HABITAT ASSESSMENT FOR MOHAVE GROUND SQUIRREL

DUKOMO DEVELOPMENT

CONDITIONAL USE PERMIT APN 3132-011-01, 02 & PORTION OF APN 3132-011-03

SAN BERNARDINO COUNTY, CALIFORNIA

(USGS Adelanto, CA Quad.; Township 5 North, Range 5 West, Section 18)

Owner/Applicant

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Prepared by:

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Project No: RCA#2013-62A

September 5, 2013 (Date Report Prepared)

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EXECUTIVE SUMMARY

A habitat assessment was conducted for the Mohave ground squirrel on an 11.9-acre parcel located at the southeast corner of the Koala Road and Mojave Drive in San Bernardino County (Section 18, Township 5 North, Range 5 West). The site supports an undisturbed creosote bush (*Larrea tridentata*) community typical of this portion of the Mojave Desert (Figures 1, 2, and 3). Co-dominants consisted of saltbush (*Atriplex canescens*), cottonthorn (*Tetradymia spinosa*), rabbitbrush (*Chrysothamnus depressus*) and yellow-green matchweed (*Gutierrezia sarothrae*).

The property is located within the known distribution of the Mohave ground squirrel; and a habitat assessment was previously conducted on April 16, 2010. The habitat assessment was performed by Ryan Young, who holds a Memorandum of Understanding (MOU) from California Department of Fish and Wildlife (CDFW) for the species. The site was re-evaluated on September 5, 2013 and it was determined that the habitat present on the site has not changed since 2010. The site supports suitable habitat for the Mohave ground squirrel based on various criteria outlined in the following sections. However, there is a low probability that the species occurs on the property based on the very low population levels of Mohave ground squirrels in the area and the absence of any documented populations in adjacent habitats. CDFW should be contacted for concurrence with this conclusion (Eric Weiss, eweiss@dfg.ca.gov).

