

**U.S. Department of the Interior  
Bureau of Land Management**

**AGUA CALIENTE SOLAR ENERGY ZONE WITHDRAWAL  
FROM LOCATION AND ENTRY UNDER THE MINING LAWS**

**Environmental Assessment**

**DOI-BLM-AZ-C020-2016-0011-EA**

Yuma County, Arizona

Arizona State Office  
**Yuma Field Office**  
7341 E. 30th Street  
Yuma, Arizona 85365  
Phone: 928-317-3200  
Fax 928-317-3250

**May 2015**

**U.S. Department of the Interior  
Bureau of Land Management**

**Environmental Assessment  
DOI-BLM-AZ-C020-2016-0011-EA**

**May 2015**

**WITHDRAWAL OF 2,560 ACRES OF PUBLIC LANDS IN ARIZONA,  
LOCATED WITHIN THE AGUA CALIENTE SOLAR ENERGY ZONE**

**Title/Project Type:** Withdrawal of 2,560 acres (10.4 km<sup>2</sup>) of public lands in Arizona located within the Agua Caliente Solar Energy Zone (SEZ) from location and entry under the mining laws.

**Legal Descriptions of Proposed Action:** See Appendix A.

Case File No.  
AZA35722

**CONTENTS**

NOTATION ..... vii

1 INTRODUCTION ..... 1

    1.1 History and Background ..... 1

    1.2 Description of the Proposed Action ..... 2

    1.3 Purpose and need for Proposed Action ..... 4

    1.4 Relationship to Land Use and resource management Plans ..... 4

    1.5 Relationship to Other Statutes, Regulations, Policies, and Plans ..... 4

    1.6 Issues Identified ..... 5

2 ALTERNATIVES ..... 7

    2.1 Alternative 1: Land Withdrawal for 20 Years (Proposed Action) ..... 7

    2.2 Alternative 2: No Action ..... 7

    2.3 Comparison of Alternatives ..... 7

3 AFFECTED ENVIRONMENT ..... 9

    3.1 Geology and Mineral Resources ..... 9

    3.2 Socioeconomic Setting ..... 12

        3.2.1 Population and Income ..... 12

        3.2.2 Employment ..... 12

        3.2.3 Environmental Justice: Minority and Low-Income Population ..... 13

    3.3 Visual Resources ..... 13

    3.4 Cultural and Paleontological Resources ..... 13

        3.4.1 Archaeology and Historic Properties ..... 14

        3.4.2 Paleontology ..... 14

        3.4.3 Native American Concerns ..... 14

    3.5 Biological Resources ..... 15

        3.5.1 Vegetation ..... 15

        3.5.2 Wildlife, Birds, Fish, and Special Status Species ..... 15

    3.6 Soils, STREAMS, Floodplains, AND Wetlands ..... 16

    3.7 Groundwater Resources ..... 16

    3.8 Air Quality ..... 17

    3.9 Land Use and Recreation ..... 17

        3.9.1 Recreation and Travel Management ..... 17

        3.9.2 Special Designations, National Trails, and Lands with Wilderness  
Characteristics ..... 18

        3.9.3 Livestock Grazing and Wild Horses and Burros ..... 19

**CONTENTS (Cont.)**

4 ENVIRONMENTAL CONSEQUENCES ..... 21

4.1 Overview and Context of the Proposed 20-Year Withdrawal ..... 21

4.2 Environmental Consequences of the Proposed Action ..... 22

4.2.1 Mineral Resources ..... 22

4.2.2 Socioeconomic Effects..... 22

4.2.3 Visual Resources..... 23

4.2.4 Cultural Resources ..... 23

4.2.4.1 Archaeology and Historic Properties ..... 23

4.2.4.2 Paleontology ..... 23

4.2.4.3 Native American Concerns ..... 24

4.2.5 Biological Resources ..... 24

4.2.5.1 Vegetation..... 24

4.2.5.2 Wildlife, Migratory Birds, Fish, and Special Status Species..... 24

4.2.6 Soils, Streams, Floodplains, and Wetlands..... 25

4.2.7 Groundwater Resources ..... 25

4.2.8 Air Quality ..... 25

4.2.9 Land Use and Recreation ..... 25

4.3 Environmental Consequences of the No Action Alternative ..... 26

4.3.1 Mineral Resources ..... 26

4.3.2 Socioeconomic Effects..... 26

4.3.3 Visual Resources..... 27

4.3.4 Cultural Resources ..... 27

4.3.4.1 Archaeology and Historic Properties ..... 27

4.3.4.2 Paleontology ..... 28

4.3.4.3 Native American Concerns ..... 28

4.3.5 Biological Resources ..... 28

4.3.5.1 Vegetation..... 28

4.3.5.2 Wildlife, Migratory Birds, Fish, and Special Status Species..... 29

4.3.6 Soils, Streams, Floodplains, and Wetlands..... 29

4.3.7 Groundwater Resources ..... 30

4.3.8 Air Quality ..... 30

4.3.9 Land Use and Recreation ..... 30

4.3.9.1 Recreation and Travel Management ..... 30

4.3.9.2 Special Designations, National Trails, and Lands with  
Wilderness Characteristics..... 31

4.5 Cumulative Impacts ..... 31

4.5.1 Past and Present Actions ..... 31

4.5.2 Reasonably Foreseeable Actions ..... 32

4.5.3 Cumulative Impacts of the Proposed Action ..... 32

4.5.4 Cumulative Impacts of No Action ..... 32

**CONTENTS (Cont.)**

5 CONSULTATION AND COORDINATION ..... 33

    5.1 Public Participation and Public Comments..... 33

    5.2 Agencies Consulted ..... 33

6 LIST OF PREPARERS ..... 35

7 REFERENCES ..... 37

APPENDIX A: Legal Description of the Agua Caliente Solar Energy Zone..... A-1

**FIGURES**

1-1 Location of the Agua Caliente SEZ Proposed for Withdrawal..... 3

3-1 Geologic Map of the Agua Caliente SEZ ..... 10

3-2 FEMA Floodplain Map of Agua Caliente SEZ ..... 17

*This page intentionally left blank*

## NOTATION

The following is a list of acronyms and abbreviations and units of measure used in this document.

### GENERAL ACRONYMS AND ABBREVIATIONS

ACEC	Area of Critical Environmental Concern
AGFD	Arizona Game and Fish Department
BLM	Bureau of Land Management
BMP	best management practice
CEQ	Council on Environmental Quality
CFR	<i>Code of Federal Regulations</i>
EA	Environmental Assessment
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FLPMA	Federal Land Policy and Management Act
FR	<i>Federal Register</i>
GHG	greenhouse gas
HA	herd area
HMA	herd management area
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	<i>National Register of Historic Places</i>
OHV	off-highway vehicle
PEIS	programmatic environmental impact statement
PFYC	Potential Fossil Yield Classification
RDEP	Restoration Design Energy Project
RDEP EIS	Restoration Design Energy Project Environmental Impact Statement
REDA	Renewable Energy Development Areas
ROD	Record of Decision
ROW	right-of-way
RMP	Resource Management Plan

RMZ	Recreation Management Zones
SEZ	solar energy zone
SGCN	species of greatest conservation need
SHPO	State Historic Preservation Office
SRMA	special recreation management area
U.S.C.	<i>United States Code</i>
USGS	U.S. Geological Survey
VRM	Visual Resource Management
WHA	Wildlife Habitat Area

**UNITS OF MEASURE**

km	kilometer(s)
km <sup>2</sup>	square kilometer(s)
mi	mile(s)

## 1 INTRODUCTION

This environmental assessment (EA) analyzes the environmental effects of a proposal to withdraw the Agua Caliente Solar Energy Zone (SEZ) identified in the Bureau of Land Management (BLM) Record of Decision (ROD) and Approved Resource Management Plan Amendments for the Restoration Design Energy Project (BLM 2013). The withdrawal<sup>1</sup> will maintain the status of the lands for a period of 20 years by closing them to entry under United States mining laws.

### 1.1 HISTORY AND BACKGROUND

In October 2012, the Solar Programmatic Environmental Impact Statement (PEIS) ROD established the BLM's Solar Energy Program for utility-scale solar energy development on BLM-administered lands in six southwestern states (BLM 2012a). The Solar PEIS ROD established the concept of SEZs as priority areas for utility-scale solar energy development. Seventeen SEZs were established and were withdrawn from location and entry under the United States mining laws in July 2013 (78 FR 40499).

On January 13, 2010, the BLM Arizona State Office published a Notice of Intent to prepare an environmental impact statement (EIS) to identify BLM-administered land that may be suitable for the development of renewable energy and to establish appropriate design criteria for such projects. The BLM published a Draft EIS for the Restoration Design Energy Project (RDEP EIS) on February 7, 2012 (BLM 2012b). The Final RDEP EIS was published in October 2012 (BLM 2012c), and the Arizona State Director signed the ROD for the EIS on January 18, 2013 (BLM 2013).

The Draft RDEP EIS identified up to 20,600 acres (84 km<sup>2</sup>) for the proposed Agua Caliente SEZ in Yuma County, Arizona. The BLM revised the proposed SEZ boundaries in the Final EIS to exclude the major washes, to maintain an area for potential wildlife migration, and

---

<sup>1</sup> The withdrawal process is a means by which the Secretary of the Interior may restrict uses of public land to temporarily protect them from development or other uses that could adversely impact resource or historical values. The Secretary's authority for withdrawing land is derived from Section 204 of the Federal Land Policy and Management Act of 1976 (*United States Code*, Title 43, Section 1714 [43 U.S.C. 1714]). Under this authority the Secretary, upon receipt of an application for a withdrawal, must publish a notice in the *Federal Register* that an application has been submitted for filing and the extent to which the land is to be closed (segregated) while the application is being considered. Once a notice has been published, the lands identified in the application are closed to the operation of various laws allowing disposal of the land out of Federal ownership (e.g., General Mining Law of 1872, public sale, and other land disposal laws) or leasing of public land under assorted laws relating to mineral or other land uses, to the extent specified in the notice. The segregative effect of the withdrawal application terminates upon (a) rejection of the application by the Secretary, (b) the withdrawal of the lands by the Secretary, or (c) the expiration of 2 years from the date of the notice. If the Secretary decides to make a withdrawal of the lands after evaluating required studies and views of the public and other entities, the Secretary may close the lands as specified in an order published in the *Federal Register* for a stated period of time, depending upon the purpose of the withdrawal.

to avoid archaeological sites and lands with wilderness characteristics. The RDEP ROD established the Agua Caliente SEZ with an approximate area of 2,560 acres (10.4 km<sup>2</sup>).<sup>2</sup>

On September 22, 2014, the BLM published a “Notice of Proposed Withdrawal and Opportunity for Public Meeting, Agua Caliente Solar Energy Zone, Arizona” (*Federal Register*, Vol. 79, No. 183, page 56603 [79 FR 56603]) for the withdrawal of approximately 2,560 acres (10.4 km<sup>2</sup>) of public lands from settlement, sale, location, or entry under the public land laws, including the mining laws, to protect and preserve the Agua Caliente SEZ for a 20-year period. The lands will remain open to leasing under the mineral and geothermal leasing laws, and disposal under the Materials Act of 1947. The Notice of Proposed Withdrawal initiated a two-year segregation of the public lands that will expire on September 21, 2016.

