HABITAT ASSESSMENT FOR MOHAVE GROUND SQUIRREL

LANDPRO 7.5 MW SOLAR PROJECT
APN 0466-181-059, 060, 061 & 062

SAN BERNARDINO COUNTY, CALIFORNIA
(USGS Wild Crossing, CA Quad.; Township 8 North, Range 4 West, Section 20)

Owner/Applicant

Sunlight Partners LLC
4215 East McDowell Road, Suite 212
Mesa, AZ 85205
(480) 924-5519

Prepared by:

RCA Associates, LLC
15555 Main Street, #D4-235
Hesperia, California 92345
Ryan Young
Principal Investigator
(760) 956-9212

Report prepared by: Ryan Young & Randall Arnold
(760) 956-9212

Project No: RCA#2012-13MGS

July 31, 2012
(Date Report Prepared)

Table of Contents

EXECUTIVE SUMMARY

Sunlight Partners, LLC is proposing to construct a solar facility on a 75-acre site (approximately) in San Bernardino County (Township 8 North, Range 4 West, Section 20) (Figures 1, 2, and 3). The site has been utilized in the past for farming (i.e., alfalfa production) and currently supports a disturbed fallow field. Dominant vegetation included a variety of species typical of fallow agricultural fields and disturbed grasslands, such as saltbush (*Atriplex canescens*), wheelscale (*A. elegans*), Russian thistle (*Salsola tragus*), and brome grasses (*Bromus* sp.).

The property is located within the known distribution of the Mohave ground squirrel; therefore, a habitat assessment was performed for the species on July 28, 2012. The habitat assessment was performed by Ryan Young from approximately 0730 to 1130 hours. Mr. Young holds a Memorandum of Understanding (MOU) from California Department of Fish and Game (CDFG) for the species.

The site <u>does not</u> support suitable habitat for the Mohave ground squirrel based on several criteria outlined in the following sections. Based on the results of the habitat assessment, the proponent will not be required to mitigate for potential impacts to the species; however, CDFG should be contacted for concurrence with this conclusion (Becky Jones, rjones@dfg.ca.gov).

1.0 PROJECT AND PROPERTY DESCRIPTION

The property is located in the east ½ of the southwest ¼ of section 20, township 8 north, range 4 west, San Bernardino Base and Meridian (Figure 2). The site is approximately 75-acres in size and has been previously utilized for farming activities. Evaluation of aerial photos over the last several years indicates the site has been farmed for at least ten years which has resulted in the removal of most native vegetation; although, some re-vegetation has occurred. A habitat assessment was performed on July 28, 2012 by Mr. Ryan Young for the Mohave ground squirrel. The results of the survey are presented in this report. Currently, the site supports a variety of plants typical of fallow agricultural fields and disturbed grasslands. Dominant species included saltbush (*Atriplex canescens*), seepweed (*Sueda moquinii*), wheelscale (*A. elegans*), Russian thistle (*Salsola tragus*), and brome grasses (*Bromus* sp.). See Section 4.0 for a more detailed discussion of the biological resources.

The project would consist of a 7.5 MW high-efficiency solar facility as depicted in Figure 1. According to a background study prepared by Sunlight Partners (2011), "The solar arrays would consist of Polycrystalline Silicon modules that are approximately 77" by 39" with 2" profiles. The modules would be mounted on a single axis tracker system supported by steel piles about 4" by 8", and the piles would be mounted at 20-foot intervals." In addition, the panels would be about five to six feet off grade and the supporting piles would be placed at intervals of about 20-feet.

Elevations ranged from 2,390 to 2,410 feet (MSL) with a slight slope to the northeast (Figure 2). Soils consisted of disturbed sandy loam with a few gravels and small rocks present. The site is bordered on the west by an existing stable facility and on the south, north, and northeast by vacant lands. Single-family dwellings are also located to the east and southeast. The USGS Wild Crossing Quadrangle does not show any blueline channels on the site, and no streams, desert washes or other water courses were observed during the April 10th field investigations. No wildlife corridors bisect the property, and no owls or other sensitive wildlife species were observed during the surveys. Weather conditions during the July 2012 field investigations consisted of winds of 5 to 10 mph, temperatures in the high 60's (°F) to high-90's (°F) (AM) with clear skies.

7.5MW PHOTOVOLTAIC SOLAR ELECTRIC GENERATING FACILITY

FIGURE 1

FOR OFFICIAL USE ONLY

LEGEND

- BSL — INDICATES BUILDING SETBACK LINE
- CONC. — INDICATES CONCRETE
- ELEC. — INDICATES ELECTRIC
- PP — INDICATES POWER POLE
- INDICATES EXISTING TREE
- 2285' — INDICATES EXISTING CONTOUR
- INDICATES EXISTING POWER LINE
- INDICATES PROPOSED 8' HIGH CHAIN LINK FENCE
- INDICATES PROPOSED FIRE ACCESS ROAD
- INDICATES PROPOSED SECURITY DEVICE
- INDICATES PROPOSED PV SOLAR TRACKER
- INDICATES PROPOSED INVERTER PAD BOUNDARY

LEGAL DESCRIPTION:

THAT PORTION OF THE EAST 1/2 OF THE SOUTHWEST 1/4 OF SECTION 29, TOWNSHIP 8 NORTH, RANGE 4 WEST, SAN BERNARDINO BASE AND MERIDIAN, ACCORDING TO GOVERNMENT SURVEY, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

PARCEL 3
COMMENCING AT A POINT THAT IS DISTANT 1320.67 FEET SOUTH ALONG THE WESTERLY LINE FROM THE NORTHWEST CORNER OF THE ABOVE DESCRIBED PROPERTY, SAID POINT ALSO BEING THE TRUE POINT OF BEGINNING; THENCE EASTERLY PARALLEL WITH THE NORTHERLY LINE OF SAID LAND A DISTANCE OF 1329.22 FEET MORE OR LESS TO THE EASTERLY LINE OF SAID LAND; THENCE SOUTHERLY ALONG THE EASTERLY LINE OF SAID LAND A DISTANCE OF 1318.8 1 FEET; THENCE WESTERLY PARALLEL TO THE NORTHERLY LINE OF SAID LAND A DISTANCE OF 1324.41 FEET MORE OR LESS TO THE WESTERLY LINE OF SAID LAND; THENCE NORTHERLY ALONG THE WESTERLY LINE OF SAID LAND A DISTANCE OF 660.28 FEET MORE OR LESS TO THE POINT OF BEGINNING.

