

## **Appendix A – Biological Survey Report**



---

**TECHNICAL MEMORANDUM**

FROM: Emily Mix (Tetra Tech Inc.) and Dr. Alice Karl

DATE: March 29, 2012

---

SUBJECT: **Genesis Solar Energy Project Biological Resources Surveys of an Alternate Linear Facilities Route**

---

On March 15 and 16, 2012, biologists Dr. Alice Karl and Ms. Emily Mix conducted comprehensive biological resource surveys of an alternate generation-tie line (gen-tie) and gas pipeline (collectively referred to as the linear facilities) route for the Genesis Solar Energy Project (Project). The purpose of the surveys was to identify the presence or potential for presence of special-status species and vegetation communities along the alternative route. This technical memo describes the methods and results from the 2012 surveys and supplements the *Genesis Solar Energy Project Biological Resources Technical Report* (Tetra Tech and Karl 2009) and *Fall 2009 and Spring 2010 Genesis Solar Energy Project Biological Resources Technical Report* (Tetra Tech and Karl 2010).

Methods

Dr. Karl and Ms. Mix conducted surveys using identical methods used for the Project in 2009 and 2010 (Tetra Tech and Karl 2009 and 2010). In summary, this included surveying for Agassiz's desert tortoise (*Gopherus agassizii*) in accordance with US Fish and Wildlife Service (FWS) protocols (1992) and burrowing owls in accordance with California Burrowing Owl Consortium Guidelines (CBOC 1993). Although FWS released revised desert tortoise survey guidance in 2010, to be consistent with protocols used on previous Project surveys, biologists followed the 1992 guidance. The current FWS timing requirement for spring surveys is April 1 to May 31; however, the FWS Carlsbad field office, with agreement from the Bureau of Land Management (BLM) and California Department of Fish and Game (CDFG), authorized tortoise surveys to commence on March 15, 2012 based on recent, local weather conditions and data identifying that tortoises were active in the Project vicinity (T. Keeler Baird, pers. comm. March 13, 2012). Based on the warm weather the previous month, March would also be appropriate for surveying for plant species.

Surveys of the alternate route were conducted in areas not previously surveyed for biological resources (Figures 1A and 1B) or permitted. Biologists surveyed a 50 foot-wide-corridor (gas pipeline route only), 100 foot-wide corridor (gen-tie only), or 130-foot-wide corridor (gen-tie plus pipeline) along the proposed linear right-of-way (ROW) at

100% coverage (30-foot wide transects) plus a single, 30-foot-wide buffer transect at 100, 200, 300, 400, 500<sup>1</sup>, 1,200, and 2,400 feet from the survey corridor boundary. The survey corridor was slightly wider than the proposed ROW. Using a handheld global positioning system (GPS) unit, biologists recorded and mapped all tortoise sign (e.g., scat, burrows, tortoises, tracks, carcasses), all sightings of known tortoise predators (e.g., common raven, coyote), and other site features that could assist in the analysis of tortoise population impacts.

Concurrently with desert tortoise surveys, biologists conducted surveys for all special-status species (individuals and sign) that potentially occur within the Project, including plants, Mojave fringe-toed lizard (*Uma scoparia*), burrowing owl (*Athene cunicularia*), desert kit fox (*Vulpes macrotis*) and several other species (see Table 1 in Tetra Tech and Karl 2009). Habitat was sought for species that are only seasonally active (e.g., Couch's spadefoot [*Scaphiopus couchii*]). Plant species regulated by the California Desert Native Plants Act - which include trees, cacti, ocotillo (*Fouquieria splendens*), yucca, and fan palms (*Washingtonia filifera*) – were counted where they occurred in the survey corridor. All special-status species observations and their sign were recorded and mapped using a handheld GPS unit.

## Results

The vegetation communities and land cover present within the surveyed area were consistent with those observed on the existing Project ROW (Figure 2A and 2B, see Tetra Tech and Karl 2009, 2010). The entire surveyed route was Creosote Bush (*Larrea tridentata*) Scrub Alliance, with creosote bush the predominant shrub. Intermittent low sand dunes and sand sheets, a BLM sensitive vegetation community, is present on most of the surveyed route south of Interstate 10. Big galleta grass (*Pleuraphis rigida*) is intermittently common to absent in the loose-sandy areas. Creosote bush – big galleta grass associations are generally considered rare by the CDFG (CDFG Natural Diversity Data Base 2010). However, the Project route would represent a poor-quality occurrence of this community because (1) galleta grass is only intermittent and not a dominant shrub, and (2) Sahara mustard (*Brassica tournefortii*), an invasive exotic annual, is abundant throughout most of the dunes and sand sheets.