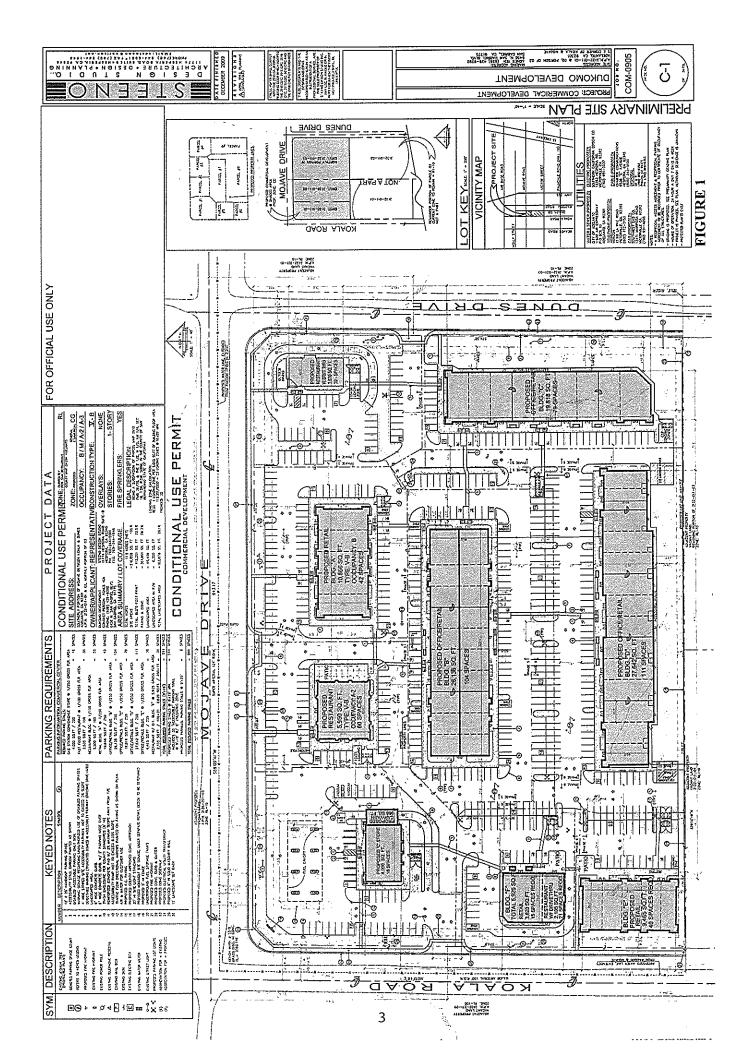
1.0 PROJECT AND PROPERTY DESCRIPTION

The property is approximately 11.9-acres in size (gross) and is located in the Adelanto area about three miles west of Highway 395 at the southeast corner of Koala Road and Mojave Drive in San Bernardino County (T5N, R5W, Section 18) (Figures 1, 2, 3, and 4). The property consists of relatively flat terrain with no prominent ridges or hills with an elevation of approximately 3,080 to 3,090 feet, MSL. The soils consisted primarily of sandy-loam. Temperatures during the September 5, 2013 surveys were in the low 60's (°F) (AM) to mid 90's (°F) (PM) with winds of 0 to 5 mph. Cloud cover was estimated at 0 to 5 percent. No rare or sensitive wildlife habitats were observed, and no distinct wildlife corridors bisect the property.

The site is surrounded by vacant lands; although, there is a school located about 0.5-miles northeast of the site and a few single-family dwellings are also located in the area. The site supports a creosote bush (Larrea tridentata) community with co-dominants saltbush (Atriplex canescens), cotton-thorn (Tetradymia spinosa), rabbitbrush (Chrysothamnus depressus), and yellow-green matchweed (Gutierrezia sarothrae) (Figures 3 and 4). Other perennials scattered throughout the site included ephedra (Ephedra nevadensis), Joshua tree (Yucca brevifolia), and paperbag plant (Salazaria mexicana). Annuals included erodium (Erodium texanum), bunchgrass (Phleum pretense), Indian ricegrass (Oryzopsis sp.), primrose (Primula sp.), and buckwheat (Eriogonum fasciculatum). Section 4.0 provides a more detailed discussion of the biological resources. The project map (Figure 1) is provided below and the USGS topographic map is provided in Figure 2. Figure 3 provides photographs of the site. See Appendix A for flora and fauna compendia.

The legal description is provided below.

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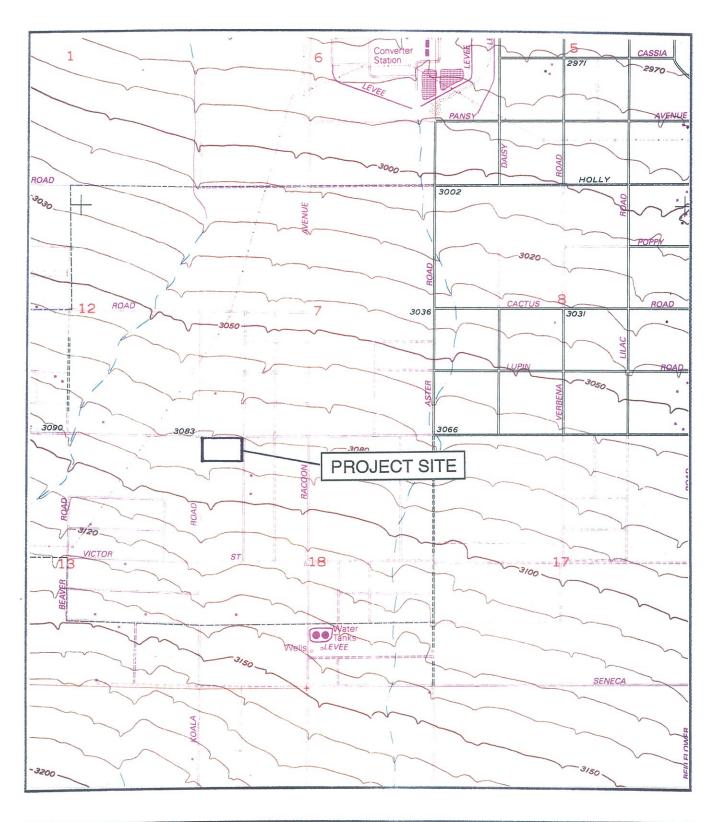
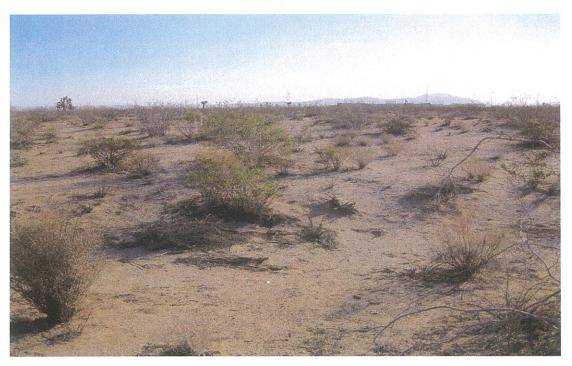
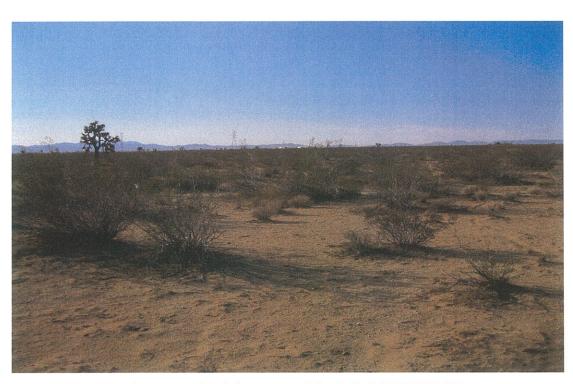