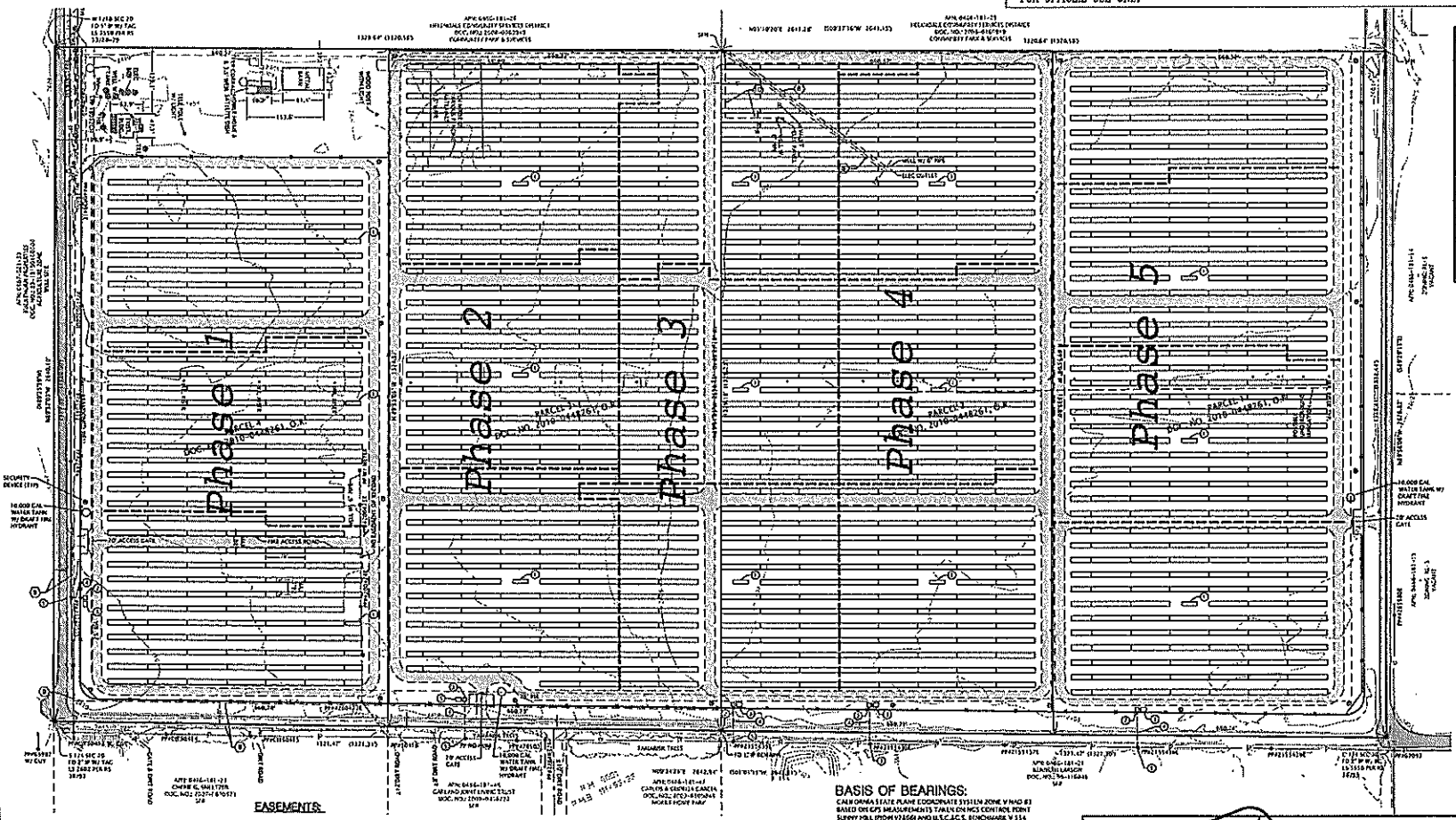
THE ABOVE LEGAL IS MADE PURSUANT TO THAT CERTAIN MINOR SUBDIVISION NO. 0378-0182 APPROVED ON DECEMBER 12, 1978 AND AS EXHIBIT B OF THAT CERTAIN RECORD OF SURVEY RECORDED ON FEBRUARY 15, 1979 IN BOOK 38, PAGE 81 OF RECORD OF SURVEYS. APN: 0466-181-61

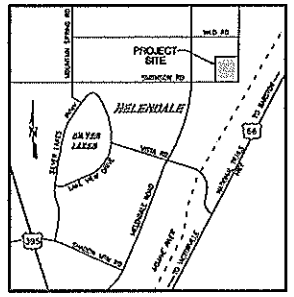
PARCEL 4:
THAT PORTION OF THE EAST 1/2 OF THE SOUTHWEST 1/4 OF SECTION 29, TOWNSHIP 8 NORTH, RANGE 4 WEST, SAN BERNARDINO BASE AND MERIDIAN, ACCORDING TO GOVERNMENT SURVEY:

EXCEPTING THEREFROM, THE NORTHERLY 1980.35 FEET MEASURED ALONG THE WESTERLY LINE OF THE ABOVE DESCRIBED PROPERTY.

THE ABOVE LEGAL IS MADE PURSUANT TO THAT CERTAIN MINOR SUBDIVISION NO 378-0182, APPROVED ON DECEMBER 12, 1978 AND AS EXHIBIT B ON THAT CERTAIN RECORD OF SURVEY RECORDED ON FEBRUARY 15, 1979 IN BOOK 38, PAGE 93 OF RECORDS OF SURVEYS.

SCALE: 1" = 100'





VICINITY MAP
N.T.S.

