

APPENDIX 9

Victorville 2 Hybrid Power Project

FOCUSED TRAPPING SURVEY FOR MOJAVE GROUND SQUIRREL



**Focused Surveys for the Mohave
Ground Squirrel for the
Victorville 2 Hybrid Power Plant Project**

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1.0 INTRODUCTION

AMEC Earth and Environmental (AMEC) was contracted by ENSR to conduct focused surveys for the Mohave Ground Squirrel (*Spermophilus mohavensis*), at the site of the proposed Victorville 2 Hybrid Power Project (VV2 Project) in the City of Victorville, San Bernardino County, California. As shown on Map 1, the Project is comprised of a 250 acre parcel that would accommodate the power plant, plus construction “laydown” areas to the west of and south of the plant site. Areas approximately 49 acres and 43 acres in size were defined (and surveyed) for potential use as laydown areas (see Map 1), but the Project actually is expected to utilize 30-acre and 20- acre portions of the larger areas for this purpose during construction. Finally, as shown on Map 1, the Project site for the Mohave Ground Squirrel (MGS) survey also includes a number of linear features: a sanitary wastewater disposal pipeline and reclaimed water supply pipeline, both extending between the plant site and the Victor Valley Wastewater Reclamation Authority (VWVRA) treatment plant approximately one mile to the southeast, and an electrical transmission line route in a new right-of-way (ROW) extending south approximately three miles between the plant site and a point near the existing High Desert Power Project (HDPP) site where the VV2 transmission line will be installed on the existing transmission structures that connect the output of the HDPP with the regional electrical grid.

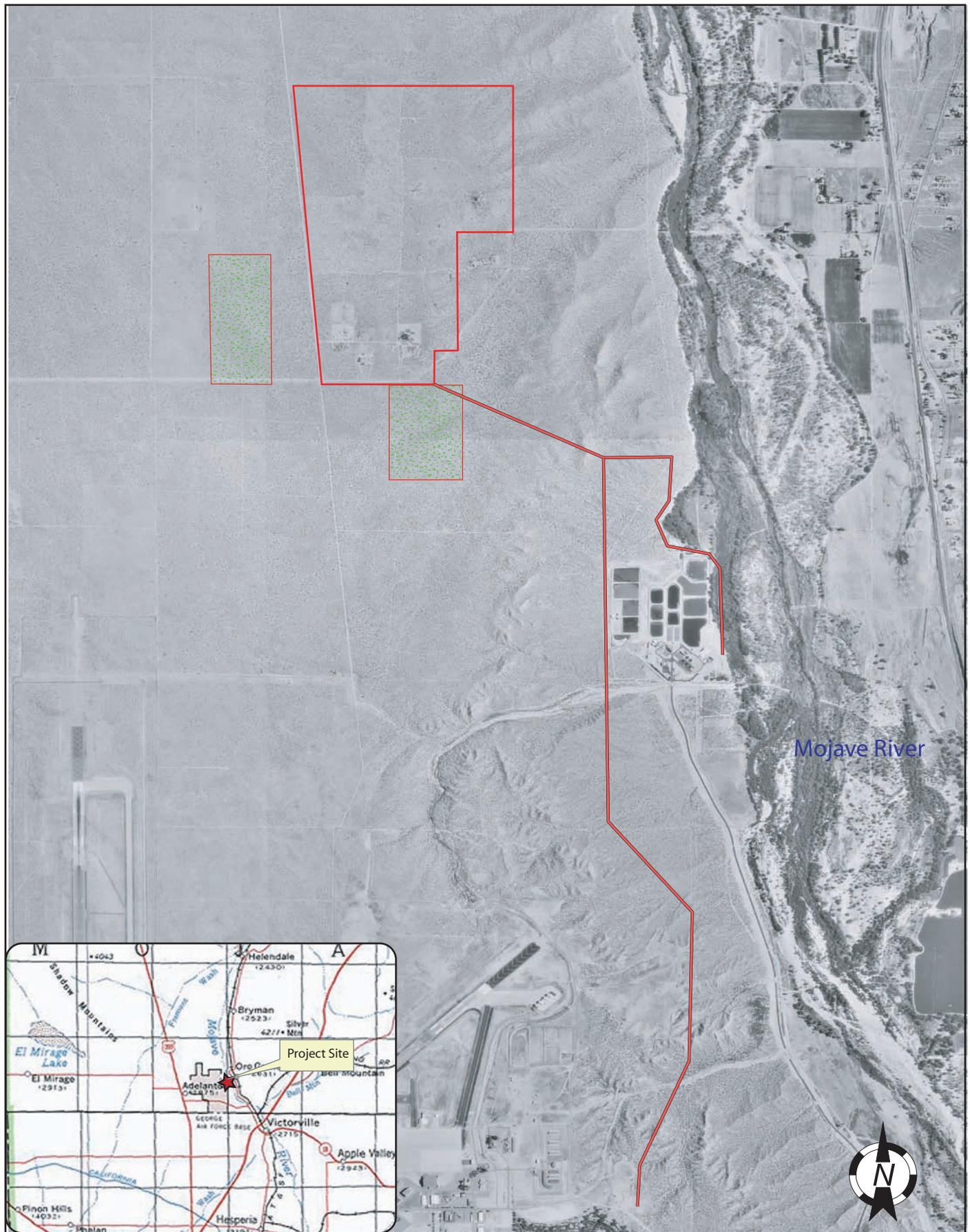
The three linear features (sanitary wastewater, water supply, transmission lines) leave the southeast corner of the power plant site in the same ROW. The reclaimed water supply line route branches off to the east to an entry point on the east side of the VWVRA site where the Project line will be connected to the VWVRA reclaimed water production system, while the sanitary wastewater line and transmission line routes run down the west side of the VWVRA plant site. The Project’s sanitary line connects with an existing sewer lateral near the southern end of the VWVRA plant site, while the transmission line route continues further to the south to the location where it joins the HDPP transmission line near the HDPP facility.

The topography of the VV2 Project site varies from relatively flat at the power plant site and laydown areas, to rolling hills along the linears. Elevations in the MGS trapping areas range from approximately 2,620 to 2,800 feet. The site is open desert habitat. Rural residences and abandoned residences are scattered throughout the area, especially on the power plant site. The power plant site also contains areas of trash dumping, including a few large areas with lumber waste and other debris. Surrounding land use is primarily natural desert habitat, with the exception of the VWVRA plant site to the southeast of the plant site.

This report presents the findings of focused surveys for the MGS, which included live trapping. An historic record of the squirrel is from on or near the southern laydown area in 1987 (CNDDDB data). The nearest recent record for the MGS is from along U.S. Highway 395, approximately three miles west-southwest of the project site in 2004 (S. Montgomery pers. comm.; T. Moore pers. comm.).

1.1 Background on the Mohave Ground Squirrel

The Mohave Ground Squirrel is restricted to the western Mojave Desert, and occurred historically from near Palmdale on the southwest, southeast to Lucerne Valley, northwest to



Map 1. Victorville 2 Hybrid Power Plant: Vicinity & Location

0 3,000
Feet

- Victorville 2 Site
- Construction "Laydown" Areas
- Site Linear

Map Source: MAPTECH Arial helendale



Olancha, and northeast to the Avawatz Mountains (Gustafson 1993). There are a couple of recent records of the species in the southern portion of its range (Palmdale to Victorville area), including the record along U.S. Highway 395 mentioned above, and a juvenile captured in the Victorville/Hesperia area during July 2005 (approximately 13 miles south of the VV2 Project). Urbanization and other impacts to its desert habitats have led to its near extirpation from this area.