FIGURE 2
PROPERTY LOCATION
(Dukomo Development)
(Source: USGS Adelanto, CA Quad., 1956)



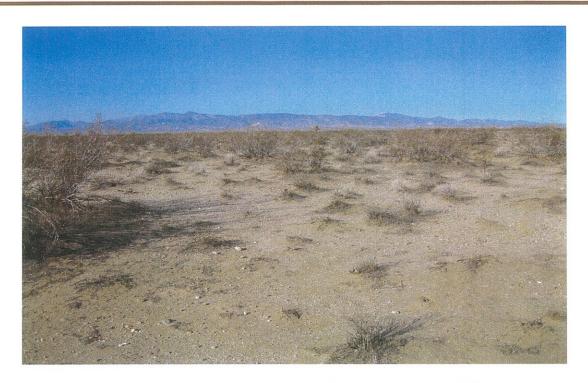


SOUTHWEST CORNER LOOKING NORTHEAST

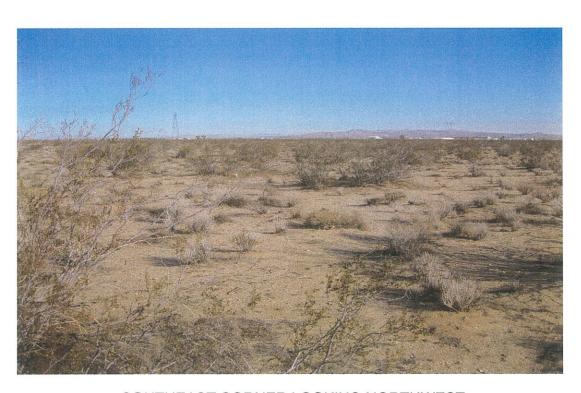


NORTHWEST CORNER LOOKING SOUTHEAST

FIGURE 3 SITE PHOTOGRAPHS (DUKOMO DEVELOPMENT)



NORTHEAST CORNER LOOKING SOUTHWEST



SOUTHEAST CORNER LOOKING NORTHWEST

FIGURE 3, cont.
SITE PHOTOGRAPHS
(DUKOMO DEVELOPMENT)

2.0 LITERATURE/RECORDS REVIEW FOR MOHAVE GROUND SOUIRREL

As part of the environmental process, California Department of Fish and Wildlife (CDFW) 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 Adelanto quadrangle, it was determined that the site is located within the general distribution of the Mohave ground squirrel.

The CNDDB records (2010) indicate the closest known Mohave ground squirrel (MGS) occurrence is about two miles northwest of the property (Figure 6) (CNNDB, 2010). This specimen was observed in 1954 (Occurrence #301) and is currently stored at the Kansas University Museum (CNDDB, 2007). The second closest occurrence is about 1.9 miles to the northeast and was observed in 2005 (Occurrence #318). This juvenile Mohave ground squirrel was trapped and released during a protocol trapping survey performed for another project. The third closet record (#11) from 1977 is 4.4 miles to the northeast. This specimen was trapped and is currently stored at the LA County Museum.