NOTES:

1. PROPOSED 4E SOLARON 500KW-1000 INVERTER 500KW @ 480V 3Ø AND 7-480Δ
2. PROPOSED UTILITY METERING SECTION 1 W/ 1600A MCB 480/277V 3Ø 4W BUSSED WITH (2) 800A 3P VISIBLE/LOCKABLE SWITCHES
3. PROPOSED NEW ICE SERVICE TRANSFORMER 1MVA 3Ø 60HZ 12.47-4160/277V 3Ø
4. UNDERGROUND UTILITY STUB-UP
5. POINT OF CONNECTION
6. THIS IS A TRACKING PHOTOVOLTAIC SOLAR FARM. THE PANELS ARE 68" HIGH.
7. THERE WILL BE NO MANNED STRUCTURES ON SITE.
8. THERE ARE NO TREES ON SITE.
9. ALL ACCESS & FIRE ROADS TO BE NATIVE MATERIAL COMPACTED TO 90%.
10. ALL ACCESS & FIRE ROADS TO HAVE AN INSIDE TURNING RADIUS OF 27' MINIMUM.

SITE INFO:

APN: 0466-181-59, 60, 61 & 62

AREA: 868 ACRE± GROSS

ZONING: IR-1

APPLICANT:

SUNLIGHT PARTNERS, LLC
ATTN: MARC ROBERTS
4225 E. CAMELBACK ROAD, SUITE 210
PHOENIX, ARIZONA 85018
(480) 925-1519

OWNER:

DAVID G. TAYLOR AND
LAURENE TAYLOR
16725 SANTA ROSA
APPLE VALLEY, CALIFORNIA 92307

CIVIL ENGINEER:

MERRELL JOHNSON COMPANIES
22121 HIGHWAY 18
APPLE VALLEY, CALIFORNIA 92307
(760) 240-8000

EASEMENTS:

(A) THE EFFECTS, IF ANY, OF AN EASEMENT FOR POLE LINES, CONDUITS AND INCIDENTAL PURPOSES, RECORDED DECEMBER 30, 1957 IN BOOK 4334 PAGE 145 OF OFFICIAL RECORDS. IN FAVOR OF: CALIFORNIA ELECTRONIC POWER COMPANY AFFECTS: SAID LAND

(B) THE EFFECTS, IF ANY, OF AN EASEMENT FOR 110-WAY AND INCIDENTAL PURPOSES, RECORDED DECEMBER 15, 1972 AS BOOK 5817 PAGE 1132 OF OFFICIAL RECORDS. IN FAVOR OF: COUNTY OF SAN BERNARDINO AFFECTS: SAID LAND

(C) THE EFFECTS, IF ANY, OF AN EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES, RECORDED MARCH 28, 1962 AS INSTRUMENT NO. 63-72688 OF OFFICIAL RECORDS. IN FAVOR OF: SOUTHERN CALIFORNIA EDISON COMPANY AFFECTS: SAID LAND

BASIS OF BEARINGS:

CALIFORNIA STATE PLANE COORDINATE SYSTEM ZONE V NAD 83 BASED ON GPS MEASUREMENTS TAKEN ON NGS CONTROL POINT SUPPLY HILL (PID# VZ6569 AND U.S.C.&G.S. BENCHMARK V 534 (PID# VZ6577) HAVING A GRID ZONE V BEARING BETWEEN THEM OF N14°39'59"W AND A GRID DISTANCE OF 14655.31 FT.

BENCH MARK:

U.S.C.&G.S. BENCHMARK V 534 BRASS CAP IN CONC MONUMENT LOCATED 2.7 MILES NORTH ALONG HAMPLE LANE / ROAD WHITE KNOB ROAD FROM HELENDALE SCHOOL, 4.1 HELENDALE, 0.5 MILE NORTH OF THE INTERSECTION OF WILD ROAD, AT THE SUMMIT OF A HILL, 28 1/2 FEET EAST OF THE CENTER LINE OF THE ROAD, 1.9 FEET NORTH OF A WITNESS POST, ABOUT 1 FOOT HIGHER THAN THE ROAD, AND SET IN THE TOP OF A CONCRETE POST PROJECTING 0.4 FOOT ABOVE THE GROUND.
NAVD88 ELEVATION=2475.0

PRELIMINARY
Not For Construction
CRAIG JOHNSON L.S. 7582 – EXP. 12/31/13

Merrell Johnson COMPANIES
22121 HIGHWAY 18, APPLE VALLEY, CALIFORNIA 92307
(760) 240-8000 (760) 240-1480 FAX
120 E. FRIENDLY STREET, BARSTOW, CALIFORNIA 92311
(760) 256-2068 (760) 256-8418 FAX

Know what's below. Call before you dig. 811

CONDITIONAL USE PERMIT
SITE PLAN
LAND PRO
APN: 0466-181-059, 060, 061 & 062
SAN BERNARDINO COUNTY
FOR:
SUNLIGHT PARTNERS, LLC