The Mohave Ground Squirrel is about nine inches long, and is pale brown dorsally, with cream colored underparts. It lacks obvious stripes or spots. It is active only seasonally, spending much of the year in torpidity underground, emerging to feed following winter and spring rains. It feeds on the leaves and seeds of forbs and shrubs, with perennial shrubs forming a large part of the diet, especially when annual forbs are not available.

Habitats used by this species include Creosote Bush scrub, various types of saltbush scrub, and Joshua Tree woodland. The topography throughout its range is primarily flat, but the squirrel can also occur on gentle to moderate slopes, especially in the northern portion of its range.

Since 1971, the Mohave Ground Squirrel has been on the State of California's Threatened Species list. Loss and degradation of habitat is the primary reason this species is threatened; it is especially sensitive to adverse impacts to its habitats since it appears to have been patchily distributed, even in historic times.

2.0 METHODS

Surveys for the Mohave Ground Squirrel are regulated by the California Department of Fish and Game (CDFG). The latest guidelines for such surveys are dated January 2003 (CDFG 2003). Requirements of the guidelines are that trapping surveys only be conducted by biologists authorized by a Memorandum of Understanding with CDFG. The guidelines specify that visual surveys precede trapping surveys, and that the visual surveys be conducted between 15 March and 15 April.

If the visual surveys do not reveal the presence of the Mohave Ground Squirrel, trapping surveys are then required. Trapping grids of 100 traps (10 rows of 10 traps) are required for each 80 acres, or fraction thereof. For linear projects, grids consisting of four rows of 25 traps, with similar trap spacings, must be used; one linear grid is required for each mile of a project alignment. Traps must be 12 inch long Sherman[®] live-traps, and must be spaced 35 meters apart. The recommended bait is a mixture of rolled oats, birdseed, and peanut butter. Each grid must be trapped for at least five consecutive days. In all, three 5-day trapping surveys must be performed, one each during the periods of 15 March through 30 April, 1 May through 31 May, and 15 June through 15 July. Further requirements of the survey guidelines are that the traps be shaded with cardboard shades, and that traps be opened one hour after sunrise and closed one hour before sunset. The air temperature one foot above the ground (in the shade) must be closely monitored, and traps must be closed if the temperature exceeds 90° F. Traps must remain closed until the temperature drops below 90° F.

Due to the size of the project area, along with previous habitat disturbances, it was determined that three grids were sufficient to adequately sample the VV2 power plant site, rather than four, as would be required by strict interpretation of the trapping protocol. Also, it was determined that two linear grids would sufficiently sample the water supply/wastewater pipeline and transmission line alignments, rather than the three grids that would be necessary under strict interpretation of the trapping protocol. One grid was established for each of the two laydown areas, for an overall total of seven trapping grids for the VV2 Project site. A "Plan of Work," outlining MGS trapping protocol, as well as other biological field work, was submitted to Ms. Tonya Moore, CDFG Environmental Scientist, in early March 2006. A copy of the Plan of Work is attached to this report as Appendix 3. Ms. Moore, in an email to Stephen J. Myers dated 8 May 2006, approved the methods proposed. The text of the email follows:

"The Department concurs with your proposal to modify Spring 2006 Mohave ground squirrel (MGS) surveys as outlined in the attached Plan of Work for the Victorville 2 Power Plant. You have adjusted the grids to best fit the property and to ensure that the habitat most likely to have MGS is covered.

Please use this e-mail and the attached Plan of Work as your written approval of the survey variation from the Department of Fish and Game."

The guidelines also require that the biologist complete a "Survey and Trapping Form" for each trapping grid (see Appendix 4).

2.1 Visual Surveys

The visual surveys for the VV2 Project MGS survey were performed on 15, 16, and 17 March 2006 by Stephen J. Myers. The property was thoroughly walked, field notes were made on all wildlife species observed, and brief notes were made on plant community characteristics.

2.2 Trapping Surveys

Trapping grids, and the dates they were operated, were located on the project areas as follows:

- Grid # 1 (Northwestern Portion of Power Plant Site): 20-24 March, 1-5 May, and 10-14 July.
- Grid # 2 (Northeastern Portion of Power Plant Site): 27-31 March, 23 May to 27 May, 5-9 July.
- Grid # 3 (Central Portion of Power Plant Site): 12-16 April, 22-26 May, 6-10 July.
- Grid # 4 (Northwestern Laydown Area): 24-28 March, 8-12 May, 22-26 June.
- Grid # 5 (Southern Laydown Area): 31 March – 4 April, 1-5 May, 15-19 June.
- Grid # 6 (Water and Transmission Lines): 24-28 April, 14-18 May, 25-29 June.
- Grid # 7 (Transmission Line): 10-14 April, 15-19 May, 10-14 July.

All biologists performing the trapping surveys are permitted through current MOUs with CDFG. Stephen J. Myers is covered under an MOU issued to AMEC Earth and Environmental. Christine Halley is covered under Ryan Young's MOU, and Ted Rado and Stephen J.

Montgomery each have their own MOU. Each grid is listed below, with the biologist(s) that performed the trapping.

- Grid # 1: Stephen J. Myers (weeks 1 & 2), Stephen J. Montgomery (week 3).
- Grid # 2: Stephen J. Myers.
- Grid # 3: Ted Rado.
- Grid # 4: Ted Rado.
- Grid # 5: Ted Rado.
- Grid # 6: Ryan Young (week 1), Christine Halley (week 2), Ryan Young & Christine Halley (week 3).
- Grid # 7: Stephen J. Myers.