The vegetation community present on the site is a creosote bush (Larrea tridentata) community, which is typically associated with the species (See Section I - 4.0 for a detailed description of the vegetation community.). The Mohave ground squirrel has been listed by CDFW as a threatened species, thereby giving it protection under the California Endangered Species Act. 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 initially performed on April 16, 2010 by Ryan Young with an additional assessment conducted on September 5, 2013. As per CDFW 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.

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 CDFW. If Mohave ground squirrels are observed during future project activities, the activities should cease immediately and CDFW should be contacted to discuss mitigation measures which may be required for the species.

4.0 GENERAL BIOLOGICAL SURVEY RESULTS

The site supports a creosote bush (Larrea tridentata) community with co-dominants saltbush (Atriplex canescens), cotton-thorn (Tetradymia spinosa), rabbibrush (Chrysothamnus depressus), and yellow-green matchweed (Gutierrezia sarothrae) also present throughout the property (Figures 3 and 4). Other perennials scattered throughout the site included ephedra (Ephedra nevadensis), Joshua tree (Yucca brevifolia), and paperbag plant (Salazaria mexicana). Annuals included erodium (Erodium texanum), bunchgrass (Phleum pretense), Indian ricegrass (Oryzopsis sp.), primrose (Primula sp.), and buckwheat (Eriogonum fasciculatum). Table 1 provides a compendium of plants observed on the site and in the ZOI (Appendix A).

Jackrabbits (Lepus californicus) were the only mammals observed during the April surveys, and other species expected to occur on the site include antelope ground squirrels (Ammospermophilus leucurus) and Merriam's kangaroo rats (Dipodomys merriami). Coyotes (Canis latrans) are expected to occasionally traverse the site during hunting activities and several scats were observed. Side-blotched lizards (Uta stansburiana) were identified during the field investigations and western whiptail lizards (Cnemidophorus tigris) and desert spiny lizards (Sceloporus magister) are also common in the region and may inhabit the site. Ravens (Corvus corax), sage sparrows (Amphispiza belli), and horned lark (Eremophila alpestris) were the only birds identified. Table 2 provides a compendium of wildlife species observed on the property (Appendix A).



FIGURE 4 BIOLOGICAL RESOURCES MAP (DUKOMO DEVELOPMENT)

5.0 RESULTS - MOHAVE GROUND SQUIRREL

The site is a rectangular-shaped polygon approximately 11.9-acres in size located at the southeast corner of Koala Road and Mojave Drive in the Adelanto area of San Bernardino County (Section 18, Township 5 North, Range 5 West) (Figures 1 and 2). The vegetation community consists of an undisturbed creosote bush community and has been previously described in Section I - 4.0. The topography consists of relatively flat terrain with no prominent topographic features (Figures 2 and 4).

Based on the results of the habitat assessment, as well as the literature review search, it has been determined that the site supports suitable habitat for the Mohave ground squirrel. However, there is a very low probability that the species inhabits the site based on the low population levels in the region, the small size of the site, and the absence of any documented sightings in the immediate area. Based on agency requirements, CDFW should be contacted for concurrence with this conclusion. Regardless of the results of the 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 CDFW should be contacted.

6.0 IMPACTS AND RECOMMENDATIONS

Construction of the proposed project is not expected to have a direct or indirect impact on the species. The site does support suitable habitat for the species; however, it is very unlikely the species occurs on the site based on the absence of any documented sightings in the immediate area, low population levels in the region, and the small size of the site. Based on the assessment, it is unlikely an Incidental Take Permit (2081 permit) will be required. CDFW 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

Based on the results of the assessment, no mitigation measures are proposed at the present time. However, if the species is observed during future development activities, CDFW 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
2013 Natural Diversity Data Base. 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.