DRAWN BY: NM
DATE: 4/03/12
JOB NO. 3158-23
SHEET 1 OF 1

3

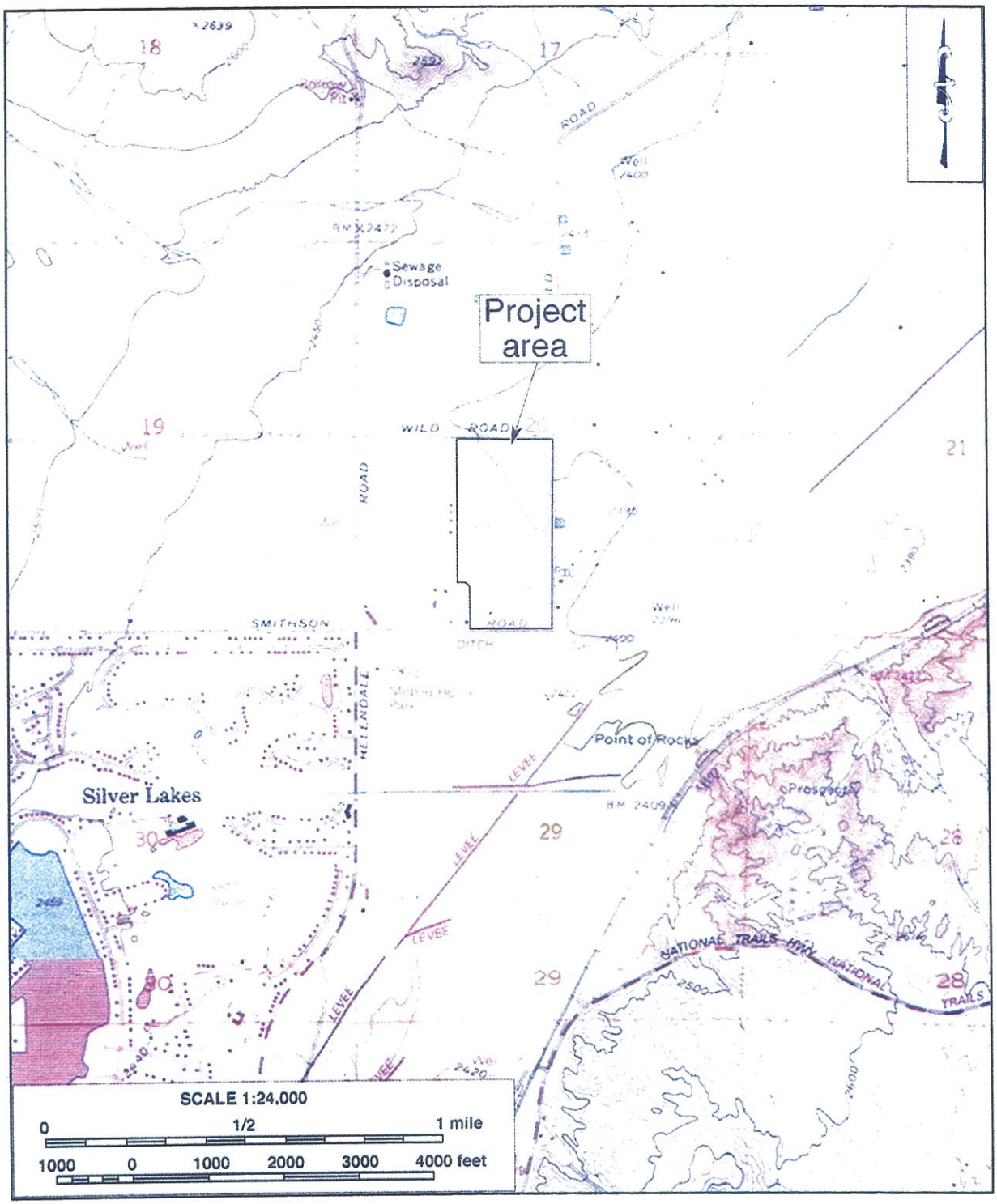


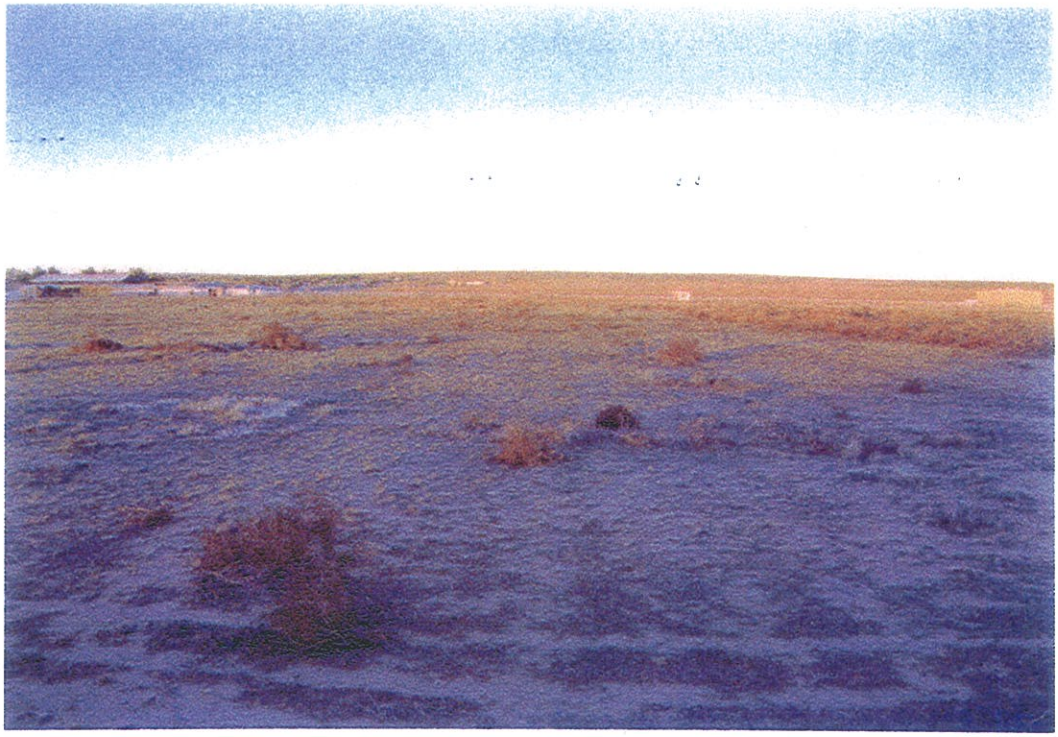
FIGURE 2

USGS Wild Crossing, CA Quad., 1973
(LandPro 8161, APN 0466-181-059, 060, 061 & 062)

CENTER OF SITE LOOKING EAST

CENTER OF SITE LOOKING NORTH

FIGURE 3
Photographs of Site
(LandPro 8162, APN 0466-181-059, 060, 061 & 062)



CENTER OF SITE LOOKING WEST

CENTER OF SITE LOOKING SOUTH

FIGURE 3, cont.
Photographs of Site
(LandPro 8162, APN 0466-181-059, 060, 061 & 062)

2.0 LITERATURE/RECORDS REVIEW FOR MOHAVE GROUND SQUIRREL

As part of the environmental process, California Department of Fish and Game (CDFG) and U.S. Fish and Wildlife Service (USFWS) data sources were reviewed prior to initiation of field surveys to determine if populations of the Mohave ground squirrel have been documented on the site or in the area surrounding the property. Based on the literature review and evaluation of the CNDDB database for the Wild Crossing quadrangle, it was determined that the site is located within the general distribution of the Mohave ground squirrel.

CNDDB records indicate that the closest known occurrence of the species is less than one mile west of the property (CNDDB, 2012). This occurrence (#18) consisted of four squirrels which were live trapped in 1977. The second closest observation (Occurrence #311) is eight miles west of the site and was live-trapped in 1994. An additional observation was made in 1988 (Occurrence #93) about 9.8 miles north of the site in 1938, 1988, and 2007 (CNDDB, 2012).