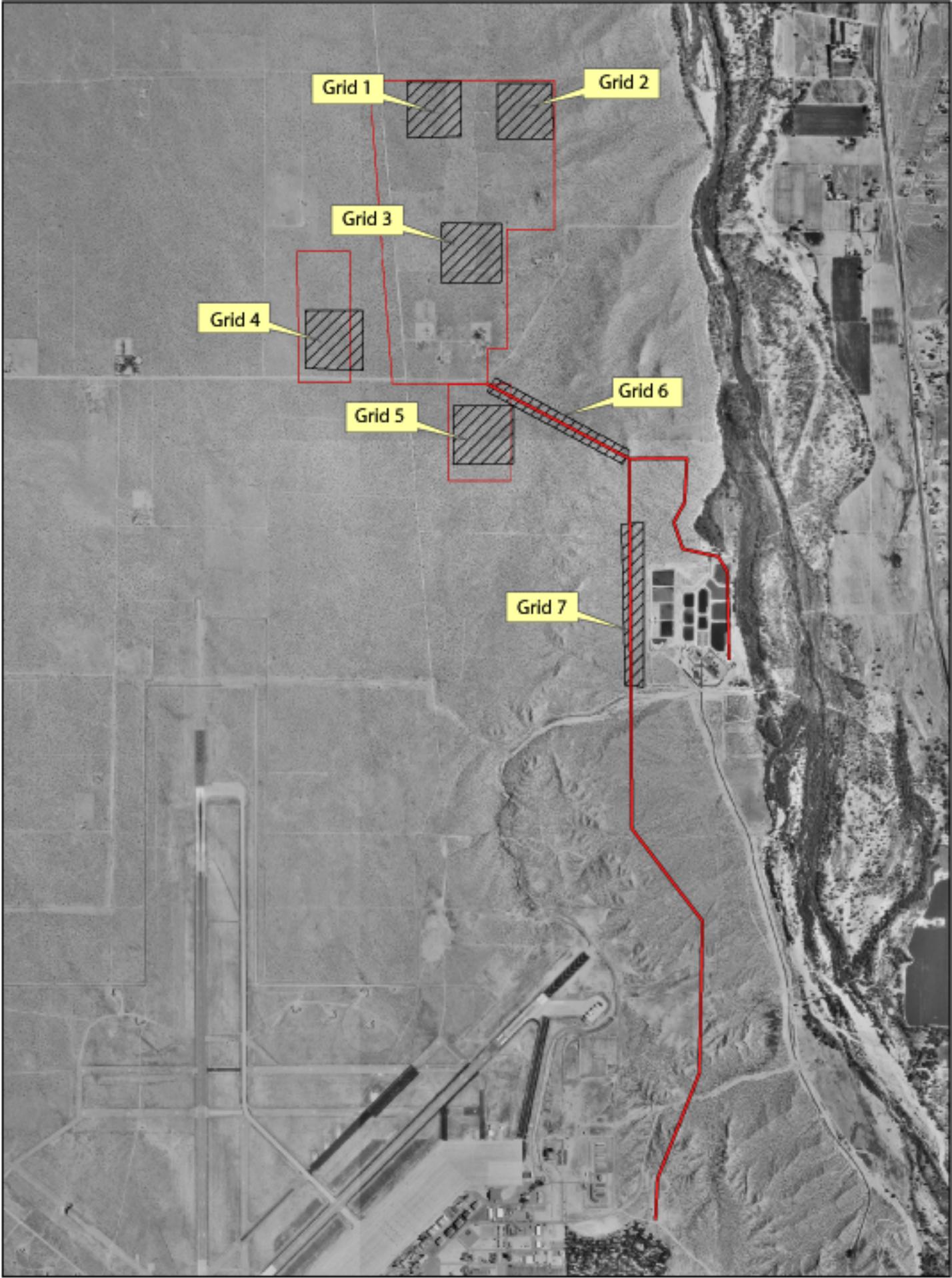
Air temperature ranges and other weather variables, monitored at intervals throughout each day, are presented in Table 1. The trapping grid locations are shown on Map 2.

3.0 RESULTS

3.1 Visual Surveys

The habitat on all undeveloped/undisturbed portions of the Project site (plant site, laydown areas, and linear features) is suitable for the Mohave Ground Squirrel. The vegetation is best characterized as Mohavean Creosote Bush Scrub. Creosote Bush (*Larrea tridentata*) dominates the shrub layer, and the most common subshrub is Burro-Weed (*Ambrosia dumosa*). Small amounts of Four-winged Saltbush (*Atriplex canescens*), Allscale (*Atriplex polycarpa*), and Mojave Indigobush (*Psoralea arborescens*) are present in many portions of the project site. Joshua Trees (*Yucca brevifolia*) are widely scattered throughout the area, as are cacti, including Silver Cholla (*Opuntia echinocarpa*), Beavertail (*Opuntia basilaris*), and Pencil Cholla (*Opuntia ramosissima*). Pencil Cholla and Silver Cholla are dense in an area along the proposed water and transmission lines southeast of the power plant site. Portions of the main power plant site are heavily impacted by rural residences, dumping, and by dirt roads/off road tracks, past sheep grazing, and shooting. The two laydown areas, the area where the water and transmission line routes coincide, and the southern portion of the transmission line route (the area nearest the HDPP site) are impacted by dirt roads and off-highway vehicle tracks, but have relatively little dumping. Figures 1 and 2 (Appendix 2) show habitat typical of the project area.

No Mohave Ground Squirrels were observed during the visual surveys. White-tailed Antelope Squirrels (*Ammodramus leucurus*) were observed in all areas. Many burrows suitable for occupation by either ground squirrel occur in all areas.



Victorville 2 Hybrid Power Plant: Mohave Ground Squirrel Grid Locations

See Section 2.2 of Report For Descriptions of Grid Locations



Table 1. Weather Data for Mohave Ground Squirrel Trapping.

Date	Temperature Range (° F)	Cloud Cover (%)	Wind Speed (mph) and Direction [when available]
TRAPPING GRID #1 (NW Portion of Power Plant Site)			
20 March 2006	38-56	10-40	6-35, variable
21 March 2006	36-54	10-30	5-20, west
22 March 2006	50-66	0-10	0-4, variable
23 March 2006	41-73	10	1-6, east
24 March 2006	48-76	60-80	0-5, variable
1 May 2006	55-95	0-70	0-5, south
2 May 2006	60-93	0	0-6, variable
3 May 2006	54-84	10-20	2-6, variable
4 May 2006	49-75	0-10	0-8, variable
5 May 2006	52-86	0-10	1-6, variable
10 July 2006	68-102	0	0-5, south
11 July 2006	71-103	0	0-10, variable
12 July 2006	64-101	0	0-10, variable
13 July 2006	58-103	0	0-2, south
14 July 2006	71-105	0	0-2, south
TRAPPING GRID #2 (NE Portion of Power Plant Site)			
27 March 2006	47-69	90-100	3-25, south
28 March 2006	49-59	80-100	0-30, south
29 March 2006	42-61	10-30	3-10, variable
30 March 2006	49-62	10-90	0-8, variable
31 March 2006	46-55	60-100	1-10, south
23 May 2006	47-88	0	0-3, variable
24 May 2006	57-94	0-10	1-5, variable
25 May 2006	56-94	0	1-8, variable
26 May 2006	54-89	0	2-15, variable
27 May 2006	47-67	10-60	10-25, west
5 July 2006	67-102	0	1-5, south
6 July 2006	66-102	0	1-2, south
7 July 2006	69-101	0	1-8, south
8 July 2006	69-102	0	0-3, south
9 July 2006	71-103	0-60	0-8, south
TRAPPING GRID #3 (Central Portion of Power Plant Site)			
12 April 2006	45-73	0	1-20
13 April 2006	41-82	0-10	1-11
14 April 2006	54-70	50-100	Not noted
15 April 2006	50-68	0-40	8-10
16 April 2006	39-70	0	1-13
22 May 2006	54-64	60-90	7-9
23 May 2006	52-84	0	0-4
24 May 2006	54-94	0	3-9
25 May 2006	55-95	0	3-6
26 May 2006	54-86	0-10	4-15
6 July 2006	66-97	0	0
7 July 2006	68-99	0	0-2
8 July 2006	72-100	0	0-3
9 July 2006	73-104	0-20	0-2
10 July 2006	70-106	0	0-4