TABLES

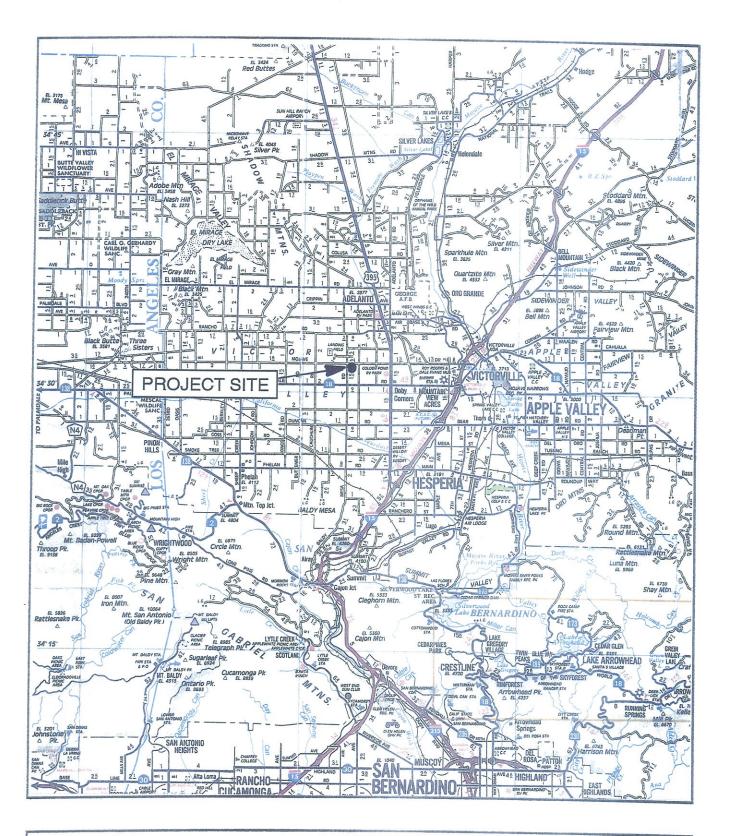
Mohave Ground Squirrel Occurrence Table

Mohave ground squirrel occurrences within five miles of the site based on California Natural Diversity Data Base (2013).

Name	Listing Status	Habitat Requirements	Presence/Absence	Comments
Mohave ground squirrel (Spermophilus mohavensis)	Fed: None State: T	Desert scrub	Site does supports suitable habitat for the species. Native vegetation evenly distributed throughout the site.	A. Occurrence #301; 2 miles northwest of site. B. Occurrence #318; 1.9 miles northeast of site. C. Occurrence #11; 4.4 miles northeast of site.