The species is known to occur in the western Mojave Desert in portions of four counties including Inyo, Kern, San Bernardino, and Los Angeles (Clark, D 1991). The distribution of the Mohave ground squirrel is quite limited as compared to the distribution of other ground squirrel species (Hall, R. 1981 in Clark, D 1991). The Mohave ground squirrel is found in several habitat types throughout the Mojave Desert including creosote bush scrub, saltbush scrub, and Joshua tree woodland communities. Degradation and destruction of the species' habitat and isolation of individual populations appear to be the primary factors in the species' decline (Clark, D. 1991).

3.0 METHODOLOGY

The habitat assessment was performed on July 28, 2012 by Ryan Young. As per CDFG requirements, Mr. Young evaluated the vegetation on the site as well as in the surrounding area to determine if the dominant plant community in the area was representative of those associated with the Mohave ground squirrel. In addition to the field investigations, a background database search was performed using the CNDDB Rarefind 3 along with supplemental references for the species, including the CDFG Mohave ground squirrel survey Guidelines.

Field investigations included walking meandering transects throughout the site during which a vegetation list was compiled, and the site evaluated for the presence of plants that are frequently utilized by the squirrel for food. All transects were walked at a pace that allowed careful observations along the transect routes for the presence of any small mammal burrows. Additional field notes were recorded regarding native plant assemblages, wildlife sign, and human affects in order to determine the presence or absence of suitable Mohave ground squirrel habitat. Surveys were performed on the site and in the surrounding area from about 0730 to about 1130 hours.

Temperatures during the July survey were in the high 60's (AM, °F) to high 90's (PM, °F), wind speeds of about 5 to 10 mph (mainly from the south), and clear skies. No precipitation was recorded during the survey.

Limitations:

The results of the habitat assessment and the results presented in this report do not constitute authorization for the "take" of the Mohave ground squirrel or any other listed or sensitive wildlife species. The authorization to impact the species can only be granted by CDFG. If Mohave ground squirrels are observed during future project activities, the activities should cease immediately and CDFG should be contacted to discuss mitigation measures which may be required for the species.

4.0 GENERAL BIOLOGICAL SURVEY RESULTS

The property has been previously utilized for several years for farming and currently supports a fallow agricultural field and disturbed grassland (Figures 3 and 4). The limited number of perennials which occur on the site included saltbush (*Atriplex canescens*), wheelscale (*A. elegans*), bush seepweed (*Sueda moquinii*), yellow-green matchweed (*Gutierrezia sarothrae*), and grasses (*Bromus* sp.) which were somewhat uniformly distributed throughout the site. Annuals identified included Russian thistle (*Salsola tragus*), fiddleneck (*Amsinckia tessellata*), erodium (*Erodium cicutarium*), and alfalfa (*Medigo sativa*) (Figure 3) (Appendix A, Table 1). Figure 4 depicts the general biological resources present on the site and in the surrounding area.

Ravens (*Corvus corax*), mourning doves (*Zenaida macroura*), and song sparrows (*Melospiza melodia*) were the only wildlife observed during the field investigations. Desert cottontails (*Sylvilagus auduboni*) and jackrabbits (*Lepus califonica*) are also common in the area and may occur on the site. Likewise, coyotes (*Canis latrans*), which is the most common carnivore in the desert, occasionally traverses the site during hunting activities as indicated by the presence of scats and tracks. Other common species which have been observed in the general area during other recent surveys included California ground squirrels (*Spermophilus beecheyi*), side-blotched lizards (*Uta stansburiana*), western whiptail lizards (*Cnemidophorus tigris*), and desert spiny lizards (*Sceloporus magister*) (Appendix A, Table 2). These species are expected to inhabit the site and/or adjacent areas. No distinct wildlife corridors were identified on the site or in the immediate surrounding area, and no breeding activities were observed among any of the wildlife observed.