No special-status plants were observed; however, germination of annuals was negligible along the route due to limited Winter 2011-2012 precipitation. Although germination was negligible, the proximity of the new route plus the similarity of the vegetation communities and habitats with those surveyed in 2009 and 2010 indicate that no new special-status plant species would be likely to be found on the new route alternatives, with the potential exception of Abram's spurge (*Chamaesyce abramsiana*). Species found on the earlier surveys in these habitat types, and likely to grow on the new alternative in years with adequate germination, would include Harwood's phlox (*Eriastrum harwoodii*), Harwood's milkvetch (*Astragalus insularis harwoodii*), and ribbed cryptantha (*Cryptantha costata*); Abram's spurge may be present in some of the swales near Interstate 10.

---

<sup>1</sup> The 1992 FWS protocols place a Zone of Influence (ZOI) transect at 600 feet; however, in Spring 2009 the desert tortoise ZOI transect was moved to 500 feet with permission from the CEC, BLM, FWS, and CDFG to meet the California Burrowing Owl Consortium (CBOC) (1993) and CDFG (1995) burrowing owl survey requirement for a buffer transect at 500 feet. Spring 2012 survey methods were kept consistent with Spring 2009 methods.

CDNPA species in the survey route included a single silver cholla (*Opuntia echinocarpa*). It was approximately 500 feet outside of the ROW, south of I-10.

No state- or federally listed wildlife species were observed during 2012 surveys. Biologists found three permineralized desert tortoise (state- and federally listed Threatened) shell fragments off the Project route. Due to the complete lack of sign indicating use by desert tortoises of the Project route or the adjacent habitat, presence of tortoises on the new route is not supported.

Biologists also detected two California Species of Special Concern: Mojave fringe-toed lizard (11 individuals) and burrowing owl (inactive burrow) (Table 1, Figures 2A and 2B). Two inactive desert kit fox (CDFG protected furbearer) natal dens were also observed. Of the special-status species observed, six Mojave fringe-toed lizards were within the proposed linear ROW and all others were detected outside of the ROW on buffer surveys.

One pair of nesting common ravens (*Corvus corax*) was observed adjacent to the survey route in a communications tower. Native birds, including ravens, and their nests are protected by the federal Migratory Bird Treaty Act and CDFG Code Sections 3503 (all native birds) and 3503.5 (raptors).

### Conclusion

The results of the 2012 surveys of the alternate linear facilities route are consistent with results of previous Project surveys (see Tetra Tech and Karl 2009, 2010). No new vegetation communities or special-status species were detected along the alternate linear facilities route for which Project impacts have not previously been identified and analyzed in the California Energy Commission (CEC) and BLM permitting process.

### Recommendations

Mitigation measures as required by the Project's CEC Final Decision and BLM ROW Grant should be applied to the alternate linear facilities route, as applicable. This includes, but is not limited to, protection measures during construction and operations maintenance for desert tortoise, nesting birds, and other special-status species, minimization of habitat loss or degradation, and compensation for both sand dune habitat (3:1) and desert habitat (1:1).

## Literature Cited

California Burrowing Owl Consortium (CBOC). 1993. Burrowing owl survey protocols and mitigation guidelines. Available at:  
<http://www.dfg.ca.gov/wildlife/nongame/docs/boconsortium.pdf>. 13 pp.

Keeler Baird, T. 2012. Personal Communication via email to E. Mix, Tetra Tech Inc. Wildlife Biologist, Palm Springs Fish and Wildlife Office, 777 East Tahquitz Canyon Way, Suite 208, Palm Springs, CA 92262, phone: 760-322-2070 ext. 217, Tera\_Baird@fws.gov