**Table 1. Weather Data for Mohave Ground Squirrel Trapping.
(continued)**

Date	Temperature Range (° F)	Cloud Cover (%)	Wind Speed (mph) and Direction [when available]
TRAPPING GRID #4 (Northwestern Laydown Area)			
24 March 2006	43-74	10-25	4-9
25 March 2006	45-73	40-100	3-11
26 March 2006	37-70	0	2-11
27 March 2006	50-70	70-100	11-13
28 March 2006	45-64	80-100	6-21
8 May 2006	57-91	0	4-8
9 May 2006	55-91	0	1-8
10 May 2006	57-93	0-20	1-8
11 May 2006	57-97	0-20	1-5
12 May 2006	63-93	30-80	1-14
22 June 2006	66-109	0	3-4
23 June 2006	68-108	0	2-3
24 June 2006	70-106	80-100	0-8
25 June 2006	70-110	60-90	4-5
26 June 2006	77-99	70-100	2-6
TRAPPING GRID #5 (Southern Laydown Area)			
31 March 2006	45-59	80-100	1-9
1 April 2006	43-66	20-100	0-9
2 April 2006	37-73	10-60	1-5
3 April 2006	45-66	80-100	2-17
4 April 2006	50-68	30-90	15-27
1 May 2006	54-91	10-70	1-11
2 May 2006	54-84	0	1-12
3 May 2006	50-82	0-20	5-10
4 May 2006	41-73	0	1-7
5 May 2006	46-81	0-10	3-6
15 June 2006	54-89	0	0-5
16 June 2006	57-93	0	1-6
17 June 2006	63-99	0	0-3
18 June 2006	63-97	0	0-5
19 June 2006	64-100	0	1-7
TRAPPING GRID #6 (Water and Transmission Line Routes)			
24 April 2006	44-80		
25 April 2006	45-84		
26 April 2006	45-89		
27 April 2006	53-90		
28 April 2006	55-96		
14 May 2006	45-93		
15 May 2006	47-94		
16 May 2006	48-95		
17 May 2006	48-96		
18 May 2006	49-94		
25 June 2006	51-99		
26 June 2006	55-104		
27 June 2006	55-108		
28 June 2006	53-107		
29 June 2006	57-101		

Note: Data on cloud cover and wind was destroyed in a fire at the biologist's home.

Table 1. Weather Data for Mohave Ground Squirrel Trapping.
(continued)

Date	Temperature Range (° F)	Cloud Cover (%)	Wind Speed (mph) and Direction [when available]
TRAPPING GRID #7 (Transmission Line Route)			
10 April 2006	43-63	10-100	3-5, south
11 April 2006	49-62	80-100	1-5, south
12 April 2006	45-73	0	0-15, southeast
13 April 2006	49-83	0-10	0-6, variable
14 April 2006	52-67	70-100	3-20, south
15 May 2006	58-96	80-90	0-3, variable
16 May 2006	58-98	0-20	1-5, south
17 May 2006	60-99	10-60	0-2, south
18 May 2006	64-100	0-20	0-3, south
19 May 2006	61-100	0-10	1-6, south
10 July 2006	72-102	0-20	0-8, variable
11 July 2006	71-101	0	0-8, south
12 July 2006	69-101	0	0-5, southwest
13 July 2006	67-102	0	0-7, south
14 July 2006	71-105	0	0-6, south

3.2 Trapping Surveys

No Mohave Ground Squirrels were captured during the trapping surveys. One thousand two hundred seventy-five (1,275) animals were captured — 1,251 captures were of White-tailed Antelope Squirrels. Six additional wildlife species were captured during the trapping, including the Merriam’s Kangaroo Rat (*Dipodomys merriami*), Side-blotched Lizard (*Uta stansburiana*), Western Whiptail (*Aspidoscelis tigris*), Coachwhip (*Masticophis flagellum*), Mojave Rattlesnake (*Crotalus scutulatus*), and Black-throated Sparrow (*Amphispiza bilineata*). Tables 2 through 8 present all of the trapping results, and Appendix 1 lists all vertebrate wildlife species detected.

4.0 DISCUSSION

According to the Mohave Ground Squirrel Survey Guidelines (CDFG 2003), “If a survey conducted according to these guidelines results in no capture or observation of the Mohave Ground Squirrel on a project site, this is not necessarily evidence that the Mohave Ground Squirrel does not exist on the site or that the site is not actual or potential habitat of the species. However, in the circumstance of such a negative result, the Department will stipulate that the project site harbors no Mohave Ground Squirrels. This stipulation will expire one year from the ending date of the last trapping on the project site conducted according these guidelines.”

Therefore, because no Mohave Ground Squirrels were observed or trapped during the surveys conducted for the Victorville 2 Hybrid Power Project, CDFG will make such a stipulation. However, this stipulation will expire in July 2007. If the site is not developed prior to 15 July 2007, it will be necessary to repeat the Mohave Ground Squirrel surveys in order to obtain a new stipulation.

Table 2. Trapping Survey Results, Trapping Grid #1 (NW Portion of Power Plant Site).

SPECIES	20 March	21 March	22 March	23 March	24 March	1 May	2 May	3 May	4 May	5 May	10 July	11 July	12 July	13 July	14 July	TOTAL
White-tailed Antelope Squirrel	8	8	21	30	33	10	10	15	14	23	2	6	4	5	1	190
Side-blotched Lizard	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	2
Western Whiptail	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
Coachwhip	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
TOTAL	8	8	21	30	33	10	11	16	15	24	2	6	4	5	1	194

Table 3. Trapping Survey Results, Trapping Grid #2 (NE Portion of Power Plant Site).

SPECIES	27 March	28 March	29 March	30 March	31 March	23 May	24 May	25 May	26 May	27 May	5 July	6 July	7 July	8 July	9 July	TOTAL
White-tailed Antelope Squirrel	6	8	11	22	11	14	11	14	20	12	4	5	4	2	4	148
TOTAL	6	8	11	22	11	14	11	14	20	12	4	5	4	2	4	148

Table 4. Trapping Survey Results, Trapping Grid #3 (Central Portion of Power Plant Site).

SPECIES	12 April	13 April	14 April	15 April	16 April	22 May	23 May	24 May	25 May	26 May	6 July	7 July	8 July	9 July	10 July	TOTAL
White-tailed Antelope Squirrel	14	23	7	15	18	6	14	9	7	8	5	5	7	2	6	146
Coachwhip	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1
TOTAL	14	23	7	15	18	6	15	9	7	8	5	5	7	2	6	147

Table 5. Trapping Survey Results, Trapping Grid #4 (Northwestern Laydown Area).

SPECIES	24 March	25 March	26 March	27 March	28 March	8 May	9 May	10 May	11 May	12 May	22 June	23 June	24 June	25 June	26 June	TOTAL
White-tailed Antelope Squirrel	42	31	28	22	15	23	20	16	11	23	7	3	4	6	-	251
Merriam's Kangaroo Rat	-	-	-	-	-	-	-	-	-	1	-	2	-	-	1	4
Coachwhip	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	1
TOTAL	42	31	28	22	15	23	20	16	11	25	7	6	4	6	1	256

Table 6. Trapping Survey Results, Trapping Grid #5 (Southern Laydown Area).