## 1.2 DESCRIPTION OF THE PROPOSED ACTION

The proposed action is to withdraw for a 20-year period approximately 2,560 acres (10.4 km<sup>2</sup>) of public land within the Agua Caliente SEZ located in Yuma County, Arizona. The legal descriptions of these lands are included in Appendix A, and the general location of the SEZ is shown in Figure 1-1. If approved by the Secretary of the Interior (the Secretary), the public lands would be withdrawn from location or entry under the mining laws. The lands will remain open to the discretionary authority of the public land laws, including mineral leasing, geothermal leasing, and mineral material laws. The proposed withdrawal would preclude surface entry and the location of new mining claims within the withdrawal area, as well as preserve the status quo subject to valid existing rights. Within the withdrawal area, the proposed withdrawal would not prevent application of the laws relating to authorizing linear and renewable energy rights-of-way (ROWs), mineral leasing for oil and gas or other leasable minerals, geothermal leasing, or disposal under the public land disposal laws. Mining claims filed prior to the withdrawal of the identified lands would take precedence over other future uses. The presence of mining claims could entail significant surface development, such as the establishment of open pit mining, construction of roads for hauling materials, extraction of ores from tunnels or adits, or construction of facilities to process the material being mined. These activities would preclude use of some or all of the SEZ for solar energy facilities.

This EA evaluates the environmental and socioeconomic impacts of the proposed land withdrawal, as well as the impacts of the no action alternative, which would allow the current temporary segregation to expire. For purposes of this assessment, it is assumed that the primary difference between the proposed action and no action is the potential for the location of new mining claims (under the General Mining Law of 1872) under the no action alternative. Therefore, the analyses in this EA focus on the comparison of (1) the potential impacts of excluding the location and development of new mining claims within the SEZ over the proposed 20-year withdrawal period under the proposed action to (2) the potential impacts of location and development of new mining claims within the SEZ under the no action alternative. These

---

<sup>2</sup> The area listed in the RDEP ROD is 2,550 acres; the proposed withdrawal lists the area as 2,560 acres to facilitate aliquot part legal description.

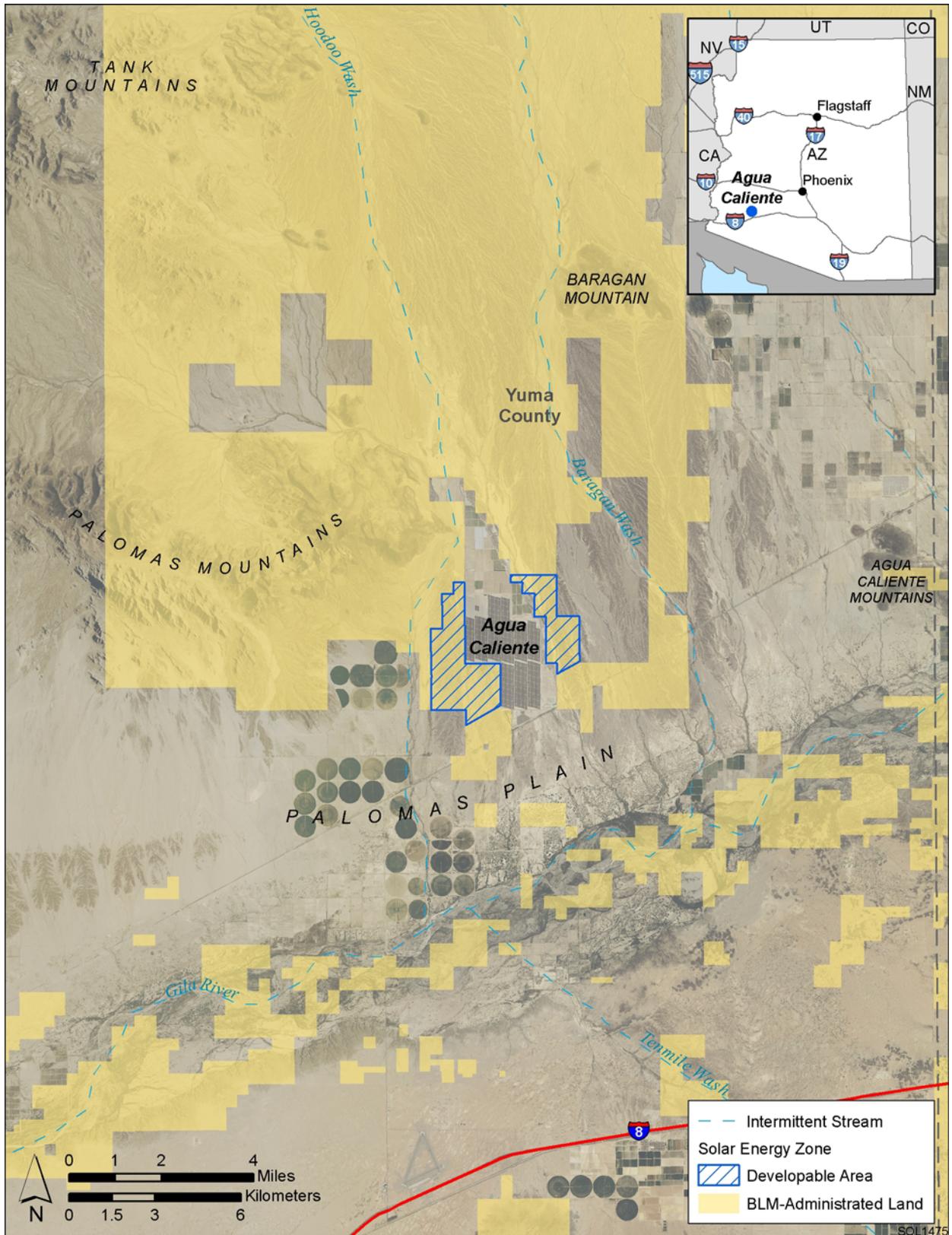


FIGURE 1-1 Location of the Agua Caliente SEZ Proposed for Withdrawal

analyses are qualitative in nature and incorporate, by reference, information from the Final RDEP EIS.

### 1.3 PURPOSE AND NEED FOR PROPOSED ACTION

The purpose of the proposed withdrawal is to protect and preserve the Agua Caliente SEZ for solar energy development for a 20-year period as part of the BLM's Solar Energy Program (as defined in the Solar PEIS and the RDEP EIS). The withdrawal is needed to preserve the status quo within the SEZ by preventing the establishment of new mining claims. The use of a ROW, interagency or cooperative agreement, or surface management by the BLM under Title 43, Part 3715, of the *Code of Federal Regulations* (CFR) (43 CFR Part 3715) or 43 CFR Part 3809 regulations would not adequately constrain nondiscretionary uses, which could result in loss of adequate protection and preservation of the subject lands for future solar energy development (77 FR 74690). Because the area has already been identified as an SEZ, there are no suitable alternative sites for the proposed withdrawal.

### 1.4 RELATIONSHIP TO LAND USE AND RESOURCE MANAGEMENT PLANS

The ROD for the Final RDEP EIS amends land use plans to identify Renewable Energy Development Areas (REDAs) throughout Arizona and the Agua Caliente SEZ, and appropriate design features and best management practices (BMPs) to administer the development of renewable energy resources on BLM-administered public lands in Arizona. The decision incorporates land use allocations and programmatic and SEZ-specific design features into eight Arizona BLM land use plans. The RDEP ROD amends the Yuma Resource Management Plan (RMP) to identify the Agua Caliente SEZ and to establish renewable energy goals and SEZ-specific design features. However, the Yuma RMP amendment did not segregate or withdraw the lands within the SEZ from entry under the mining laws.

### 1.5 RELATIONSHIP TO OTHER STATUTES, REGULATIONS, POLICIES, AND PLANS

The BLM Arizona State Office is preparing this EA to satisfy the requirements for processing a land withdrawal application. The principal statutes relevant to this EA are described below.

**The General Mining Law of 1872** (*United States Code, Title 30, Section 21 et seq. [30 U.S.C. 21 et seq.]*), as amended, is the principal law governing development of nonfuel and non-fertilizer minerals within the Federal public domain. This law allows the location, use, and patenting of mining claims on public domain lands, unless the land is closed to mineral entry.

**The National Environmental Policy Act (NEPA) of 1969, as amended**, requires that impacts from any Federal proposed action be analyzed and considered when making decisions.

The Council on Environmental Quality (CEQ) regulations for implementing NEPA and the BLM's implementing regulations address EA preparation.

**The Federal Land Policy and Management Act of 1976 (FLPMA), as amended,** Section 204 (43 U.S.C. 1714), authorizes the Secretary, acting on his or her discretion, to withdraw public lands from settlement, sale, location, or entry under the public land laws, including the mining laws, subject to valid existing rights. The BLM's implementing regulations are set forth in 43 CFR Part 2300.

**The National Historic Preservation Act (NHPA) (16 U.S.C. 470), as amended,** and its regulations at 36 CFR Part 800, direct federal agencies to consider the effects of proposed actions on properties eligible for or included in the *National Register of Historic Places* (NRHP).

## 1.6 ISSUES IDENTIFIED

A "Notice of Proposed Withdrawal and Opportunity for Public Meeting, Agua Caliente Solar Energy Zone, Arizona" was published in the *Federal Register* on September 22, 2014 (79 FR 56603), and the comment period was extended through January 31, 2015. No comments were received during the comment period and no issues were identified.

*This page intentionally left blank*

## 2 ALTERNATIVES

### 2.1 ALTERNATIVE 1: LAND WITHDRAWAL FOR 20 YEARS (PROPOSED ACTION)

The proposed action proposes the withdrawal for 20 years of approximately 2,560 acres (10.4 km<sup>2</sup>) of public lands included within the Agua Caliente SEZ (established in the RDEP Final EIS and ROD [BLM 2012c, 2013]) from location or entry under the mining laws, but not the public land laws or mineral and geothermal leasing or material sale laws. This alternative would preclude surface entry and new mining claims for locatable minerals within the withdrawal area and preserve the status quo subject to valid existing rights to protect and preserve the Agua Caliente SEZ for future solar energy development. The presence of mining claims could require major surface development, such as the establishment of open pit mining, construction of roads for hauling materials, extraction of ores from tunnels or adits, or construction of facilities to process the material being mined. These activities would preclude use of some or all of the SEZ for solar energy facilities.

### 2.2 ALTERNATIVE 2: NO ACTION

Under the no action alternative, 2,560 acres (10.4 km<sup>2</sup>) of public lands included in the notice of proposed withdrawal (79 FR 56603) would not be withdrawn. The lands would become open to surface entry and to the application of the mining laws when the temporary 2-year segregation expires on September 21, 2016. Under this alternative, the public lands would continue to be managed pursuant to current BLM RMPs, laws, regulations, and policy.