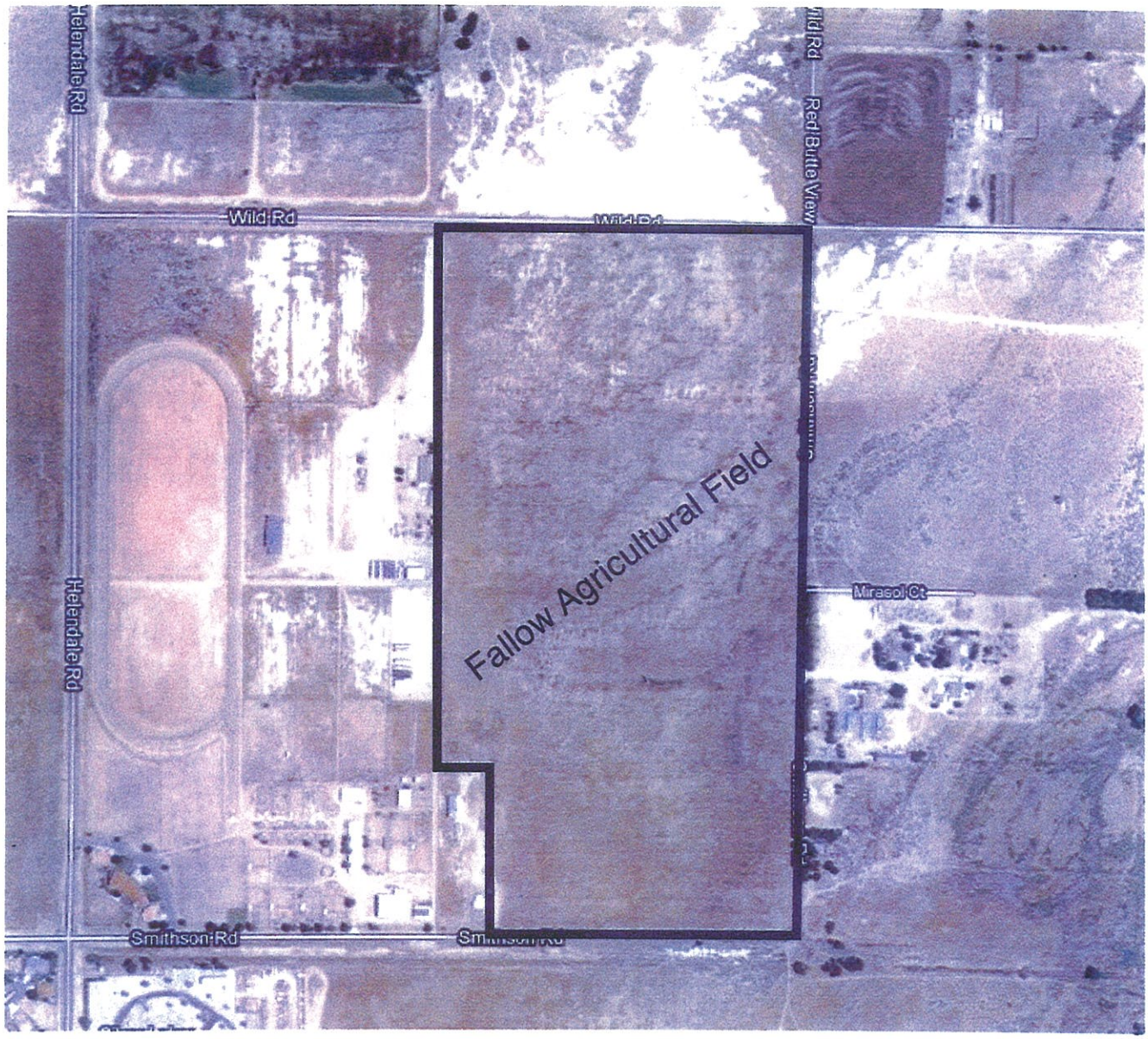


FIGURE 4
Biological Resources Map
(LandPro 8162, APN 0466-181-059, 060, 061 & 062)

5.0 RESULTS – MOHAVE GROUND SQUIRREL

The site does not support suitable habitat for the Mohave ground squirrel based on the habitat assessment conducted on the site on July 28, 2012. This conclusion was based on the following criteria. (Note: The local CDFG representative, Ms. Becky Jones, should be contacted for concurrence with this conclusion (rjones@dfg.ca.gov).

1. Historic agricultural practices have made the site unsuitable for the species;
2. Edge efforts from surrounding residential area and nearby alfalfa fields; and
3. Lack of native shrubs.

Regardless of the results of this habitat assessment, Mohave ground squirrels cannot be taken under State law. The survey report and any mitigation included do not constitute authorization for incidental take of the species. If the species is observed during future site activities, all on-site activities should cease immediately and CDFG should be contacted. The Mohave ground squirrel has been listed by the California Department of Fish and Game as a threatened species, thereby giving the animal protection under the California Endangered Species Act.

6.0 IMPACTS AND RECOMMENDATIONS

Construction of the proposed solar project will not have a direct or indirect impact on the species or potential Mohave ground squirrel habitat. The site does not support suitable habitat for the species and populations of the species are not expected to occur on the site. Therefore, the proponent will not need to apply for an Incidental Take Permit (2081 permit) from CDFG or provide any mitigation fees. However, the local CDFG representative (Becky Jones, rjones@dgfg.ca.gov) should be contacted for concurrence with this conclusion.