SPECIES	31 March	1 April	2 April	3 April	4 April	1 May	2 May	3 May	4 May	5 May	15 June	16 June	17 June	18 June	19 June	TOTAL
White-tailed Antelope Squirrel	7	20	34	10	10	14	10	21	21	19	25	11	15	7	3	227
Merriam's Kangaroo Rat	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
Side-blotched Lizard	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
Western Whiptail	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	3
Coachwhip	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
TOTAL	7	20	34	10	10	14	11	22	23	19	25	11	15	8	5	234

Table 7. Trapping Survey Results, Trapping Grid #6 (Water and Transmission Lines).

SPECIES	24 April	25 April	26 April	27 April	28 April	14 May	15 May	16 May	17 May	18 May	25 June	26 June	27 June	28 June	29 June	TOTAL
White-tailed Antelope Squirrel	26	31	22	18	21	13	10	12	8	7	9	8	6	6	8	205
Western Whiptail	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
Coachwhip	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
Mojave Rattlesnake	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	1
Black-throated Sparrow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
TOTAL	26	32	22	19	21	14	10	12	9	7	9	8	6	6	9	209

Table 8. Trapping Survey Results, Trapping Grid #7 (Transmission Line).

SPECIES	10 April	11 April	12 April	13 April	14 April	15 May	16 May	17 May	18 May	19 May	10 July	11 July	12 July	13 July	14 July	
White-tailed Antelope Squirrel	4	7	9	10	6	5	9	8	5	8	1	3	4	2	3	84
Merriam's Kangaroo Rat	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
Western Whiptail	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
Coachwhip	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
TOTAL	4	7	10	10	6	6	9	8	5	9	1	3	4	2	3	87

5.0 LITERATURE CITED

- California Department of Fish and Game. 2003. Mohave Ground Squirrel survey guidelines. Unpublished document distributed to biologists authorized for trapping surveys under a Memorandum of Understanding with CDFG.
- Gustafson, J.R. 1993. A status review of the Mohave Ground Squirrel (*Spermophilus mohavensis*). California Department of Fish and Game. Nongame Bird and Mammals Report 93-9.

APPENDIX 1

Animal Species Detected During Mohave Ground Squirrel Surveys

APPENDIX 1
ANIMAL SPECIES DETECTED DURING MOHAVE GROUND SQUIRREL SURVEYS

REPTILES

True Land Tortoises

Desert Tortoise

Collared & Leopard Lizards

Long-nosed Leopard Lizard

Horned Lizards & allies

Desert Horned Lizard

Side-blotched Lizard

Desert Spiny Lizard

Zebra-tailed Lizard

Night Lizards

Yucca Night Lizard

Whiptails & relatives

Great Basin Whiptail

Colubrid Snakes

Coachwhip

Gopher snake

Western Patch-nosed Snake

Vipers

Mojave Rattlesnake

Sidewinder

BIRDS

Ducks, Geese, & Swans

Wood Duck

Gadwall

American Wigeon

Mallard

Cinnamon Teal

Northern Shoveler

Green-winged Teal

Redhead

Ring-necked Duck

Lesser Scaup

Bufflehead

Ruddy Duck

REPTILIA

Testudinidae

Gopherus agassizii

Crotaphytidae

Gambelia wislizenii

Phrynosomatidae

Phrynosoma platyrhinos

Uta stansburiana

Sceloporus magister

Callisaurus draconoides

Xantusiidae

Xantusia vigilis vigilis

Teiidae

Aspidooscelis tigris tigris

Colubridae

Masticophis flagellum

Pituophis catenifer

Salvadora hexalepis

Viperidae

Crotalus scutulatus

Crotalus cerastes

AVES

Anatidae

Aix sponsa

Anas strepera

Anas americana

Anas platyrhynchos

Anas cyanoptera

Anas clypeata

Anas crecca

Aythya americana

Aythya collaris

Aythya affinis

Bucephala albeola

Oxyura jamaicensis

New World Quail

California Quail

Grebes

Pied-billed Grebe

Eared Grebe

Hérons, Egrets, & Bitterns

Great Egret

Ibises & Spoonbills

White-faced Ibis

New World Vultures

Turkey Vulture

Hawks, Harriers, & Eagles

Bald Eagle

Northern Harrier

Sharp-shinned Hawk

Cooper's Hawk

Red-shouldered Hawk

Swainson's Hawk

Red-tailed Hawk

Falcons

American Kestrel

Rails, Gallinules, & Coots

American Coot

Plovers

Killdeer

Stilts & Avocets

Black-necked Stilt

American Avocet

Sandpipers & Phalaropes

Spotted Sandpiper

Greater Yellowlegs

Western Sandpiper

Least Sandpiper

Gulls, Terns, & Skimmers

California Gull

Pigeons & Doves

Rock Pigeon (nonnative)

Mourning Dove

Odontophoridae

Callipepla californica

Podicipedidae

Podilymbus podiceps

Podiceps nigricollis

Ardeidae

Ardea alba

Threskiornithidae

Plegadis chihi

Cathartidae

Cathartes aura

Accipitridae

Haliaeetus leucocephalus

Circus cyaneus

Accipiter striatus

Accipiter cooperii

Buteo lineatus

Buteo swainsoni

Buteo jamaicensis

Falconidae

Falco sparverius

Rallidae

Fulica americana

Charadriidae

Charadrius vociferus

Recurvirostridae

Himantopus mexicanus

Recurvirostra americana

Scolopacidae

Actitis macularius

Tringa melanoleuca

Calidris mauri

Calidris minutilla

Laridae

Larus californicus

Columbidae

Columba livia

Zenaida macroura

Cuckoos & Allies

Greater Roadrunner

Goatsuckers

Lesser Nighthawk

Swifts

Vaux's Swift

White-throated Swift

Hummingbirds

Black-chinned Hummingbird

Anna's Hummingbird

Costa's Hummingbird

Rufous Hummingbird

Woodpeckers

Ladder-backed Woodpecker

Nuttall's Woodpecker

Downy Woodpecker

Northern Flicker

Tyrant Flycatchers

Western Wood-Pewee

Hammond's Flycatcher

Black Phoebe

Say's Phoebe

Ash-throated Flycatcher

Western Kingbird

Shrikes

Loggerhead Shrike

Jays, Magpies, & Crows

Common Raven

Larks

Horned Lark

Swallows

Tree Swallow

Violet-green Swallow

Northern Rough-winged Swallow

Cliff Swallow

Barn Swallow

Penduline Tits & Verdins

Verdin

Cuculidae

Geococcyx californianus

Caprimulgidae

Chordeilus acutipennis

Apodidae

Chaetura vauxi

Aeronautes saxatalis

Trochilidae

Archilochus alexandri

Calypte anna

Calypte costae

Selasphorus rufus

Picidae

Picoides scalaris

Picoides nuttallii

Picoides pubescens

Colaptes auratus

Tyrannidae

Contopus sordidulus

Empidonax hammondi

Sayornis nigricans

Sayornis saya

Myiarchus cinerascens

Tyrannus verticalis

Laniidae

Lanius ludovicianus

Corvidae

Corvus corax

Alaudidae

Eremophila alpestris

Hirundinidae

Tachycineta bicolor

Tachycineta thalissina

Stelgidopteryx serripennis

Petrochelidon pyrrhonota

Hirunda rustica

Remizidae

Auriparus flaviceps

Long-tailed Tits & Bushtits

Bushtit

Wrens

Cactus Wren
Rock Wren
Bewick's Wren
House Wren

Kinglets

Ruby-crowned Kinglet

Old World Warblers & Gnatcatchers

Blue-gray Gnatcatcher

Thrushes

Western Bluebird
Hermit Thrush

Mockingbirds, Thrashers, & allies

Northern Mockingbird
Sage Thrasher

Starlings

European Starling (nonnative)