### 2.3 COMPARISON OF ALTERNATIVES

The short-term impacts of the alternatives are expected to be small because of the low level of mineral production currently ongoing in the SEZ (Patton 2015). The area does not have high potential for locatable mineral occurrence and there are no active mining claims or active mines in the SEZ (see Section 3.1 for additional information). There is a moderate potential for salable minerals (e.g., sand and gravel); however, the known occurrences and prospects are abundant and widespread in the area. In the short term, environmental effects could be greater under the no action alternative where new mining location activities could commence as early as September 21, 2016. Surface disturbance caused by mineral exploration and development activities would result in impacts on soils, water, air, and biological resources. However, the likelihood of new mining activities in the SEZ, even under the no action alternative, is considered to be low.

If mining were to occur in the SEZ under the no action alternative, there could also be beneficial effects on employment, the economy, and on mineral production. However, under the no action alternative, there is also the potential for the filing of what are called “nuisance” mining claims. These are claims that are filed generally on the premise that an entity who later wishes to use the surface for renewable energy or some other form of development could be

hindered by the existence of the claims. Such claims can be costly and time consuming to resolve and those wishing to develop the surface for energy production or other uses may elect to compensate the mining claimant to expedite development objectives. Nuisance mining claims would adversely affect future solar energy development but would not provide the beneficial effects that would result from mineral development. The proposed action would provide protection to environmental resources from mineral development for up to 20 years, but would preclude potential benefits to employment, the economy, and mineral production that could result from the development associated with new mining claims that could occur under the no action alternative.

### 3 AFFECTED ENVIRONMENT

This section provides a baseline of the current environment against which potential consequences of the proposed action alternative and no action alternative are identified and evaluated. The Draft and Final RDEP EIS (BLM 2012b,c) was the main source of the information included, supplemented by the Mineral Report for the SEZ (Argonne 2014) and data from the BLM's Legacy Rehost System (BLM 2014). Data from the RDEP EIS were for the larger area of the Agua Caliente SEZ as originally proposed, and therefore some impacts summarized here may no longer be applicable to the smaller area of the SEZ.

#### 3.1 GEOLOGY AND MINERAL RESOURCES

The SEZ is located within the Palomas Plain, a northwest-trending, broad, alluvial (extensional) basin within the Basin and Range physiographic province in southwestern Arizona. The plain is bounded on the southwest by the Palomas Mountains (part of the Kofa-Tank Mountains complex). The Agua Caliente Mountains are about 7 miles (11 km) to the east of the SEZ; the Aztec Hills are about 11.5 miles (18.5 km) to the south. The SEZ lies between two ephemeral washes, the Hoodoo Wash to the west and the Baragan Wash to the east, which discharge to the Gila River a few miles to the south (Figure 3-1). Several small washes intersect the SEZ.

Precambrian metamorphic rocks (schist and gneiss – Xm) and granite (Xg) are exposed in portions of the Tank and Palomas Mountains and in the Aztec Hills to the south (YXg), as shown in Figure 3-1. These rocks are highly faulted and fractured, and they are intruded by quartz-dominated pegmatite dikes and veins. Most of the mineralization in the Palomas Mountains (chrysocolla, malachite, hematite, and quartz) is located along the northern margin of Tertiary granite and foliated granitic rocks (Tg) (Skotnicki and Ferguson 1994). Tertiary volcanic rocks (Tv) comprise the Agua Caliente Mountains and occur throughout the Tank and Palomas Mountains (Jones 1979).

Basin fill beneath the Palomas Plain is estimated to be about 8,850 ft (2,700 m) deep. The uppermost sediments consist of unconsolidated sand, gravel, silt, and clay that overlie an older, more indurated sequence of arkosic sediments and fanglomerates. These older sediments are about 4,600 ft (1,400 m) thick and sit unconformably atop Tertiary sediments, volcanics, and volcanic detritus from pre-Tertiary bedrock. The basin itself is underlain by a basement complex of granite and undifferentiated metamorphic rocks (Jones 1979; Armstrong and Yost 1958; BLM 2012b).

*Locatable Minerals:* Locatable minerals include metallic minerals (gold, silver, copper, mercury, aluminum, antimony, lithium, molybdenum, tungsten, uranium, vanadium, and rare earths) and nonmetallic minerals (barite, calcite, specialty clays, bentonite, diatomite, feldspar, some gemstones (e.g., opals and diamonds), gypsum, chemical-grade limestone, perlite, chemical-grade silica sand, specific types of stone, talc, zeolites, and specific and uncommon types of dolomite). There are no known locatable mineral deposits or prospects and no mining

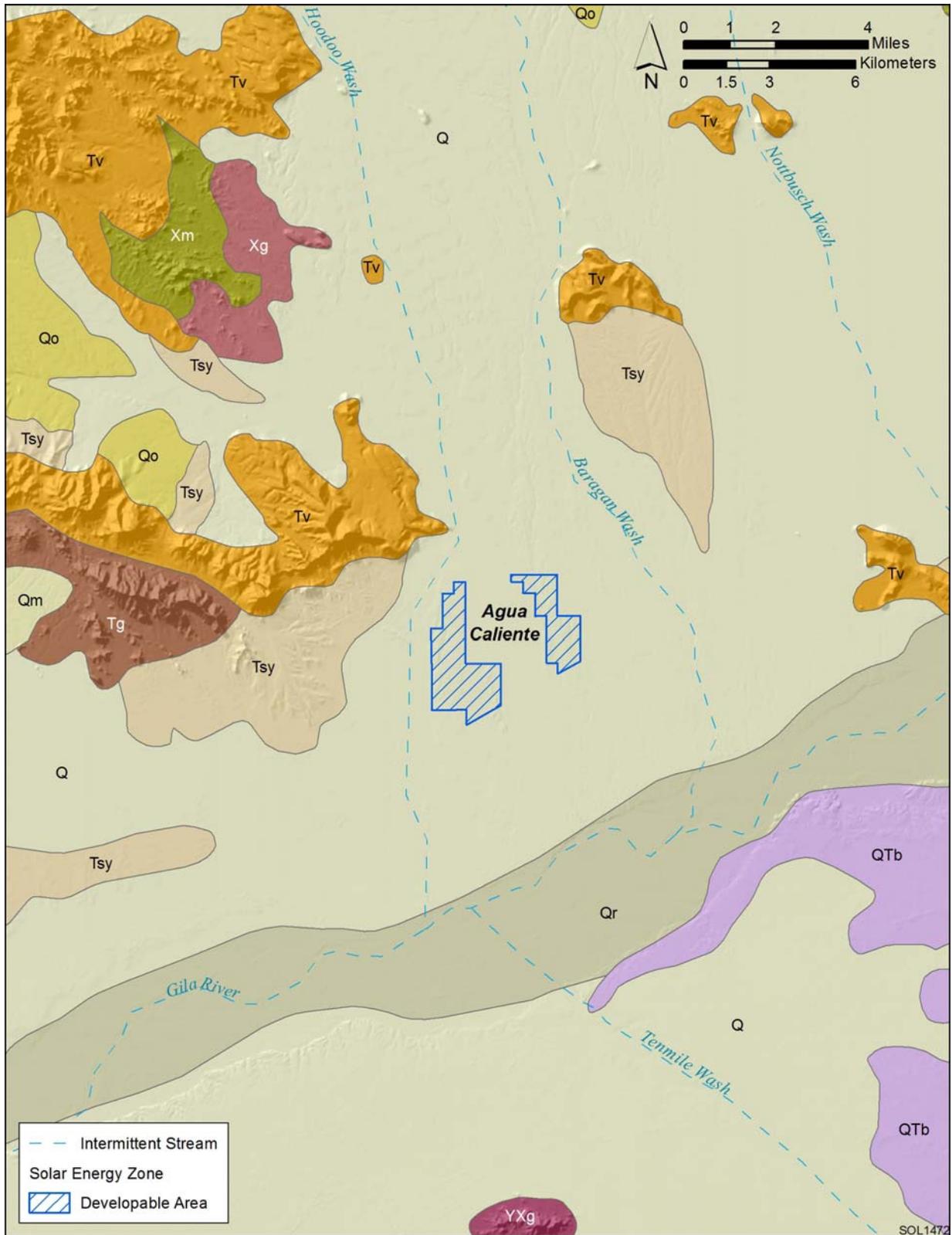
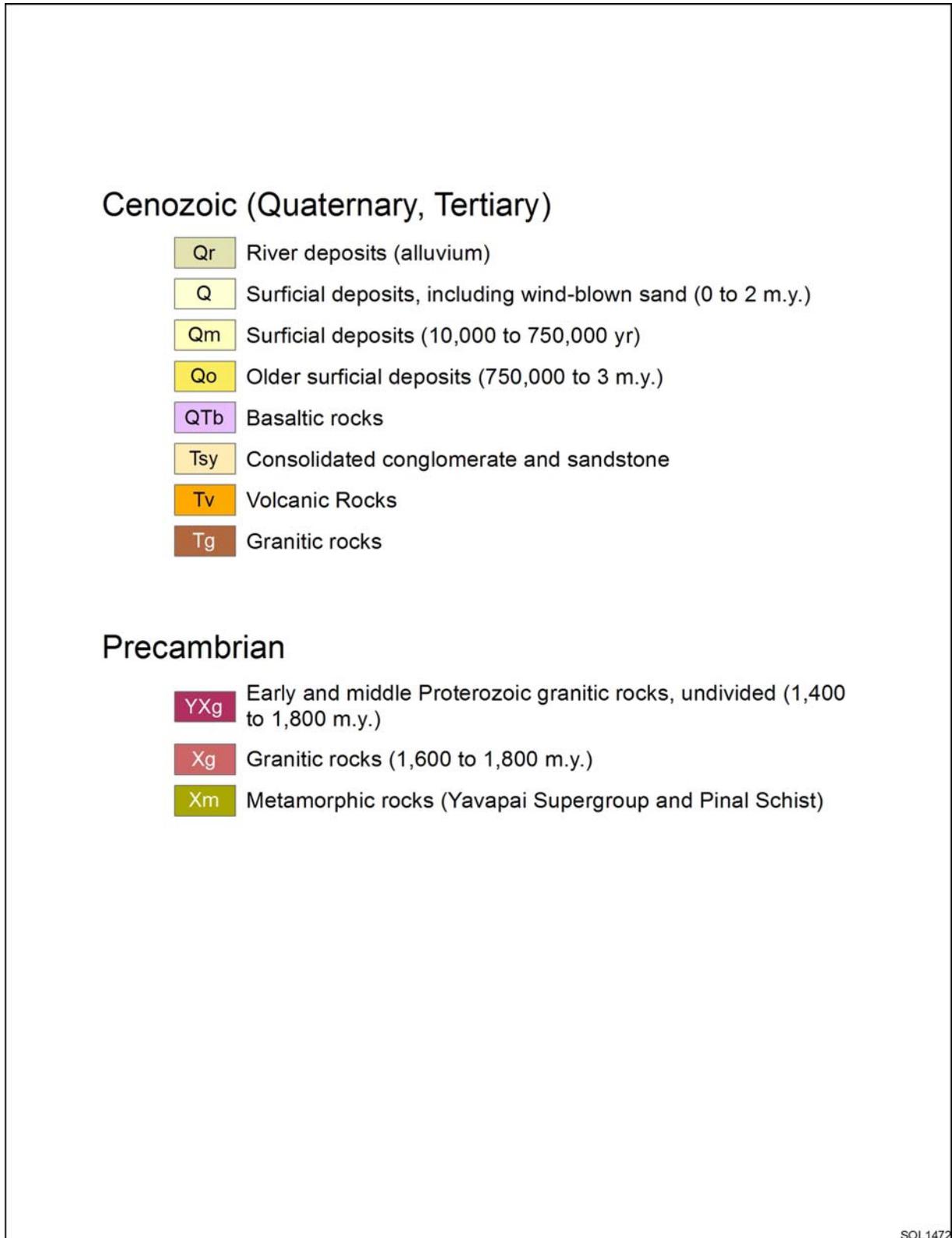


FIGURE 3-1 Geologic Map of the Agua Caliente SEZ



**FIGURE 3-1 (Cont.)**

claims or active mines identified within the Agua Caliente SEZ proposed land withdrawal area (Argonne 2014; BLM 2014). The nearest occurrence of locatable minerals is of copper ore (chrysocolla and malachite), historically produced from the Engles-Adams Mine in the south-central part of the Palomas Mountains, about 5 miles (8 km) to the west. The occurrence is associated with quartz-feldspar porphyry dikes in Tertiary granitic rocks (Tg) and is not considered economically significant (USGS 2014; Skotnicki and Ferguson 1994).