If the site is modified by grading or otherwise disturbed prior to project approval and prior to acquisition of the Incidental Take Permit, which results in the loss of suitable habitat for the species, CDFG and the County Building and Safety Department should be notified. Such action prior to project approval will violate the State endangered species law and may be considered grounds for denial of the project. Mitigation and restoration plans will also be required under such actions.

7.0 PROPOSED MITIGATION MEASURES

The site does not support suitable habitat for the Mohave ground squirrel; therefore, no mitigation measures are proposed at the present time. However, if the species is observed during future development activities, CDFG should be contacted to discuss mitigation measures which may be required.

8.0 REFERENCES

California Department of Fish and Game
1990 California's Wildlife, Volumes 1, 2, and 3. Sacramento.

California Department of Fish and Game
2012 Natural Diversity Data Base, Rarefind 3. Sacramento

Holing, Dwight
1998 California Wild Lands. Chronical Books. San Francisco, CA. 211 pp.

Holland, Robert F.
1986 Preliminary Description of the Terrestrial Natural Communities of California.Prepared for the California Natural Diversity Data Base. California Department of Fish and Game. Sacramento, California. 160 pp.

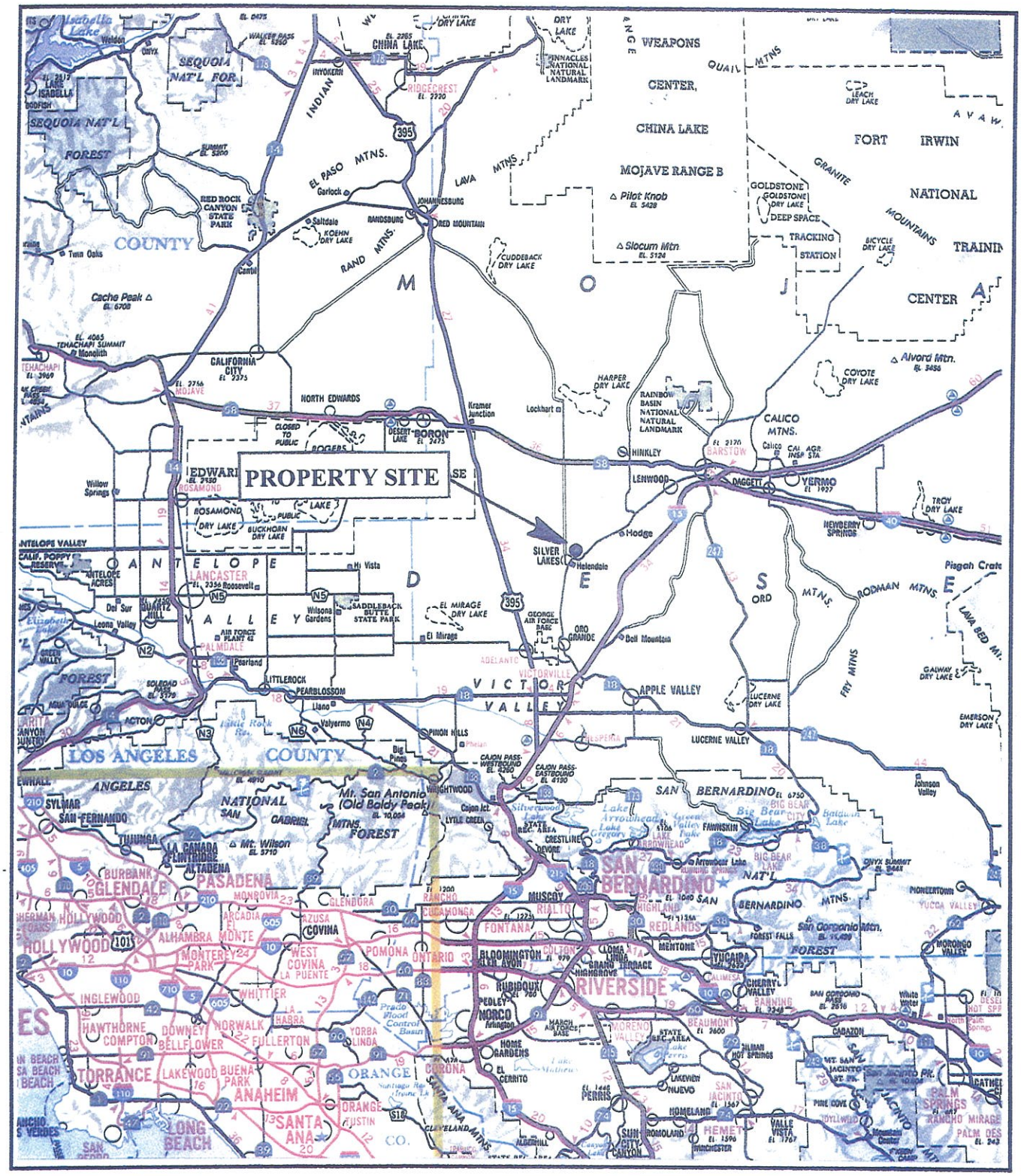
Johnson, H.
1976 vegetation and Plant Communities of Southern California Deserts- a functional view. In Symposium proceedings: Plant communities of Southern California. June Latting, editor. California Native Plant Society, Spec. No. 2 Berkeley, CA.