Wagtails & Pipits

American Pipit

Silky-Flycatchers

Phainopepla

Parulidae

Orange-crowned Warbler
Yellow Warbler
Yellow-rumped Warbler
Common Yellowthroat
Wilson's Warbler

Emberizids

Spotted Towhee
Chipping Sparrow
Brewer's Sparrow
Lark Sparrow
Black-throated Sparrow
Sage Sparrow
Savannah Sparrow
Song Sparrow
Lincoln's Sparrow
White-crowned Sparrow

Aegithalidae

Psaltriparus minimus

Troglodytidae

Campylorhynchus brunneicapillus
Salpinctes obsoletus
Thryomanes bewickii
Troglodytes aedon

Regulidae

Regulus calendula

Sylviidae

Polioptila caerulea

Turdidae

Sialia mexicana
Catharus guttatus

Mimidae

Mimus polyglottos
Oreoscoptes montanus

Sturnidae

Sturnus vulgaris

Motacillidae

Anthus rubescens

Ptilonotidae

Phainopepla nitens

Wood-Warblers

Vermivora celata
Dendroica petechia
Dendroica coronata
Geothlypis trichas
Wilsonia pusilla

Emberizidae

Pipilo maculatus
Spizella passerina
Spizella breweri
Chondestes grammacus
Amphispiza bilineata
Amphispiza belli
Passerculus sandwichensis
Melospiza melodia
Melospiza lincolnii
Zonotrichia leucophrys

Blackbirds & allies

Red-winged Blackbird
Western Meadowlark
Brewer's Blackbird
Great-tailed Grackle
Brown-headed Cowbird
Bullock's Oriole

Fringilline & Cardueline Finches

House Finch
Lesser Goldfinch
American Goldfinch

Old World Sparrow/Weavers

House Sparrow (nonnative)

MAMMALS

Rabbits and Hares

Black-tailed Jackrabbit
Audubon's Cottontail

Squirrels, Chipmunks, and Marmots

White-tailed Antelope Squirrel
California Ground Squirrel

Pocket Mice & Kangaroo Rats

Little Pocket Mouse
Panamint Kangaroo Rat
Merriam's Kangaroo Rat

Mice, Rats, & Voles

Deer Mouse

Foxes, Wolves, and relatives

Kit Fox
Coyote (scat)

Icteridae

Agelaius phoeniceus
Sturnella neglecta
Euphagus cyanocephalus
Quiscalus mexicanus
Molothrus ater
Icterus bullockii

Fringillidae

Carpodacus mexicanus
Carduelis psaltria
Carduelis tristis

Passeridae

Passer domesticus

MAMMALIA

Leporidae

Lepus californicus
Sylvilagus audubonii

Sciuridae

Ammospermophilus leucurus
Spermophilus beecheyi

Heteromyidae

Perognathus longimembris
Dipodomys panamintinus
Dipodomys merriami

Muridae

Peromyscus maniculatus

Canidae

Vulpes macrotis
Canis latrans

APPENDIX 2
Site Photographs



Figure1. Habitat along the transmissison line alignment, near the VVWRA treatment plant.



Figure 2. Habitat typical of the power plant site and laydown areas. This view is on trapping grid #2, near the northeastern corner of the power plant site.

APPENDIX 3

Plan of Work Submitted to California Department of Fish and Game

PLAN OF WORK: BIOLOGICAL STUDIES FOR THE PROPOSED VICTORVILLE 2 POWER PLANT

AMEC Earth and Environmental, Inc.
Riverside, CA

This document summarizes the biological studies that will be completed by AMEC Earth and Environmental (AMEC) during the environmental review process for the proposed Victorville 2 Power Plant. The species of primary focus during the studies are the Desert Tortoise (*Gopherus agassizii*), Mohave Ground Squirrel (*Spermophilus mohavensis*), and Burrowing Owl (*Athene cunicularia*). The tortoise and ground squirrel are listed by the federal and/or state as Threatened, and the Burrowing Owl is a California Species of Special Concern and is protected by the California Fish and Game Code. Several other sensitive species occur in the region, and will be addressed in the biological resources report.

The project is comprised of a 250 acre parcel that would accommodate the power plant, two sites (one 30 acres and the other 20 acres) for "laydown areas," and approximately three miles of linears (a water line from the Victor Valley Wastewater Reclamation Authority treatment plant and power lines to a substation at the existing power plant near Southern California Logistics Airport).

Mohave Ground Squirrel Surveys

As specified by the California Department of Fish and Game's (CDFG) Mohave Ground Squirrel Survey Guidelines (January 2003), the project sites will be thoroughly surveyed for the Mohave Ground Squirrel (MGS). Visual surveys shall be performed between 15 March and 20 March. If the visual surveys do not reveal the presence of MGS, trapping surveys will commence.

Number of Trapping Grids

On 8 March 2006, Stephen J. Myers of AMEC and Tonya Moore of CDFG toured the project area. They agreed upon the following guidelines regarding the number of grids used for the MGS trapping.

- Power Plant Site (250 acres) – A significant portion of the southwest corner of the site contains existing rural residences, along with areas of junk vehicles, large wood piles, and previously cleared land. At least two other rural residences also occur on the site. In addition, a buried fiber optic line runs along Helendale Road, which borders the entire western side of the site. Installation of the fiber optic line resulted in the removal of native vegetation in a swath that averages approximately 100 feet wide. Considering the amount of disturbed land, it was determined that three trapping grids (10 rows of 10 traps each) are sufficient to sample the site adequately.

- Laydown Areas (30 acres and 20 acres) – It was determined, based on the size of these parcels, that 100 traps divided between the site would be adequate to sample the sites for the MGS. The sites are less than ¼ mile apart. Myers suggested 60 traps (6 rows of 10) for the 30 acre site, and 40 traps for the 20 acre site. Moore agreed that this sampling strategy was adequate.
- Linears – The total distance of the linears is approximately three miles. The southern-most mile (near the existing power plant) is highly disturbed, and is mostly devoid of native vegetation. Myers and Moore agreed that two trapping grids (4 rows of 25 traps each) is adequate to sample the linears. One grid will be located on the alignment that will share the water line and electrical line, and the other along the route to the substation, west of the Victor Valley Wastewater Reclamation Authority treatment plant.

All trapping will follow CDFG's Guidelines, including trapping during three trapping periods (15 March-30 April, 1 May-31 May, and 15 June-15 July), shading traps with non-metallic shelters, operating traps from one hour after sunrise until one hour before sunset, checking traps at least once every four hours, and closing traps when the ambient temperature exceeds 90° F.