*Saleable Minerals:* The SEZ is underlain by alluvial and basin-fill sediments and is, therefore, a high potential area for sand and gravel deposits. However, based on the absence of free use permits or mineral materials contracts within the SEZ, the regional demand for these materials is assumed to be low (Argonne 2014; BLM 2014).

*Leasable Minerals:* The SEZ is located in an area with low potential for oil and gas; there are no proven oil or gas reserves. A total of eight leases covered most of the SEZ at one time; however, these leases were closed in 1980, 1986, and 1997 (Argonne 2014; BLM 2014). The SEZ is located within a BLM-identified geothermal potential area, but no moderate- or high-temperature geothermal resources exist, nor are there any active or historical geothermal leases (or nominated lands for geothermal sale) within the SEZ. The site remains open for discretionary leasing for oil and gas and geothermal resources under either alternative.

## **3.2 SOCIOECONOMIC SETTING**

### **3.2.1 Population and Income**

The Agua Caliente SEZ is located in eastern Yuma County, Arizona, a sparsely populated area with limited economic development. The surrounding area is predominately agricultural and undeveloped desert. In 2010, the population in Yuma County was 195,751, a 22.3 percent increase from the population in 2000. The population growth in the United States over this period was 9.6 percent, much lower than the increase in Yuma County. Population in Yuma County is expected to continue to increase at similar growth rates, with population expected to exceed 377,000 by 2050.

In 2009, estimated median household income in Yuma County was \$38,854, below the median household income for both the United States and state of Arizona. The per capita income in Yuma County was \$18,244 for 2009, also below levels for both the U.S. and the state. In 2009, 17 percent of families and 20 percent of all people in Yuma County were below the poverty level, higher than the U.S. and the state by at least 5 percent.

### **3.2.2 Employment**

The labor force (number of workers available for work) increased 41 percent between 2001 and 2010. The unemployment rate for Yuma County was highest in 2010, compared to the previous 10 years, reaching 25 percent. The high unemployment rate indicates that employment

has not kept pace with population growth rate. In 2010, the office and administrative support sector provided the largest number of jobs (14.6 percent), followed by farming, fishing, and forestry (13.3 percent); sales (9.6 percent); and food preparation and serving related jobs (7.9 percent). Mining-associated employment is not significant in Yuma County; it accounted for only 47 jobs in the county in 2011 (U.S. Census Bureau 2011). The military is a significant source of employment in the county; for every 1,000 civilian jobs, there were 66 military jobs in 2010. The U.S. Army Yuma Proving Ground, a military testing range, is a major employer in Yuma County. It provides economic stability in the area by employing military, civilian and contract employees.

### **3.2.3 Environmental Justice: Minority and Low-Income Population**

The county and census tracts surrounding the SEZ were studied for low-income and minority populations as required by CEQ guidelines. Yuma County, two census tracts in Yuma County, and one tract in Maricopa County have minority populations over 50 percent, primarily comprised of Hispanic or Latino persons. The population therefore meets the CEQ definition of a minority population.

As discussed in Section 3.2.1, 17 percent of families and 20 percent of all people in Yuma County were below the poverty level in 2009. Five-year estimates for 2006–2010 indicate that 31 percent of families in one census tract within a 25-mile (40-km) radius of the SEZ were below the poverty level. Although higher than the county, state, and national poverty levels, the population does not meet the CEQ definition of a low-income population.

## **3.3 VISUAL RESOURCES**

The SEZ has been inventoried and will be managed as Visual Resource Management (VRM) Class IV (BLM 2013). The SEZ has a scenic quality rating of B, a sensitivity rating of medium, and is located in the foreground/midground distance zone. VRM Class IV allows for management activities that require major modifications to the existing character of the landscape. The level of change to the characteristic landscape can be high, but mitigation would still be conducted for a solar energy project regardless of VRM class.

## **3.4 CULTURAL AND PALEONTOLOGICAL RESOURCES**

Traditional cultural properties and other areas of concern to various cultural groups, including Native Americans, can include a wide range of tangible and intangible resources (e.g., archaeological sites, funerary objects, places of religious ceremony, medicinal plants, and sacred landscapes). Types of valued traditional resources may include, but are not limited to, archaeological sites, burials, religious sites, traditional harvest areas, trails, certain prominent geological features that may have spiritual significance (i.e., sacred landscapes), and viewsheds of sacred locations (including all of the above).

### 3.4.1 Archaeology and Historic Properties

A pedestrian sample survey (Class II inventory) of the SEZ conducted in May 2012 covered 1,120 acres (4.5 km<sup>2</sup>) and resulted in the discovery of segments of prehistoric trails, habitation sites, and artifact scatters. The habitation sites included remnants of hearth features, pottery, flakes, and projectile points and were recommended as eligible for the *National Register of Historic Places* (NRHP). Fourteen sites were found within the area surveyed in the central and northern portions of the SEZ, some of which extend beyond the unit boundaries.

A 100 percent pedestrian (Class III) inventory of the entire SEZ was conducted from November 2014 to January 2015. The survey covered 2,560 acres (10.4 km<sup>2</sup>) within the SEZ and several hundred acres outside of the SEZ. Thirty-six new sites were recorded and six previously recorded sites were noted. Of these 42 sites, 14 were recommended as eligible for listing in the NRHP.

### 3.4.2 Paleontology

The SEZ is located within the Palomas Plain, bounded by the Palomas Mountains to the west and Baragan Mountain to the north. Both mountains are mapped as Tertiary volcanic rocks. The valley-fill deposits of the Palomas Plain include Quaternary surficial deposits and Tertiary alluvial-fan deposits. The Tertiary volcanic rocks have a very low potential (Potential Fossil Yield Classification [PFYC] of 1) for containing paleontological resources, the Quaternary surficial deposits have a low potential (PFYC Class 2) for containing paleontological resources, and the Tertiary alluvial-fan deposits have an unknown potential (PFYC Class 3) for containing paleontological resources.

No known fossil localities occur within the SEZ or within 1 mile (1.6 km) of the analysis area. However, fossil rodent, camel, and other land mammals from the Miocene to the Quaternary ages have been collected to the west of the SEZ along the Gila River. In addition, fossilized packrat middens, which scientists have used to reconstruct ancient environments, may occur in caves or other sheltered areas in either Tertiary or Quaternary geological units.

### 3.4.3 Native American Concerns

The SEZ is located in the Lower Gila cultural region, within or near the traditional territories of the Maricopa, Quechan, Cocopah, Western Yavapai, and Tohono O'odham. Near the SEZ, there were settlements on the south side of the Gila River at Agua Caliente and Palomas, about 10 miles (16 km) west of the Agua Caliente SEZ. Remnants and traces of the people's activities and movements, including trails, could be present as archaeological sites in the SEZ.

### 3.5 BIOLOGICAL RESOURCES

#### 3.5.1 Vegetation

The area within and surrounding the SEZ is within the Sonoran Basin and Range ecoregion and is dominated by Sonora-Mojave Creosotebush-White Bursage Desert Scrub. Species observed within the SEZ boundary include creosotebush (*Larrea tridentata*), white bursage (*Ambrosia dumosa*), saguaro (*Carnegiea gigantea*), ocotillo (*Fouquieria splendens*), ironwood (*Olneya tesota*), ratany (*Krameria* spp.), brittlebush (*Encelia farinosa*), pencil cholla (*Opuntia arbuscula*), palo verde, fishhook barrel cactus (*Ferocactus wislizenii*), desert mistletoe (*Phoradendron macrophyllum*), and silver cholla (*Opuntia imbricata* var. *argentea*).

Riparian vegetation is most abundant in two washes outside of the SEZ (Hoodoo Wash running north–south about 0.5 miles (0.8 km) from the western SEZ boundary) and Baragan Wash running north–south about 2 miles (3 km) from the eastern SEZ boundary). In addition, numerous small washes and braided channels occur throughout the SEZ.

Although site-specific noxious weed and invasive species surveys were not conducted within the SEZ, the following species were observed during a site visit associated with the RDEP EIS: Russian thistle (*Salsola kali*), an unknown thistle, and one tamarisk (*Tamarix* sp.) shrub. No state-listed noxious weeds were observed, but the following species have the potential to occur on the SEZ since they have been recorded in Yuma County: field bindweed (*Convolvulus arvensis*), puncturevine (*Tribulus terrestris*), and red starthistle (*Centaurea calcitrapa*).

#### 3.5.2 Wildlife, Birds, Fish, and Special Status Species

The SEZ is located adjacent to the Palomas Plain Wildlife Habitat Area (WHA), which is the largest unfragmented habitat in southwest Arizona. This WHA provides habitat to many plants and wildlife of the Sonoran Desert (including special status species) and serves as a significant hunting area. Several big game and migratory bird species are known to occur in the area within and/or surrounding the SEZ, including the following: mule deer, mountain lions, turkey vulture, northern harrier, Gambel's quail, and white-winged dove. Thrashers, sparrows, and owls have been observed, but specific species were not identified.

The SEZ may provide potential habitat for several special status species including western burrowing owl, ferruginous pygmy-owl, golden eagle, Le Conte's thrasher, California leaf-nosed bat, Pale Townsend's big-eared bat, and Yuman desert fringe-toed lizard, and two BLM sensitive plant species (blue sand lily and Schott wire lettuce). The Palomas Plain WHA could serve as a potential reintroduction area for the endangered Sonoran pronghorn. Pronghorn have not been recorded on the SEZ, but given their large territory size and mobility, could use the SEZ if the population expands.