LIST OF TABLES

Mohave ground squirrel occurrences within about ten miles of the site based on California Natural Diversity Data Base (2012).

Name	Listing Status	Habitat Requirements	Presence/Absence	Comments
Mohave ground squirrel (*Spermophilus mohavensis*)	Fed: None State: T	Desert scrub	Site does not support suitable habitat for the species.	A. Occurrence #18; less than one mile west of site. B. Occurrence #311; 8 miles west of site. C. Occurrence #93; 9.8 miles north of site.

LIST OF FIGURES

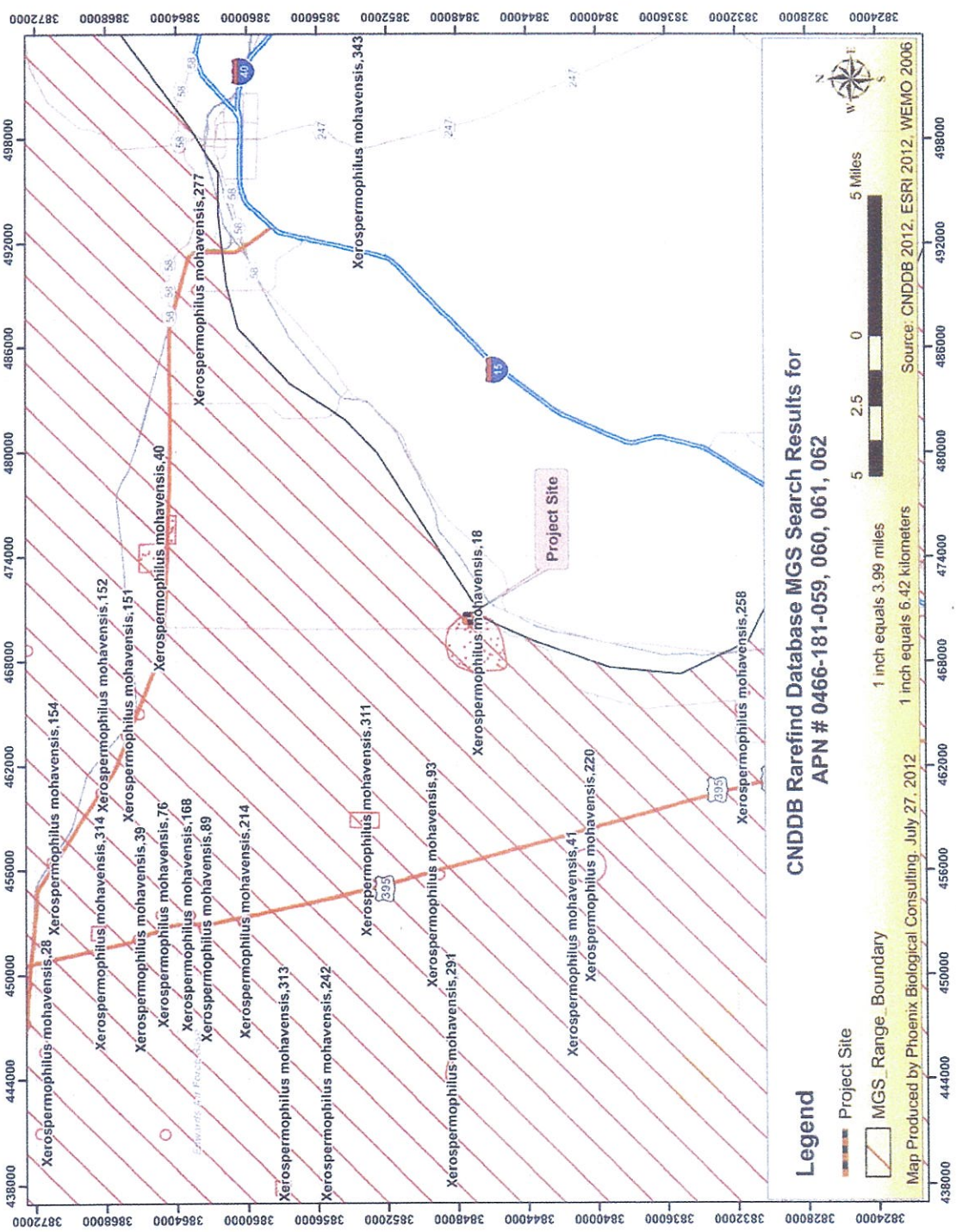


VICINITY MAP

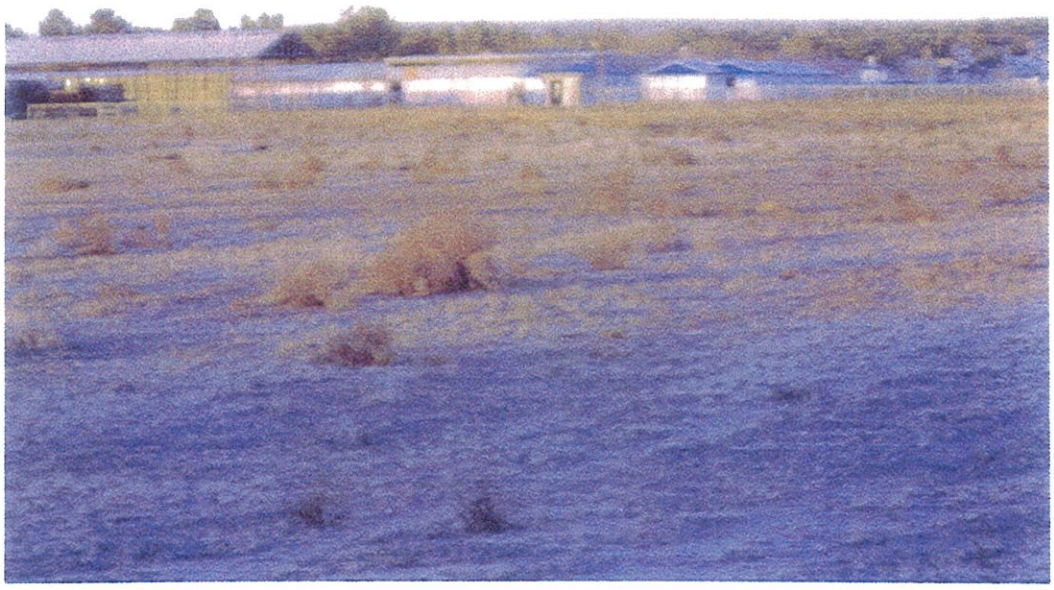
(LandPro 8161, APN 0466-181-059, 060, 061 & 062)
(Source: ACSC Map Source, 2012)

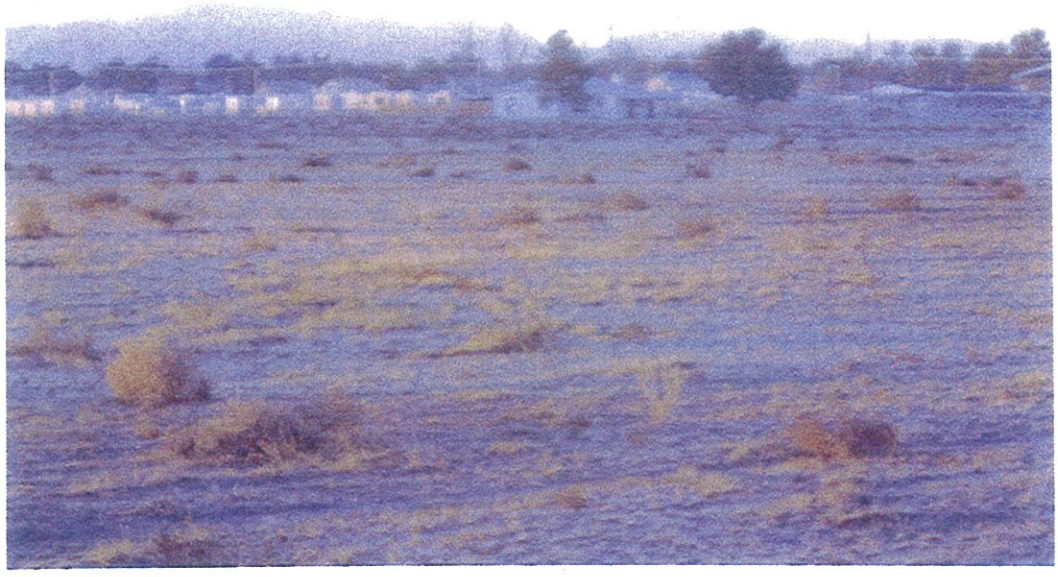
N

CNDDB Rarefind 3 Results



SITE PHOTOGRAPHS





Photographs of Site
(LandPro 8162, APN 0466-181-059, 060, 061 & 062)

APPENDIX A

Flora and Fauna Compendia

Table 1 - Plants observed on the site and known to occur in the immediate surrounding area.

Common Name	Scientific Name	Location
Yellow-green matchweed	*Gutierrezia sarothrae*	On-site
Fiddleneck	*Amsinckia tessellata*	"
Brome grasses	*Bromus sp.*	"
Saltbush	*Atriplex canescens*	"
Wheelscale	*A. elegans*	"
Bush seepweed	*Sueda moquinii*	"
Russian thistle	*Salsola tragus*	"
Erodium	*Erodium cicutarium*	"
Alfalfa	*Medigo sativa*	"

Table 2 - Wildlife observed on the site and those species expected to occur in surrounding area.

Common Name	Scientific Name	Location
Common raven	*Corvus corax*	On-site
Song sparrow	*Melospiza melo*dia	"
Mourning dove	*Zenaida macroura*	"
Side-blotched lizard	*Uta stansburiana*	May occur on-site.
Western whiptail lizard	*Cnemidophorus tigris*	"
Desert spiny lizard	*Sceloporus magister*	"
Desert cottontail rabbit	*Sylvilagus auduboni*	"
Coyotes	*Canis latrans*	"
California ground squirrel	*Spermophilus beecheyi*	"

Note: The above Tables are not comprehensive lists of every plant or animal species which may occur in the area, but are a list of those common species which were identified on the site during the one-day survey or which are common in the region.

Certification:

I hereby certify that the statements furnished above and in the attached exhibits present the data and information presented are true and correct to the best of my knowledge and belief. Field work conducted for this assessment was performed by me or under my direct supervision. I certify that I have not signed a non-disclosure or consultant confidentiality agreement with the project applicant or applicant's representative and that I have no financial interest in the project.

Date: July 30, 2012 Signed: _____
Report Author

Field Work Performed By: _____