Desert Tortoise Surveys

Desert Tortoise surveys will be conducted according to protocols set forth by the U.S. Fish and Wildlife Service. The surveys will be conducted between 25 March and 31 May 2006. Transects 30 feet apart will be walked on all project sites and alignments, and zone of influence surveys will be completed (at 100, 300, 600, 1200, and 2400 feet, with an additional transect at a one mile radius from the project sites).

Burrowing Owl Surveys

Surveys for Burrowing Owl burrows will be conducted concurrently with the Desert Tortoise surveys. The 30 foot transect spacing of the tortoise surveys exceeds the requirements for Burrowing Owl surveys, which are normally 100 foot transects.

General Biological Resources Report

The general biological resources report will be prepared following field studies. Field data gathered during the various studies will be utilized in the biological report. The report will address fauna and flora of the sites, known or potential sensitive species of the sites, and wetlands or "waters" on the sites that may require permitting.

APPENDIX 4

Mohave Ground Squirrel Survey and Trapping Forms

Mohave Ground Squirrel (MGS) Survey and Trapping Form (photocopy as needed)

PART I - PROJECT INFORMATION (use a separate form for each sampling grid)

Project name: Victorville 2 Power Plant Property owner: Various
(Grid # 1)

Location: Township 7 North; Range 5 West; Section 2 (N 1/2) Section _____

Quad map/series: Victorville NW / 7.5' UTM coordinates: (NW corner) 465 789
Helendale 3833537 NAD 27
GPS coordinates of trapping-grid corners

Acreage of Project Site: 250 ± Acreage of potential MGS habitat on site: _____

Total acreage visually surveyed on project site: All Date(s): 15 March 2006
visual surveys

Visual surveys conducted by: Stephen J. Myers
names of all persons by date (use back of form, if needed)

Total acres trapped: 24.5 Number of sampling grids: 3 on power plant site

Trapping conducted by: Stephen J. Myers (1st + 2nd terms), Stephen J. Montgomery (3rd term)
names of all persons by sampling term and sampling grid (use back of form, if needed)

Dates of sampling term(s): FIRST 20-24 March SECOND 1-5 May THIRD 10-14 July
if required if required

PART II - GENERAL HABITAT DESCRIPTION (use back of form, if needed)

Vegetation: dominant perennials: Larrea tridentata, Ambrosia dumosa

other perennials: Lycium cooperi, Yucca brevifolia, Opuntia ethinocarpa

dominant annuals: Schismus barbatus, Bromus tectorum, Erodium cicutarium

other annuals: Amsinckia tessellata

Land forms (mesa, bajada, wash): Flat desert

Soils description: Sandy to sandy loam

Elevation: ~2760 feet Slope: _____

PART III - WEATHER (report measurements in the following categories for each day of visual survey and each day of trapping; using 24-hour clock, indicate time of day that each measurement was made; use a separate blank sheet for each day)

Temperature: AIR minimum and maximum; SOIL minimum and maximum; Cloud Cover: % in AM and % in PM; Wind Speed: in AM and in PM See report.

Mohave Ground Squirrel (MGS) Survey and Trapping Form (photocopy as needed)

PART I - PROJECT INFORMATION (use a separate form for each sampling grid)

Project name: Victorville 2 Hybrid Power Plant Property owner: Various
(Grid 2)

Location: Township 7 North; Range 5 West; Section 2 (N 1/2); Section _____

Quad map/series: Helendale 7.5' UTM coordinates: (NW corner) 466 212 NAD 27
GPS coordinates of trapping-grid corners 38 33 531

Acreage of Project Site: 250 ± Acreage of potential MGS habitat on site: _____

Total acreage visually surveyed on project site: All Date(s): 15 March 2006
visual surveys

Visual surveys conducted by: Stephen J. Myers
names of all persons by date (use back of form, if needed)

Total acres trapped: 24.5 Number of sampling grids: 3 on power plant site

Trapping conducted by: Stephen J. Myers
names of all persons by sampling term and sampling grid (use back of form, if needed)

Dates of sampling term(s): FIRST 27-31 March SECOND 23-27 May THIRD 5-9 July
if required if required

PART II - GENERAL HABITAT DESCRIPTION (use back of form, if needed)

Vegetation: dominant perennials: Larrea tridentata, Ambrosia dumosa

other perennials: Lycium cooperi, Yucca bevitolia, Opuntia echinocarpa

dominant annuals: Schismus barbatus, Bromus tectorum, Erodium cicutarium

other annuals: Amsinckia tessellata

Land forms (mesa, bajada, wash): Flat

Soils description: Sandy to sandy loam

Elevation: ~2770 feet Slope: _____

PART III - WEATHER (report measurements in the following categories for each day of visual survey and each day of trapping; using 24-hour clock, indicate time of day that each measurement was made; use a separate blank sheet for each day)

Temperature: AIR minimum and maximum; SOIL minimum and maximum; Cloud Cover: % in AM and % in PM; Wind Speed: in AM and in PM See report.

Mohave Ground Squirrel (MGS) Survey and Trapping Form (photocopy as needed)

PART I - PROJECT INFORMATION (use a separate form for each sampling grid)

Project name: Victorville 2 Hybrid Power Plant Property owner: Various
(Grid # 3)

Location: Township 7 North; Range 5 West; Section 2 (SE 1/4); Section _____

Quad map/series: Helendale 7.5' UTM coordinates: (NW corner) 465922 3832770 NAD 27
GPS coordinates of trapping-grid corners

Acreage of Project Site: 250 ± Acreage of potential MGS habitat on site: _____

Total acreage visually surveyed on project site: All Date(s): 15 March 2006
visual surveys

Visual surveys conducted by: Stephen J. Myers
names of all persons by date (use back of form, if needed)

Total acres trapped: 24.5 ± Number of sampling grids: 3 on power plant site

Trapping conducted by: Ted Rado
names of all persons by sampling term and sampling grid (use back of form, if needed)

Dates of sampling term(s): FIRST 12-16 April SECOND 22-26 May THIRD 6-10 July
if required if required

PART II - GENERAL HABITAT DESCRIPTION (use back of form, if needed)

Vegetation: dominant perennials: Larrea tridentata, Ambrosia dumosa

other perennials: Lycium cooperi, Yucca brevifolia, Opuntia echinocarpa

dominant annuals: Schismus barbatus, Bromus tectorum, Erodium cicutarium

other annuals: Amsinckia tessellata

Land forms (mesa, bajada, wash): Flat

Soils description: Sandy to sandy loam

Elevation: ~2790 feet Slope: _____

PART III - WEATHER (report measurements in the following categories for each day of visual survey and each day of trapping; using 24-hour clock, indicate time of day that each measurement was made; use a separate blank sheet for each day)

Temperature: AIR minimum and maximum; SOIL minimum and maximum; Cloud Cover: % in AM and % in PM; Wind Speed: in AM and in PM
See report.