### 3.6 SOILS, STREAMS, FLOODPLAINS, AND WETLANDS

The soils in the area within or surrounding the SEZ consist of a gravelly loam found in an alluvial sediment fan. Soils are dominated by Ligurta-Cristobal Complex, 2 to 6 percent slopes; Carrizo very gravelly sand; and Harqua-Tremant Complex with pockets of Cherioni-Rock outcrop complex, 25 to 70 percent slope. Wind erosion susceptibility for the dominant soil types is low to moderate. Some of the SEZ is located on the Cherioni-Rock outcrop complex, which has a moderate susceptibility to water erosion.

The SEZ contains a number of braided series of washes and channels created by ephemeral streams. Surface water flows south through the washes and channels in the SEZ, eventually discharging to the Gila River. National Wetland Inventory maps do not identify mapped wetlands in the area near or within the SEZ. Drainage patterns observed on aerial photographs and U.S. Geological Survey (USGS) topographic maps indicate the area contains ephemeral water features, including approximately 180 acres (0.73 km<sup>2</sup>) identified by the Federal Emergency Management Agency (FEMA) as 100 year floodplain areas, as shown in Figure 3-2.<sup>3</sup> These delineated floodplains have been recommended as non-development areas within the SEZ and so will likely not be made available for competitive leasing in the future (the designation as non-development area would be finalized through project-specific environmental evaluation).

### 3.7 GROUNDWATER RESOURCES

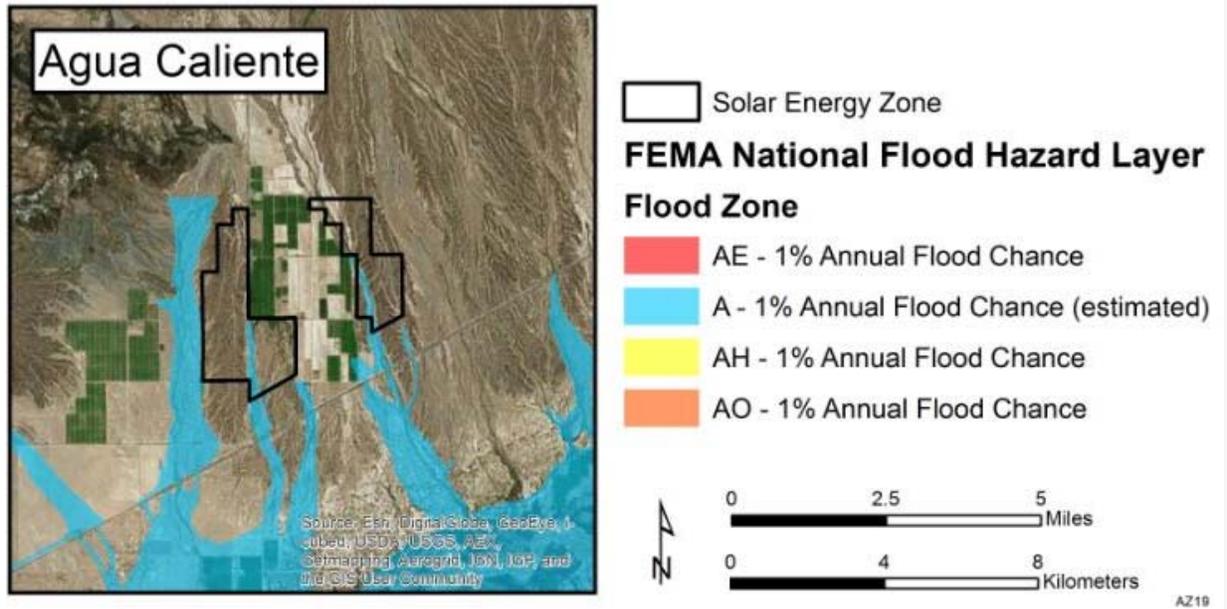
The SEZ is located in the Lower Colorado Planning Area in the Lower Gila groundwater basin. Groundwater flow from the SEZ is to the south toward the Gila River and occurs in both recent stream alluvium and basin fill. Groundwater is unconfined and groundwater recharge is primarily from infiltration of runoff in washes and the Gila River floodplain in the western part of the basin. Underflow from the Painted Rock Dam on the eastern basin boundary, as well as releases from the dam during floods, also contributes to groundwater recharge.

The absence of SEZ-specific groundwater data prevents specific analysis; however, several measured wells in the western part of the basin show relatively stable water level conditions from 1990 to 2005.

Groundwater quality varies throughout the Lower Gila groundwater basin. Elevated fluoride concentrations have been measured in a number of wells in the eastern part of the basin. In the western part of the basin, groundwater quality in the Gila River floodplain is unsuitable for most uses due to elevated total dissolved solids, fluoride, and arsenic.

---

<sup>3</sup> These areas were defined as “areas subject to inundation by the 1-percent-annual-chance flood event generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are available.”



**FIGURE 3-2 FEMA Floodplain Map of Agua Caliente SEZ**

State permits and other approvals would be required before developers would be permitted to pump groundwater or surface water for solar energy facilities or mining development. Any groundwater wells or surface water diversions would be subject to review and approval by the Arizona Department of Water Resources (ADWR).

### 3.8 AIR QUALITY

The SEZ is located more than 62 miles (100 km) from the nearest Class I area and is in attainment for all national ambient air quality standards (NAAQS). Current activities on the SEZ generate low levels of greenhouse gas (GHG) emissions and are primarily associated with vehicles and farm equipment.

### 3.9 LAND USE AND RECREATION

#### 3.9.1 Recreation and Travel Management

The SEZ is located within the Yuma Field Office. The Yuma East Undeveloped Special Recreation Management Area (SRMA) is located immediately north and west of the SEZ. The SRMA is managed to enhance the tourism market and encourage recreational use, primarily hunting. The Dispersed Use Recreation Management Zone (RMZ) within the SRMA and closest to the SEZ is managed to provide undeveloped and wildlife-based motorized and non-motorized recreation opportunities. Motorized travel is managed through the Yuma Field Office RMP as

“limited to designated routes.” Many routes cross the SEZ and are heavily used during hunting season. Recreational uses other than hunting include camping, off-highway vehicle (OHV) riding, hiking, and wildlife and wildflower viewing. The nearest major road to the SEZ is Interstate 8, about 12 miles (19 km) south of the SEZ. A Yuma County road passes just to the south of the SEZ and provides access to the site.

### **3.9.2 Special Designations, National Trails, and Lands with Wilderness Characteristics**

There are no national scenic, historic, or recreation trails, or special designation areas located within the SEZ; however, the following areas are located within 25 miles (40 km) of the SEZ (Argonne 2014):

- Juan Bautista de Anza National Historic Trail (5 miles [8 km] south of the SEZ),
- Sears Point Area of Critical Environmental Concern (ACEC) (4 to 15 miles [6 to 24 km] southeast of the SEZ),
- Eagletail Mountains Wilderness Area (WA) (20 miles [32 km] from the SEZ),
- Kofa WA (14 miles [22 km] south of the SEZ),
- Kofa National Wildlife Refuge (NWR) (13.6 miles [21.9 km] northwest of the SEZ),
- Gila River Undeveloped Special Recreation Management Area (SRMA) (1.7 miles [2.7 km] south of the SEZ),
- Painted Rock SRMA (22 miles [36 km] east of the SEZ),
- Yuma East Undeveloped SRMA (1.1 miles [1.8 km] northwest of the SEZ),
- Gila River Terraces & Lower Gila Historic Trails Area of Environmental Concern (ACEC) (13.3 miles [21.4 km] east of the SEZ), and
- Sears Point ACEC (3.9 miles [6.3 km] southeast of the SEZ).

Solar energy facilities located in the SEZ could be visible within 25 miles (40 km) of each of the areas listed above. For the most part, visibility of solar facilities would be limited to taller components, such as transmission towers and power towers. Views of the SEZ would be mostly low-angle views, and collector/reflector arrays in the SEZ would appear edge-on, reducing their apparent size and lessening their visual contrast. In general, visual impacts would be larger for power tower facilities than for parabolic trough and PV facilities and would cause strong to very strong visual contrasts for some viewpoints within the Yuma East Undeveloped

SRMA, Gila River Valley Undeveloped SRMA, Sears Point, Sears Point Core, and Gila River Terraces and Lower Gila Historic Trails ACECs.

There are 140 acres (0.57 km<sup>2</sup>) of lands within the SEZ that have been inventoried and found to have wilderness characteristics; however, these lands are not managed to maintain wilderness characteristics within the SEZ.

### **3.9.3 Livestock Grazing and Wild Horses and Burros**

The SEZ is located within the Palomas Grazing allotment, but the allotment was withdrawn in 2010 due to non-use.

The SEZ is not located within a current herd management area (HMA) or herd area (HA).

*This page intentionally left blank*

## 4 ENVIRONMENTAL CONSEQUENCES

### 4.1 OVERVIEW AND CONTEXT OF THE PROPOSED 20-YEAR WITHDRAWAL

A segregation of the SEZ lands was initiated with a new Notice of Proposed Withdrawal; this new segregation will expire on September 21, 2016. The potential impacts of solar development on these lands were analyzed in the Final RDEP EIS (BLM 2012c), and the ROD was signed on January 18, 2013 (BLM 2013).

The purpose of the proposed withdrawal, which is the subject of this EA, is to minimize the potential for conflicts between mineral development and solar energy development on the Agua Caliente SEZ for the proposed 20-year withdrawal period. The following resources and resource values would be potentially affected by the proposed withdrawal of lands:

- Mineral resources;
- Socioeconomics;
- Visual resources and wilderness;
- Cultural resources;
- Biological resources;
- Soils, floodplains, wetlands, and streams;
- Water resources;
- Air quality; and
- Land use and recreation.

The proposed withdrawal is administrative in nature and would not directly or indirectly impact the resources listed above. For purposes of this assessment, it is assumed that the primary difference between the proposed action and no action is the potential for location of new mining claims under the no action alternative. Therefore, analyses in this EA focus on identifying the types and nature of impacts that are associated with mining, mineral processing, and supporting infrastructure within the SEZ that could occur under the no action alternative. These discussions are qualitative in nature and any new mining activity would be subject to the applicant providing a plan of development and/or plan of operation that would be subject to stipulations to protect resource values, along with existing improvements, as appropriate. As noted in Section 3.1, the Agua Caliente SEZ does not have a history of mineral production or any current mining claims, and the locatable mineral potential is considered low. Because the potential for the occurrence and development of locatable minerals within the SEZ is low, the likelihood of mining (and mining-related impacts) within the SEZ under the proposed action alternative and no action

alternative is also low. The future development of leasable minerals (oil, gas, geothermal, and sodium) and saleable materials (sand, gravel, and common clay) would continue to be authorized and conducted at the BLM's discretion and, therefore, is not affected by either alternative. Although little actual new mining would be expected to be initiated within the 20-year withdrawal period, the proposed withdrawal of lands would preclude many types of mining activity over a 20-year period, resulting in the avoidance of potential mining-related impacts. Therefore, the following discussion presents potential or plausible effects of mining activities. Because the actual overall effects are expected to be low, there may be very little actual difference between the environmental effects of the proposed action and those of the no action alternative.