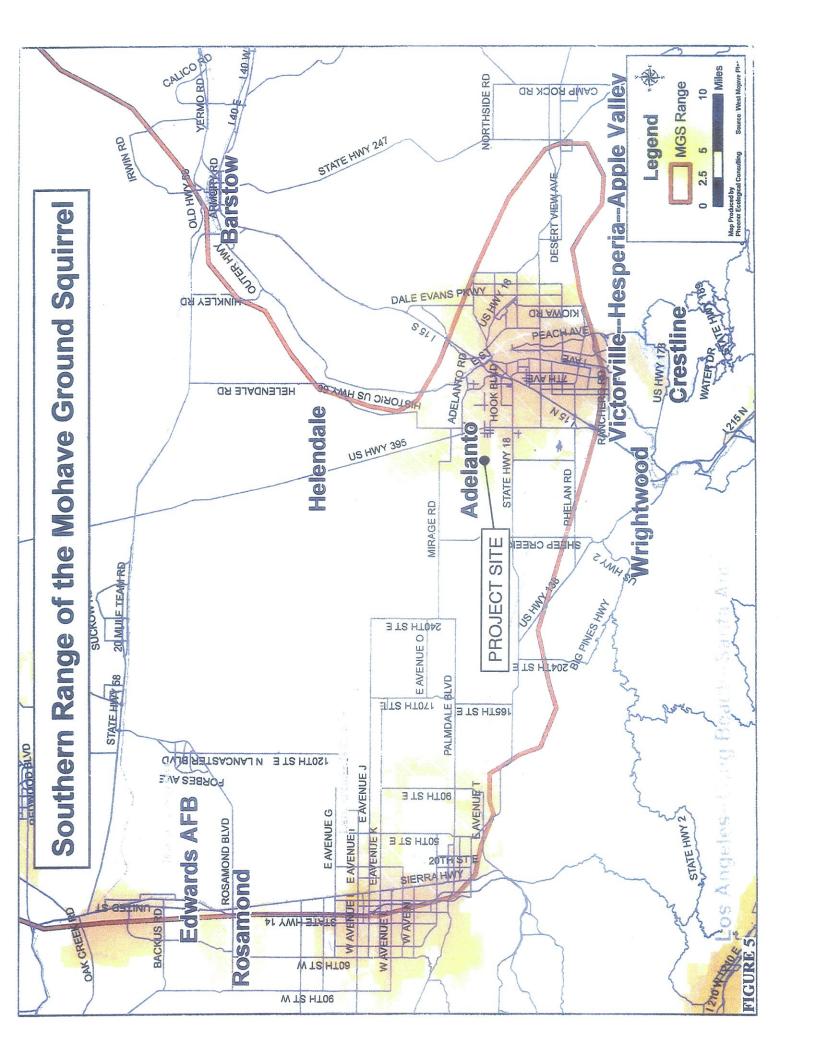
LIST OF FIGURES

Vicinity Map Mohave Ground Squirrel Distribution Map

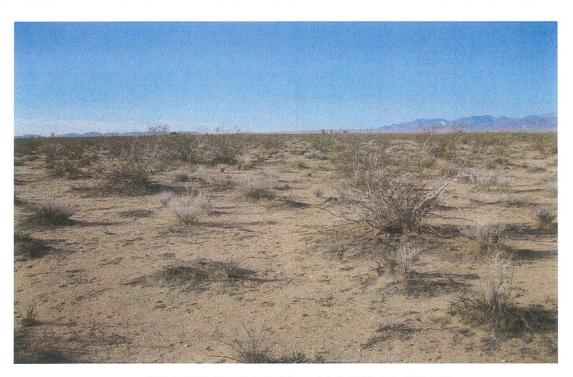


VICINITY MAP (Dukomo Development) (Source: ACSC Map Source, 2013)

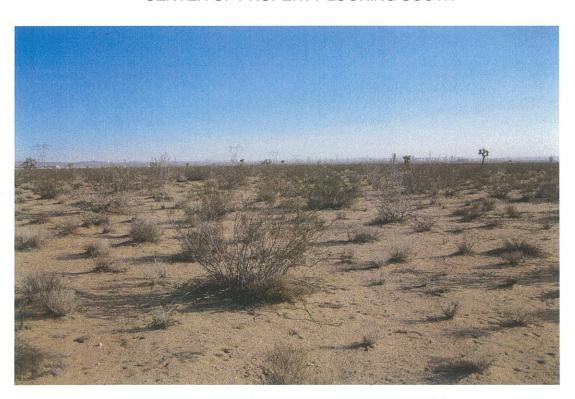








CENTER OF PROPERTY LOOKING SOUTH



CENTER OF PROPERTY LOOKING NORTH

SITE PHOTOGRAPHS (DUKOMO DEVELOPMENT)

APPENDIX A

Flora and Fauna Compendia

Table 1 - Plants observed on the site.

Common Name	Scientific Name	Location
Erodium	Erodium texanum	On-site and off-site
Schismus	Schismus barbatus	¢¢
Buckwheat	E. fasciculatum	¢¢.
Brome grass	Bromus sp.	٠.,
Fiddleneck	Amsinckia tessellata	66
Rabbitbrush	Chruysothanus depressus	دد
Saltbush	Atriplex canescen	،
Creosote bush	Larrea tridentata	¢¢
Yellow-green matchweed	Gutierrezia sarothrae	çç
Joshua tree	Yucca brevifolia	‹‹
Bunchgrass	Phleum sp.	٠,٠

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	Observed on-site.
Sage sparrow	Amphispiza belli	cc
Mourning dove	Zenaida macroura	دد
Western kingbird	Tyrannus verticalis	cc
Western whiptail lizard	Cnemidophorus tigris	May occur on site.
Side-blotched lizard	Uta stansburiana	Observed on-site.
Antelope ground squirrel	Ammospermophilus May occur on-s	
Desert spiny lizard	Sceloporus magister	£ £
California ground squirrel	Spermophilus beecheyi	۲,
Coyote	Canis latrans	¢¢.
Merriam's kangaroo rat	Dipodomys mohavensis	CC

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 have been identified on the site or in the region by biologists from RCA Associates, LLC, or which are common species 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 report 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.

September 5, 2013

Signed:

Report Author

Cordially,

Date:

Ryan Young

Phoenix Biological Consulting

PO Box/720949

Pinon Hills, CA 92372-0949