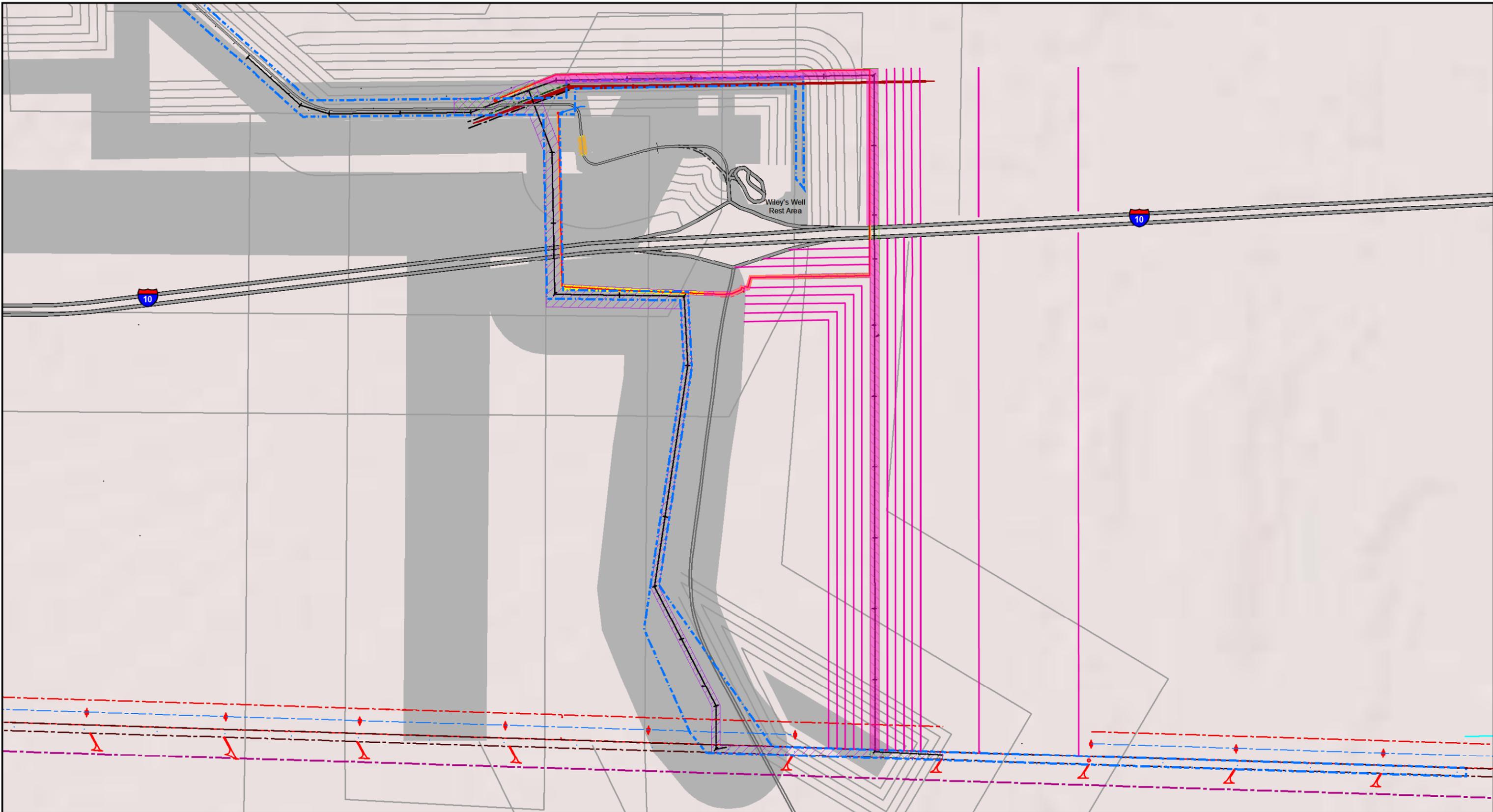
Tetra Tech EC, Inc. and A. Karl. 2009. Biological Resources Technical Report; Genesis Solar Energy Project, Riverside County, CA. Prepared for Genesis Solar, LLC. 79 pp.

Tetra Tech EC, Inc. and A. Karl. 2010. Fall 2009 and Spring 2010 Biological Resources Technical Report; Genesis Solar Energy Project, Riverside County, CA. Prepared for Genesis Solar, LLC. 54 pp.

