting of [redacted].

Feature 2 is [redacted].

Feature 3 is the [redacted].
The activities occurred at the site.
Table 13: Evidence of Site Age and Function

The does not contain any temporally diagnostic artifacts; therefore, it is not possible to estimate site age with any degree of reliability. Given the presence of National Register Recommendations samples. It is recommended that this site is eligible for listing on the NRHP under Criterion D for its potential to provide important information on the subsistence and settlement strategies of prehistoric inhabitants of the southern Tucson basin area.

Site on privately owned land (Photograph 20, Figure 11). The site is located on the Helvetia, AZ 7.5-minute topographic quadrangle in the (see Figure 3e). The site
Environmental Setting

The site is located on a [Elevation at the site ranges from 4,310 feet amsl in the southeast to 4,210 feet amsl in the northwest. Site vegetation consists of mesquite, graythorn, lovegrass, burrow weed, catclaw acacia, pencil cholla, chondala, bee bush, wait-a-minute bush, agave, prickly pear, and barrel cactus.]
Surface Observations

Surface survey of the site revealed a large area. Evidence for the presence of an area with architectural patterns.

Photograph 21: Overview of Feature.
There were surprisingly few artifacts associated with the feature, consisting only
we suspect that surface artifacts have been removed by collectors over the years.

Photograph 22: Overview of Feature

Feature

(Photograph 24). There are

(Photograph 26).
occurred across the entire site, but seemed sparse considering the amount of present. In some cases, this can indicate that a site was occupied only briefly, with relatively little time for accumulation of domestic refuse. At this site, however, we suspect that the low artifact density is more likely a result of surface collection. First, the only formal tools noted at the site were located only in the of recent animal burrows at Feature 1 and Feature 4, as described above. Second, artifact density and sherd size appeared to be highest in these same backdirt piles. These observations strongly suggest that artifact density below the ground is higher than that observed on the current site surface. Finally, artifact density was low in the of the site near the , and no decorated pottery or formal tools were observed in this part of the site despite the presence of .

A tally of artifacts for the general site area was begun along the of the site when the site was first identified, but abandoned when the size of the site became clearer. Subsequently, a was recorded in this OU, yielding an . Table 14 and Table 15 list the ceramic and lithic artifacts (respectively) identified in the observation unit and those identified during the initial tally for the general site area (including those observed on features).

Table 14: Ceramics Observed at Site

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Table 15: Lithics Observed at Site

<table>
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<tr>
<th>Item</th>
<th>Core Reduction</th>
<th>Tool Production</th>
<th>Maintenance</th>
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| Observed at the site includes all stages of , including . Although sample size is small, it suggests that multiple activities from core reduction through tool production and maintenance likely occurred at the site. In terms of material selection, .

Evidence of Site Age and Function

although no communal architecture was identified. Ceramics observed at the site are not sufficiently diagnostic to assign a precise temporal phase, but the a hallmark of the Hohokam Classic period that is typically not common in the southern Tucson basin at such a distance from a major perennial stream.

National Register Recommendations

Despite evidence for looting in the southern part of the site, ) has significant subsurface cultural materials that have not been disturbed. Intact deposits extending
as well. Although surface materials at the site have likely been stripped by looters, evidence at the site indicates that the site can yield information important for understanding settlement, subsistence, and social interaction during the Classic period in the southern Tucson basin, and the site is recommended eligible for listing on the NRHP under Criterion D.

Isolated Occurrences Recorded in the APE

In addition to the sites recorded or revisited during survey, a number of historic and prehistoric isolated artifacts and features were also recorded (Table 16). It is important to note that these isolates do not meet ASM criteria for definition as a site. The recording of these items essentially exhausts their research potential, and EPG’s recommendation is that no further consideration of these materials is needed. The locations of diagnostic IOs recorded during survey are shown along with the locations of sites in Figure 3a through Figure 3e.

Historic Isolates

A total of apparently were recorded during the Class III survey. were noted along the . The only diagnostic artifact associated with these features was a , supporting interpretation of these features as relatively modern. Also recorded during survey was a , was also recorded (Photograph 27).
Photograph 27:

Prehistoric Isolates

During the survey, crews recorded the locations of isolated features, ranging from a...
The remaining consisted only of artifacts lacking features, and were not dense or diverse enough to meet ASM criteria to be defined as sites. Most of the prehistoric isolates consisted of . A total of were recorded at , representing either a of . was the second most abundant artifact recorded in prehistoric isolated occurrences, with a total of . included In one case, the prehistoric IO consisted only of a.
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Table 16: [In the APE]
RECOMMENDATIONS

The intensive pedestrian survey in support of the proposed Rosemont Utility Corridor Project identified a total of 41 IOs, 6 newly identified sites, and 2 previously recorded sites. Newly recorded sites are [redacted]. A total of four out of six newly recorded sites are recommended eligible for listing on the NRHP under Criterion D for their potential to provide significant information about prehistoric land use, subsistence strategies, and social interaction employed by Preclassic and Classic period occupants of the southern Tucson basin area during prehistory.

Three sites were identified during the records review as occurring in the APE of the proposed project. These sites include [redacted]. This site was found to be plotted incorrectly in the AZSITE database—this site is not in the project APE. The two other sites were revisited and assessed for their eligibility during the field survey. The eligibility status of these sites was not evaluated during previous recordations. We find that these sites are recommended eligible under Criterion D for their potential to provide information on the subsistence strategies of Archaic and Preclassic period populations in the southern Tucson basin area in prehistory.

Given the nature of the project, it may be possible for the register eligible sites to be avoided. In the event that register eligible sites can be avoided during construction, it is our recommendation that those eligible archaeological sites be barricaded prior to construction and that an archaeological monitor be present for avoidance monitoring when construction occurs within 100 feet of the sites.

Based on the above discussion, if the sites can be avoided by the proposed project we recommend a finding of no adverse effect to the historic properties. In the event that these sites are not able to be avoided by the project, we recommend that the project will have an adverse effect to the historic properties. In order to mitigate the adverse effects the proposed project would have on the historic properties, a mitigation plan would be developed in consultation with the Arizona State Land and the Arizona State Historic Preservation Office.

In the event human remains or funerary objects are discovered during construction of the proposed project on state or private land, all work in the area should cease and the finding be reported to either the director of the ASM or designee in accordance with Arizona Revised Statutes § 41-844 and § 41-865.
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