## **4.2 ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION**

### **4.2.1 Mineral Resources**

The proposed action would defer new mining activities within the Agua Caliente SEZ for a 20-year period. The future development of leasable minerals (oil, gas, geothermal, and sodium) and saleable materials (sand, gravel, and common clay) would continue to be authorized at the BLM's discretion and would not be affected under the proposed action.

The impacts of the proposed action on mineral resources would be small because the potential for locatable minerals within the SEZ is low. Any mining activities would be limited to activities on existing mining claims, of which there are none. New mining claims to explore for and extract minerals from federal lands on the SEZ would be prohibited for the duration of the withdrawal. The lands would be open to leasing; therefore leasable minerals (oil, gas, geothermal, and sodium) and saleable materials (sand, gravel, and common clay) could be developed. The impacts on these resources would be the same under the proposed action and the no action alternative, but based on known resources would be small.

### **4.2.2 Socioeconomic Effects**

Local economies benefit directly from increased economic activity and employment opportunities, including direct impacts from employment and income and indirect impacts from that additional income circulating throughout the local economy. Under the proposed action, these positive socioeconomic effects would not occur because new mining activities would be deferred for the 20-year withdrawal period. Therefore, the land withdrawal under the proposed action could result in small adverse socioeconomic impacts if mining-related employment and economic activity are delayed until after the withdrawal period. However, the purpose of the withdrawal is to preserve the lands for solar energy development, so it is possible that employment opportunities would be greater under the proposed action if solar energy projects were to be developed on the SEZ.

### **4.2.3 Visual Resources**

Mining activities would cause visual impacts on landscapes from the construction of infrastructure and support structures, vegetation clearing, and increased human presence in the SEZ. Under the proposed action, new mining activities would be deferred for the 20-year duration of the proposed withdrawal; therefore, no visual resources would be affected by mining development from locating additional mining claims on the SEZ. Impacts on visual resources could still occur from future development of leasable minerals (oil, gas, geothermal, and sodium) and saleable materials (sand, gravel, and common clay), although the potential for development is low.

### **4.2.4 Cultural Resources**

#### **4.2.4.1 Archaeology and Historic Properties**

Impacts on archaeology and historic properties can occur from land disturbance activities and can be exacerbated by increased human presence at the site. Mining development would include vegetation and soil removal for mining activities and construction of access roads or other infrastructure, all of which could disturb important cultural resources through direct damage to individual artifacts. Other impacts on cultural resources could include the increased risk of loss by theft or vandalism from increased access to resources, and adverse impacts from the noise and air quality effects of mining operations. Under the proposed action, new mining activities would be deferred for the 20-year duration of the proposed withdrawal; therefore, no archaeological resources or historic properties would be affected by mining development from locating additional mining claims on the SEZ. Impacts on these cultural resources could still occur from future development of leasable minerals and saleable materials, although the potential for development is low.

#### **4.2.4.2 Paleontology**

Mining activities can impact paleontological resources through ground disturbance associated with construction of infrastructure and support facilities, increased access through human presence in the SEZ, and mining operations. Other impacts could include the increased risk of loss by theft or vandalism from increased access to resources. Under the proposed action, new mining activities would be deferred for the 20-year duration of the proposed withdrawal; therefore, no paleontological resources would be affected by future mining development from locating additional mining claims on the SEZ. Impacts on paleontological resources could still occur from future development of leasable minerals and saleable materials, although the potential for development is low.

#### **4.2.4.3 Native American Concerns**

Mining activities could disrupt resources important to Native Americans. Resources range from culturally important plants and animals, as well as sacred sites with visual and cultural importance. Impacts on these resources can occur from mining activities including land clearance, the visual presence of infrastructure and support facilities, impacts from noise, increased traffic, and impacts on vegetation and biological resources from water withdrawal or soil erosion. Under the proposed action, new mining activities would be deferred for the 20-year duration of the proposed withdrawal; therefore, resources of concern to Native American tribes would not be affected by future mining development from locating additional mining claims on the SEZ. Impacts on these resources could still occur from future development of leasable minerals and saleable materials, although the potential for development is low.

#### **4.2.5 Biological Resources**

##### **4.2.5.1 Vegetation**

Mining and associated activities could have potential impacts on terrestrial and wetland plant communities and habitats. Impacts could include impacts from habitat removal, such as changes in species composition, abundance, and distribution. Because mining and associated activities tend to disturb large areas of soils, they present opportunities for the establishment of noxious weeds and invasive plant species, as well as the loss of native species in the affected area. Under the proposed action, new mining activities would be deferred for the 20-year duration of the proposed withdrawal; therefore, no vegetation resources would be affected by future mining development from locating additional mining claims on the SEZ. Impacts on vegetation (including vegetative communities and noxious weeds) could still occur from future development of leasable minerals and saleable materials, although the potential for development is low.

##### **4.2.5.2 Wildlife, Migratory Birds, Fish, and Special Status Species**

Mining and associated activities could have impacts on wildlife through habitat destruction, habitat fragmentation, and migration corridor blockage caused by mining operations. Migratory birds could be impacted by hazards associated with infrastructure and ponds containing mining wastes. Increased sedimentation of streams and wetlands, toxic runoff from mine wastes, and changes in drainage patterns could impact fish and other aquatic biota. Impacts on special status species would include disturbance of species' habitat, food and prey. Under the proposed action, new mining activities would be deferred for the 20-year duration of the proposed withdrawal; therefore, no wildlife, migratory birds, fish, or special status species resources would be affected by future mining development from locating additional mining claims on the SEZ. Impacts on these biological resources could still occur from future development of leasable minerals and saleable materials, although the potential for development is low.

#### **4.2.6 Soils, Streams, Floodplains, and Wetlands**

Mining activities such as land clearing could increase soil erosion, while modifications of the landscape can create changes in drainage patterns, impacting streams, floodplains, and wetlands downstream of disturbed areas. Disturbances of floodplains could affect floodplain function, associated stream channels and downstream areas. However, no water rights would be needed to satisfy the purpose of the proposed withdrawal. Under the proposed action, new mining activities would be deferred for the 20-year duration of the proposed withdrawal; therefore, no soils, floodplains, wetlands, or streams resources would be affected by future mining development from locating additional mining claims on the SEZ. Impacts on these resources could still occur from future development of leasable minerals and saleable materials, although the potential for development is low.

#### **4.2.7 Groundwater Resources**

Mining can impact groundwater resources at each stage of development. Activities from mineral extraction can result in water diversion required to access mineral resources and possible water contamination. Mineral processing can require large amounts of process water, which can also lead to water contamination. Groundwater diversions would impact water at receiving locations, and water consumption would reduce water availability in an already arid region. However, no water rights would be needed to fulfill the purpose of the requested withdrawal. Under the proposed action, new mining activities would be deferred for the 20-year duration of the proposed withdrawal; therefore, no groundwater resources would be affected by future mining development from locating additional mining claims on the SEZ. Impacts on groundwater resources could still occur from future development of leasable minerals and saleable materials, although the potential for development is low.

#### **4.2.8 Air Quality**

Mining operations generate air pollutants primarily from fugitive dust emissions from mines, waste piles, roads, and processing operations and to a lesser extent, from diesel- and gasoline-powered equipment and vehicles. Under the proposed action, new mining activities would be deferred for the 20-year duration of the proposed withdrawal; therefore, no air quality resources would be affected by future mining development from locating additional mining claims on the SEZ. Impacts on air quality could still occur from future development of leasable minerals and saleable materials, although the potential for development is low.

#### **4.2.9 Land Use and Recreation**

Mining operations could adversely impact recreation and wilderness areas through adverse visual, noise, and air quality effects of mining. Under the proposed action, new mining activities would be deferred for the 20-year duration of the proposed withdrawal; therefore, no land use or recreation resources would be affected by future mining development from locating

additional mining claims on the SEZ. Impacts on land use and recreation could still occur from future development of leasable minerals and saleable materials, although the potential for development is low.

### **4.3 Environmental Consequences of the No Action Alternative**

#### **4.3.1 Mineral Resources**

Under the no action alternative, the temporary segregation would expire and lands would be managed pursuant to the BLM's resource management plans, laws, regulations, and policies. As described in Section 3.1, there are no documented occurrences of locatable minerals within the SEZ boundaries and the potential for such minerals (both lode and placer) is considered to be low (BLM 2014). Given the low potential for locatable minerals (and the absence of mining claims or mining activity), interest in new mining claims and mineral development within the SEZ is unlikely. The SEZ would remain open for the disposal of saleable minerals (e.g., sand and gravel) and discretionary leasing of oil and gas or geothermal resources. Therefore, impacts from the no action alternative are expected to be small.

#### **4.3.2 Socioeconomic Effects**

Under the no action alternative, the temporary segregation would expire and new mining claims could be filed within the SEZ. Both beneficial and adverse socioeconomic impacts from mineral resource development could occur. Mining development would result in positive direct impacts as a result of expenditures on wages and salaries from employment, procurement of goods and services required for mining activities, and collection taxes. The number of jobs created would depend on the number of new mining claims and the extent of mining development. The local economy could benefit from indirect impacts as the wages, procurement expenditures, and tax revenues circulate through the economy creating additional employment, income, and tax revenues.

From a social perspective, adverse impacts could occur if recreationists have adverse reactions to disturbed landscapes from mining activities or if mineral development leads to an increased demand for additional open space. Local communities could perceive that mining would have a negative impact on their quality of life, particularly if there are increasing conflicting demands for resource uses. Under the no action alternative, there is an increased potential for adverse impacts on socioeconomics within and near the SEZ. However, given the low level of current mining development and mineral potential as described in Section 3.1, mineral development within the SEZ is unlikely and therefore, socioeconomic impacts from the no action alternative are expected to be small.

### 4.3.3 Visual Resources

Under the no action alternative, the temporary segregation would expire and new mining claims could be filed within the SEZ. Mining activities would create visual impacts through ground disturbance and the presence of infrastructure and other support structures. Mineral extraction or mining operation could also cause adverse impacts on visual resources through the loss of vegetative cover and soils, as well as modifications to the natural landscape. Vehicle traffic for worker access and large-equipment traffic required for road construction, site preparation, and excavation would produce visible activity and generate dust. The actual impacts on visual resources and their magnitude would depend on the location and scale of operations; a large mining project would require more structures, equipment, buildings, and general land disturbance. Under the no action alternative, there is an increased potential for adverse impacts on visual resources within and near the SEZ. However, given the low level of current mining development and mineral potential as described in Section 3.1, mineral development within the SEZ is unlikely and therefore, visual impacts from the no action alternative are expected to be small.