Mohave Ground Squirrel (MGS) Survey and Trapping Form (photocopy as needed)

PART I - PROJECT INFORMATION (use a separate form for each sampling grid)

Project name: Victorville 2 Hybrid Power Plant Property owner: Various
(Grid #4)

Location: Township 7 North; Range 5 West; Section 2 (SW 1/4), Section _____

Quad map/series: Victorville NW / 7.5' UTM coordinates: (NW corner) 465185 3832303 NAD 27
GPS coordinates of trapping-grid corners

Acreage of Project Site: ~ 49 Acreage of potential MGS habitat on site: All

Total acreage visually surveyed on project site: All Date(s): 16 March 2006
visual surveys

Visual surveys conducted by: Stephen J. Myers
names of all persons by date (use back of form, if needed)

Total acres trapped: ± 24.5 Number of sampling grids: 1

Trapping conducted by: Ted Rado
names of all persons by sampling term and sampling grid (use back of form, if needed)

Dates of sampling term(s): FIRST 24-28 March SECOND 8-12 May THIRD 22-26 June
if required if required if required

PART II - GENERAL HABITAT DESCRIPTION (use back of form, if needed)

Vegetation: dominant perennials: Larrea tridentata, Ambrosia dumosa, Krascheninnikovia lanata

other perennials: Lycium cooperi, Yucca brevifolia

dominant annuals: Schismus barbatus, Bromus tectorum, Erodium cicutarium

other annuals: _____

Land forms (mesa, bajada, wash): Flat

Soils description: Sandy to loamy sand

Elevation: ~ 2790 feet Slope: _____

PART III - WEATHER (report measurements in the following categories for each day of visual survey and each day of trapping; using 24-hour clock, indicate time of day that each measurement was made; use a separate blank sheet for each day)

Temperature: AIR minimum and maximum; SOIL minimum and maximum; Cloud Cover: % in AM and % in PM; Wind Speed: in AM and in PM See report.

Mohave Ground Squirrel (MGS) Survey and Trapping Form (photocopy as needed)

PART I - PROJECT INFORMATION (use a separate form for each sampling grid)

Project name: Victorville 2 Hybrid Power Plant Property owner: Various
(Grid # 5)

Location: Township 7 North; Range 5 West; Section 11; Section _____

Quad map/series: Helendale / 7.5' UTM coordinates: (NW corner) 466030
3831789 NAD 27
GPS coordinates of trapping-grid corners

Acreage of Project Site: +43 Acreage of potential MGS habitat on site: All

Total acreage visually surveyed on project site: All Date(s): 16 March 2006
visual surveys

Visual surveys conducted by: Stephen J. Myers
names of all persons by date (use back of form, if needed)

Total acres trapped: ± 24.5 Number of sampling grids: 1

Trapping conducted by: Ted Rado
names of all persons by sampling term and sampling grid (use back of form, if needed)

Dates of sampling term(s): FIRST 31 March - 4 April SECOND 1-5 May THIRD 15-19 June
if required if required if required

PART II - GENERAL HABITAT DESCRIPTION (use back of form, if needed)

Vegetation: dominant perennials: Larrea tridentata, Ambrosia dumosa

other perennials: Yucca brevifolia, Opuntia echinocarpa

dominant annuals: Schismus barbatus, Bromus tectorum

other annuals: _____

Land forms (mesa, bajada, wash): Flat to rolling hills

Soils description: Sandy

Elevation: 2800' Slope: _____

PART III - WEATHER (report measurements in the following categories for each day of visual survey and each day of trapping; using 24-hour clock, indicate time of day that each measurement was made; use a separate blank sheet for each day)

Temperature: AIR minimum and maximum; SOIL minimum and maximum; Cloud Cover: % in AM and % in PM; Wind Speed: in AM and in PM

See report.

Mohave Ground Squirrel (MGS) Survey and Trapping Form (photocopy as needed)

PART I - PROJECT INFORMATION (use a separate form for each sampling grid)

Project name: Victorville 2 Hybrid Power Plant Property owner: Various
(Grid # 6 - Water + Transmission Lines)

Location: Township 7 North; Range 5 West; Section 11; Section 12

Quad map/series: Helendale / 7.5' UTM coordinates: 466203, 3831944; 466158, 3831870;
466884, 3831482; 466921, 3831552 NAD 2:
GPS coordinates of trapping-grid corners

Acreage of Project Site: _____ Acreage of potential MGS habitat on site: All

Total acreage visually surveyed on project site: All Date(s): 17 March 2006
visual surveys

Visual surveys conducted by: Stephen J. Myers
names of all persons by date (use back of form, if needed)

Total acres trapped: ± 21.9 Number of sampling grids: 1

Trapping conducted by: Ryan Young, Christine Halley
names of all persons by sampling term and sampling grid (use back of form, if needed)

Dates of sampling term(s): FIRST 24-28 April SECOND 14-18 May THIRD 25-29 June
if required if required

PART II - GENERAL HABITAT DESCRIPTION (use back of form, if needed)

Vegetation: dominant perennials: Larrea tridentata, Ambrosia dumosa, Opuntia ramosissima
other perennials: Opuntia echinocarpa, Yucca brevifolia
dominant annuals: Schismus barbatus, Bromus tectorum, Erodium cicutarium

other annuals: _____

Land forms (mesa, bajada, wash): Flat to rolling hills

Soils description: Sandy

Elevation: 2800' - 2830' Slope: _____

PART III - WEATHER (report measurements in the following categories for each day of visual survey and each day of trapping; using 24-hour clock, indicate time of day that each measurement was made; use a separate blank sheet for each day)

Temperature: AIR minimum and maximum; SOIL minimum and maximum; Cloud Cover: % in AM and % in PM; Wind Speed: in AM and in PM
See report.

Mohave Ground Squirrel (MGS) Survey and Trapping Form (photocopy as needed)

PART I - PROJECT INFORMATION (use a separate form for each sampling grid)

Project name: Victorville 2 Hybrid Power Plant Property owner: Various
(Grid #7 - Transmission Line)

Location: Township 7 North; Range 5 West; Section 12; Section _____

Quad map/series: Victorville / 7.5' UTM coordinates: NW corner 466880
3831155 NAD 27
GPS coordinates of trapping-grid corners

Acreage of Project Site: _____ Acreage of potential MGS habitat on site: All

Total acreage visually surveyed on project site: All Date(s): 17 March 2006
visual surveys

Visual surveys conducted by: Stephen J. Myers
names of all persons by date (use back of form, if needed)

Total acres trapped: ± 21.9 Number of sampling grids: 1

Trapping conducted by: Stephen J. Myers
names of all persons by sampling term and sampling grid (use back of form, if needed)

Dates of sampling term(s): FIRST 10-14 April SECOND 15-19 May THIRD 10-14 July
if required if required if required

PART II - GENERAL HABITAT DESCRIPTION (use back of form, if needed)

Vegetation: dominant perennials: Larrea tridentata, Ambrosia dumosa

other perennials: Psoralea arborescens

dominant annuals: Schismus barbatus, Bromus tectorum

other annuals: _____

Land forms (mesa, bajada, wash): Hilly

Soils description: Sandy to loamy

Elevation: 2640 - 2680 feet Slope: _____

PART III - WEATHER (report measurements in the following categories for each day of visual survey and each day of trapping; using 24-hour clock, indicate time of day that each measurement was made; use a separate blank sheet for each day)

Temperature: AIR minimum and maximum; SOIL minimum and maximum; Cloud Cover: % in AM and % in PM; Wind Speed: in AM and in PM

See report.