### 4.3.4 Cultural Resources

#### 4.3.4.1 Archaeology and Historic Properties

Under the no action alternative, the temporary segregation would expire and new mining claims could be filed within the SEZ. Cultural resources listed or eligible for listing on the NRHP could be affected by mining development. Direct impacts on cultural resources could occur from construction of access roads, new structures, or additional infrastructure, and from extraction methods. Indirect effects, such as impacts on the cultural landscape resulting from soil erosion and from increased accessibility to possible site locations, are also possible. However, compliance with Section 106 of the NHPA and other laws, regulations, and policies would likely avoid, minimize, or mitigate adverse impacts on historic properties present within the SEZ. Destruction of archaeological materials or historic properties could result from land clearing, grading, excavation, and construction of facilities and associated infrastructure. Site degradation could result from the alteration of topography, alteration of hydrologic patterns, removal and erosion of soils, runoff, or contaminant spills near historic or archaeological resources. Mining development could cause visual degradation that could negatively affect cultural resources whose significance depends on visual integrity (i.e. sacred sites and landscapes, historic trails, and historic landscapes). Under the no action alternative, there is an increased potential for adverse impacts on archaeology and historic properties within and near the SEZ. However, given the low level of current mining development and mineral potential as described in Section 3.1, mineral development within the SEZ is unlikely and therefore, impacts on archaeology and historic properties from the no action alternative are expected to be small.

#### **4.3.4.2 Paleontology**

Under the no action alternative, the temporary segregation would expire and new mining claims could be filed within the SEZ. Construction and mining activities have the potential to disturb or destroy paleontological resources. Before any mineral excavation or mining could occur, additional surveys and site-specific analyses would be required to minimize impacts. In addition, mining activities would be subject to applicable permits and lease conditions intended to protect fossil resources. Under the no action alternative, there is an increased potential for adverse impacts on paleontological resources within and near the SEZ. However, given the low level of current mining development and mineral potential as described in Section 3.1, mineral development within the SEZ is unlikely and therefore, impacts on paleontological resources from the no action alternative are expected to be small.

#### **4.3.4.3 Native American Concerns**

Under the no action alternative, the temporary segregation would expire and new mining claims could be filed within the SEZ. Resources important to Native Americans could be affected by mining development in and around the areas where development takes place. Native American concerns include traditional cultural properties, burial remains, sacred sites or landscapes, culturally important wild plants and animals, and water quality and use, among others. Destruction of sites and resources of importance to tribes could result from land clearing, grading, excavation, and construction of facilities and associated infrastructure if culturally important resources are located in the area of mining development. Site degradation could result from the alteration of topography, alteration of hydrologic patterns, removal and erosion of soils, runoff, or contaminant spills near resources of Native American concern. Mining development could cause visual degradation that could negatively affect sacred sites, landscapes, and trails. Indirect impacts on water quality and use, the ecosystem, and erosion of disturbed land surfaces are also possible. Under the no action alternative, there is an increased potential for adverse impacts on resources important to Native Americans within and near the SEZ. However, given the low level of current mining development and mineral potential as described in Section 3.1, mineral development within the SEZ is unlikely and therefore, impacts on cultural resources with Native American significance from the no action alternative are expected to be small.

### **4.3.5 Biological Resources**

#### **4.3.5.1 Vegetation**

Under the no action alternative, the temporary segregation would expire and new mining claims could be filed within the SEZ. Development of mineral resources could impact vegetation through disturbance of surface soil, vegetation removal, and increases in noxious weeds and invasive species. The specific impacts on vegetation and their magnitude would depend on location and scale of operations, since impacts on vegetation are dependent on the amount of land disturbed. Under the no action alternative, there is an increased potential for adverse

impacts on vegetation within and near the SEZ. However, given the low level of current mining development and mineral potential as described in Section 3.1, mineral development within the SEZ is unlikely and therefore, impacts on vegetation from the no action alternative are expected to be small.

#### **4.3.5.2 Wildlife, Migratory Birds, Fish, and Special Status Species**

Under the no action alternative, the temporary segregation would expire and new mining claims could be filed within the SEZ. Mining and mineral extraction activities would result in the loss or alteration of habitat and habitat features, and reduced forage cover from vegetation removal. Indirect impacts of mining and mineral activities could include habitat fragmentation and restricted wildlife movement. Short-term impacts from mining activities include disturbance and displacement and changes in wildlife behavior from noise and human presence, while long-term impacts include the change in species diversity and composition. In general, impacts on most wildlife species would be proportional to the amount of habitat disturbed, and would depend on size of the mining activity. Under the no action alternative, there is an increased potential for adverse impacts on wildlife, migratory birds, and fish within and near the SEZ. However, given the low level of current mining development and mineral potential as described in Section 3.1, mineral development within the SEZ is unlikely and therefore, impacts on wildlife, migratory birds, and fish from the no action alternative are expected to be small.

Impacts on special status species could result in the take of listed species during mining and mineral extraction activities. Surface disturbance, injury or mortality, loss of habitat, and increased risk of contact with toxic substances could also occur from mining development. The SEZ may provide potential habitat for several special status species, although no known species-specific special status species surveys have been conducted onsite. Under the no action alternative, there is an increased potential for adverse impacts on special status species within and near the SEZ. However, given the low level of current mining development and mineral potential as described in Section 3.1, mineral development within the SEZ is unlikely and therefore, impacts on special status species from the no action alternative are expected to be small.

#### **4.3.6 Soils, Streams, Floodplains, and Wetlands**

Under the no action alternative, the temporary segregation would expire and new mining claims could be filed within the SEZ. Development of mineral resources on the SEZ would result in the loss of soil resources through loss of vegetation and surface disturbance. Soil erosion and other impacts on soils would result from mineral extraction, sand and gravel operations, and dust generation from mining activities and traffic on unpaved roads. Soil contamination could occur from the use of pesticides and herbicides and accidental spills. Wetland habitats could be impacted from soil erosion and subsequent sediment loading. Wetlands and streams could be affected by sedimentation or degraded water quality from runoff containing mine leachate. Under the no action alternative, there is an increased potential for adverse impacts on soils, floodplains, wetlands, and streams within and near the SEZ. However, given the low level of

current mining development and mineral potential as described in Section 3.1, mineral development within the SEZ is unlikely and therefore, impacts on soil resources from the no action alternative are expected to be small.

#### **4.3.7 Groundwater Resources**

Under the no action alternative, the temporary segregation would expire and new mining claims could be filed within the SEZ. Mining activities in arid ecosystems could result in the alteration of the water regime and depletion of groundwater. The extent of impacts would depend on the type and intensity of mining. Water quality could be affected by sedimentation and from accidental spills of metals and acidic chemicals that have the potential to leach into the groundwater. Under the no action alternative, there is an increased potential for adverse impacts on groundwater resources within and near the SEZ. However, given the low level of current mining development and mineral potential as described in Section 3.1, mineral development within the SEZ is unlikely and therefore, impacts on groundwater resources from the no action alternative are expected to be small.

#### **4.3.8 Air Quality**

Under the no action alternative, the temporary segregation would expire and new mining claims could be filed within the SEZ. Mining activities would generate dust, airborne particulates, and emissions from gasoline- and diesel-powered equipment. Dust emissions could contribute to exceedances of particulate matter air quality standards and could produce visual impacts in surrounding areas, and particulates could produce haze that affects visibility. Emissions from fossil fuel-burning equipment could contribute to atmospheric ozone (O<sub>3</sub>) production and to haze but would be regulated by permits. Under the no action alternative, there is an increased potential for adverse impacts on air quality within and near the SEZ. However, given the low level of current mining development and mineral potential as described in Section 3.1, mineral development within the SEZ is unlikely and therefore, impacts on air quality from the no action alternative are expected to be small.

#### **4.3.9 Land Use and Recreation**

##### **4.3.9.1 Recreation and Travel Management**

Under the no action alternative, the temporary segregation would expire and new mining claims could be filed within the SEZ. Potential mineral extraction or mining operation could cause adverse impacts on the public's ability to experience naturalness and solitude as a recreational opportunity. These impacts would primarily come from the use of motorized and mechanized equipment, increased traffic, and the creation of tailing piles, pits, access roads, and structures. It is possible that OHV trails or hiking and camping activities would be limited if mining activities were to occur on the SEZ. The specific impacts on recreation, and their

magnitude, would depend on location and scale of operations. Under the no action alternative, there is an increased potential for adverse impacts on land use and recreation within and near the SEZ. However, given the low level of current mining development and mineral potential as described in Section 3.1, mineral development within the SEZ is unlikely and therefore, impacts on recreation and travel management from the no action alternative are expected to be small.

#### **4.3.9.2 Special Designations, National Trails, and Lands with Wilderness Characteristics**

Under the no action alternative, the temporary segregation would expire and new mining claims could be filed within the SEZ. There are no national scenic, historic, or recreation trails located within the SEZ. However, mineral activities could adversely impact scenic values and the enjoyment of Juan Bautista de Anza National Historic Trail, which is located approximately 5 miles (8 km) south of the SEZ; SEZ lands are visible from the trail corridor.

Land within the SEZ has been inventoried and found to have wilderness characteristics; however, none of the lands are managed for wilderness characteristics protection. Mining activities could negatively impact scenic values on these lands, and impacts from noise, soil and vegetation clearance, and dust generation could adversely affect wilderness characteristics. However, given the low level of current mining development and mineral potential as described in Section 3.1, mineral development within the SEZ is unlikely and therefore, impacts on special designations, national trails, and lands with wilderness characteristics from the no action alternative are expected to be small.

## **4.5 CUMULATIVE IMPACTS**

### **4.5.1 Past and Present Actions**

The Agua Caliente SEZ is located in eastern Yuma County, Arizona, a sparsely populated area with limited economic development. The surrounding area is predominately agricultural and undeveloped desert. The SEZ lies between two ephemeral washes, and the Agua Caliente Mountains are 7 miles (11 km) to the east.

There is one solar facility on private lands surrounded by the Agua Caliente SEZ. There are currently no active oil and gas or geothermal leases within the SEZ, and there are no mining claims or active mines. Yuma County's population has grown substantially in the past 10 years, leading to an increasing number of people seeking local recreational opportunities, including hunting, camping, and OHV riding.

#### **4.5.2 Reasonably Foreseeable Actions**

The primary reasonably foreseeable actions in the area proposed for withdrawal would be the continuation of current uses as well as increased use for renewable energy development. The SEZ has been identified by the BLM as a priority area for solar energy development; therefore, the primary foreseeable use of the lands would be for solar energy development, which would cause impacts on multiple resources as identified in the RDEP EIS (BLM 2012b,c). Other compatible current uses, including recreation use, within the SEZ may continue over the withdrawal period where solar facilities are not located. Existing roads would continue to be open, except within project areas, and new roads may be required around new solar energy facilities to maintain public access. Population forecasts predict a continued increase in population in Yuma County; therefore, demand for recreational opportunities would likely remain high or increase over a 20-year period.

#### **4.5.3 Cumulative Impacts of the Proposed Action**

Under the proposed action, new mining activities would be deferred for the 20-year duration of the proposed withdrawal; therefore, resources would not be affected by future mining development from locating additional mining claims on the SEZ. Where there are valid existing mining claims within the withdrawn area, these claims could still be developed. Mineral leasing for oil and gas, geothermal leasing, and the extraction and sale of salable minerals could all be permitted at the BLM's discretion irrespective of the withdrawal.

It is likely that the SEZ would be developed for solar energy production. The anticipated environmental and socioeconomic effects of solar development have been described in the Final RDEP EIS and the Final Solar PEIS (BLM 2012c; BLM and DOE 2012) and are not repeated here, but the impacts of solar development on the SEZ could be significant and would be further examined through project specific NEPA analysis.

Given the low mineral potential, the increased mineral resource development that would contribute to cumulative impacts within the SEZ under the proposed action is anticipated to be minimal.

#### **4.5.4 Cumulative Impacts of No Action**

Under the no action alternative, the temporary segregation would expire and new mining claims could be filed within the SEZ; therefore, there would be an increased potential for adverse impacts within and near the SEZ. However, given the low level of current mining development and mineral potential, increased mineral development that would contribute to cumulative impacts within the SEZ is unlikely. The current level of activities occurring on these lands is likely to continue. There is a possibility that speculative mining claims may be filed, preventing or hindering solar energy development in the SEZ.

## 5 CONSULTATION AND COORDINATION

### 5.1 PUBLIC PARTICIPATION AND PUBLIC COMMENTS

A “Notice of Proposed Withdrawal and Opportunity for Public Meeting, Agua Caliente Solar Energy Zone, Arizona” was published in the *Federal Register* on September 22, 2014 (79 FR 56603). The BLM did not receive any requests for a public meeting.

The comment period was extended from December 22, 2014, until January 31, 2015. The BLM did not receive any comments during the comment period and no issues were identified.

### 5.2 AGENCIES CONSULTED

For the RDEP EIS, a total of 10 agencies worked with the BLM as cooperating agencies. These agencies included the following:

- Arizona Corporation Commission;
- Arizona Department of Environmental Quality;
- Arizona Department of Water Resources;
- Arizona Game and Fish Department;
- Arizona State Land Department;
- Bureau of Reclamation;
- Central Arizona Water Conservation District;
- Mohave County;
- National Park Service; and
- Western Area Power Administration.

In addition, the BLM contacted 23 tribal governments for government-to-government consultation for the RDEP EIS. The tribes included the following:

- Ak-Chin Indian Community;
- Fort Yuma-Quechan Tribe;
- Pascua Yaqui Tribe;
- Colorado River Indian Tribes;
- Cocopah Indian Tribe;
- Yavapai-Prescott Indian Tribe;
- Hualapai Tribe;
- Hopi Tribe;
- White Mountain Apache Tribe;
- Havasupai Tribe;
- San Carlos Apache Tribe;
- Tonto Apache Tribe;
- Navajo Nation;
- Yavapai-Apache Nation;

- Chemehuevi Tribe;
- Kaibab Paiute Tribe;
- Fort Mojave Tribe;
- Pueblo of Zuni;
- Gila River Indian Community;
- Salt River Pima-Maricopa Indian Community;
- Tohono O'odham Nation;
- Fort McDowell Yavapai Nation; and
- San Juan Southern Paiute Tribe.

The BLM has also coordinated with the Arizona State Historic Preservation Office (SHPO), in accordance with the requirements of Section 106 of the NHPA, and has engaged in consultation with the USFWS in accordance with the requirements of Section 7 of the Endangered Species Act (ESA) for the RDEP EIS.

## **6 LIST OF PREPARERS**

Bureau of Land Management, Arizona State Office

Lane Cowger

Argonne National Laboratory, Environmental Science Division

Ellen White (M.P.P)

Konstance Wescott (M.A.)

Heidi Hartmann (M.S.)

Terri Patton (M.S.)

*This page intentionally left blank*

## 7 REFERENCES

36 CFR 800. Code of Federal Regulations, Title 36, Parks, Forests, and Public Property, Part 800, “Protection of Historic Properties.”

43 CFR 2300. Code of Federal Regulations, Title 43, Public Lands: Interior, Part 2300, “Land Withdrawals.”

43 CFR 3715. Code of Federal Regulations, Title 43, Public Lands: Interior, Part 3715, “Use and Occupancy Under the Mining Laws.”

43 CFR 3809. Code of Federal Regulations, Title 43, Public Lands: Interior, Part 3809, “Surface Management.”

77 FR 7600. “Segregation of Public Lands in the State of Arizona for the Restoration Design Energy Project—Agua Caliente Solar Energy Zone in Yuma, County, AZ.” *Federal Register* Volume 77, Number 29, pages 7600–7601.

78 FR 40499. *Federal Register* Volume 78, Issue 129 (July 5, 2013). Public Land Order No. 7818; Withdrawal of Public Lands for the Protection and Preservation of Solar Energy Zones for Future Energy Development; Arizona, California, Colorado, Nevada, New Mexico, and Utah.

79 FR 56603. “Notice of Proposed Withdrawal and Opportunity for Public Meeting, Agua Caliente Solar Energy Zone, Arizona.” *Federal Register* Volume 79, Number 183, page 56603.

43 U.S.C. 1714. United States Code. Title 43, Public Lands, Section 1714, Withdrawal of Lands.

AGFD (Arizona Game and Fish Department), 2006, Arizona’s Comprehensive Wildlife Conservation Strategy: 2005–2015. Phoenix, Arizona. May 24. As cited in BLM 2012c.

Argonne (Argonne National Laboratory), 2014, *Visual Impact Assessment for Solar Energy Development in the Agua Caliente Solar Energy Zone*, ANL/EVS/TM-14/3, prepared by R. Sullivan and J. Abplanalp, Environmental Science Division, September.

Armstrong, C.A., and C.B. Yost, 1958, *Geology and Ground Water Resources of the Palomas Plain – Dendora Valley Area, Maricopa, and Yuma Counties, Arizona*, U.S. Geological Survey, January.

BLM (Bureau of Land Management), 2012a, *Approved Resource Management Plan Amendments/Record of Decision for Solar Energy Development in Six Southwestern States*. October. Available at [http://solareis.anl.gov/documents/docs/Solar\\_PEIS\\_ROD.pdf](http://solareis.anl.gov/documents/docs/Solar_PEIS_ROD.pdf).

BLM, 2012b, *Draft Environmental Impact Statement for the Restoration Design Energy Project*, BLM/AZ/PL-12/004. February. Available at [http://www.blm.gov/az/st/en/prog/energy/arra\\_solar/DEIS.html](http://www.blm.gov/az/st/en/prog/energy/arra_solar/DEIS.html).

BLM, 2012c, *Final Environmental Impact Statement for the Restoration Design Energy Project*, BLM/AZ/PL-13/001. October. Available at [http://www.blm.gov/az/st/en/prog/energy/arra\\_solar/feis.html](http://www.blm.gov/az/st/en/prog/energy/arra_solar/feis.html).

BLM, 2013, *Record of Decision (ROD) and Approved Resource Management Plan Amendments for the Restoration Design Energy Project*, January. Available at <http://www.blm.gov/pgdata/etc/medialib/blm/az/pdfs/energy/rdep.Par.61787.File.dat/RDEP-ROD-ARMP.pdf>.

BLM, 2014, *Land and Mineral Legacy Rehost 2000 System—LR2000*, last updated August 22, 2013. Available at <http://blm.gov/lr2000>. Accessed April 17, 2014.

BLM and DOE, 2012, *Final Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States*, FES 12-24, DOE/EIS-0403, July. Available at <http://solareis.anl.gov/documents/fpeis/index.cfm>.

Jones, N.O., 1979, *Preliminary Geothermal Assessment of the Hyder Area*, Bureau of Geology and Mineral Technology, Arizona Geological Survey, Open File Report 79-13, July.

Patton, T., 2015, *Mineral Resource Potential of Public Lands Located within the Agua Caliente Solar Energy Zone in Yuma County, Arizona*, Prepared by Argonne National Laboratory, Argonne, IL, for Bureau of Land Management, Arizona State Office. February.

Skotnicki, S.J., and C.A. Ferguson, 1994, *Geologic Map of the Palomas Mountains, Yuma County, Arizona (map and report)*, Open File Report 94-9, Arizona Geological Survey, August.

U.S. Census Bureau, 2011, *2011 County Business Patterns (NAICS)*. Available at <http://censtats.census.gov/cgi-bin/cbpnaic/cbpsect.pl>.

USGS (U.S. Geological Survey), 2014, *Mineral Resource Data System: Conterminous U.S.*, Mineral Resources On-Line Spatial Data. Available at <http://mrdata.usgs.gov/mineral-resources/mrds-us.html>. Accessed March 10, 2014.

**APPENDIX A:**

**LEGAL DESCRIPTION OF THE AGUA CALIENTE SOLAR ENERGY ZONE**

*This page intentionally left blank*

**APPENDIX A:**

**LEGAL DESCRIPTION OF THE AGUA CALIENTE SOLAR ENERGY ZONE**

Gila and Salt River Meridian

Agua Caliente Solar Energy Zone (SEZ)

T. 5 S., R. 12 W.,

Sec. 15, S<sup>1</sup>/<sub>2</sub>NE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub>, S<sup>1</sup>/<sub>2</sub>NW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub>, S<sup>1</sup>/<sub>2</sub>NE<sup>1</sup>/<sub>4</sub>, S<sup>1</sup>/<sub>2</sub>NE<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>, S<sup>1</sup>/<sub>2</sub>NW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>, SE<sup>1</sup>/<sub>4</sub>;

Sec. 17, SE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub>, SE<sup>1</sup>/<sub>4</sub>;

Sec. 20, NE<sup>1</sup>/<sub>4</sub>, SE<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>, E<sup>1</sup>/<sub>2</sub>SW<sup>1</sup>/<sub>4</sub>, SE<sup>1</sup>/<sub>4</sub>;

Sec. 22, E<sup>1</sup>/<sub>2</sub>NE<sup>1</sup>/<sub>4</sub>, E<sup>1</sup>/<sub>2</sub>SE<sup>1</sup>/<sub>4</sub>;

Sec. 23, W<sup>1</sup>/<sub>2</sub>;

Sec. 26, N<sup>1</sup>/<sub>2</sub>NE<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>, NW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>;

Sec. 28, W<sup>1</sup>/<sub>2</sub>NE<sup>1</sup>/<sub>4</sub>, W<sup>1</sup>/<sub>2</sub>, W<sup>1</sup>/<sub>2</sub>SE<sup>1</sup>/<sub>4</sub>;

Sec. 29, NE<sup>1</sup>/<sub>4</sub>, E<sup>1</sup>/<sub>2</sub>NW<sup>1</sup>/<sub>4</sub>, E<sup>1</sup>/<sub>2</sub>SW<sup>1</sup>/<sub>4</sub>, SE<sup>1</sup>/<sub>4</sub>;

Sec. 33, NW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub>, N<sup>1</sup>/<sub>2</sub>NW<sup>1</sup>/<sub>4</sub>, NW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>.

The areas described aggregate 2,560 acres (10.4 km<sup>2</sup>), more or less, of public lands in Yuma County, Arizona.

*This page intentionally left blank*