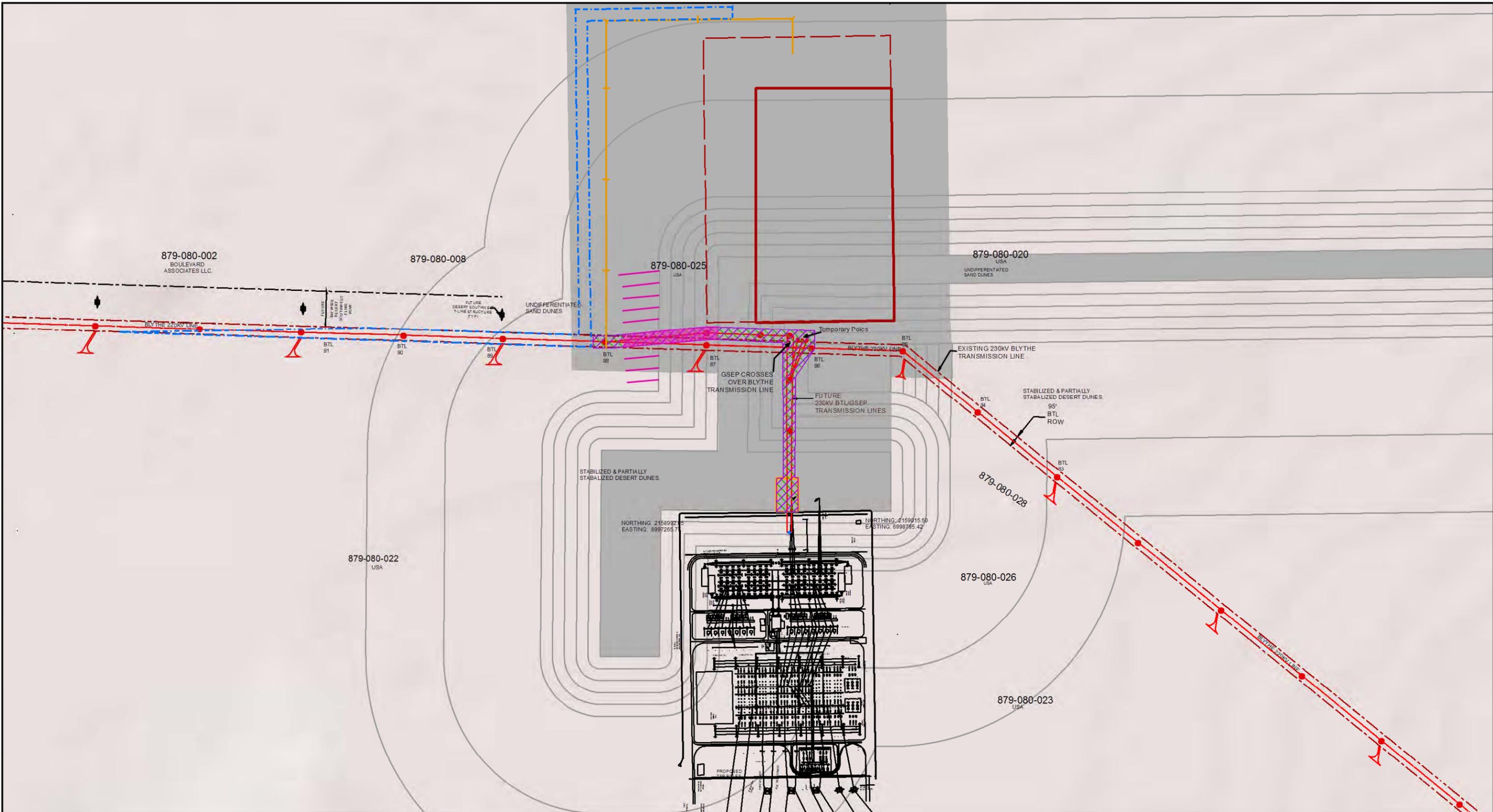
USFWS (U.S. Fish and Wildlife Service). 1992. Field survey protocol for any non-federal action that may occur within the range of the desert tortoise. 22 pp.

**Table 1. Spring 2012 Special-status Species Observations**

Number on Figure 2A and 2B	UTM (NAD 83)		Species	Common Name	Sign Type	Number of Sign	Age/Activity Status	Comments
	Easting	Northing						
1	695273	3719231	<i>Athene cucularia</i>	burrowing owl	burrow	1	inactive	One entrance at kit fox natal den with whitewash and pellets which appeared old.
2	694641	3720436	<i>Corvus corax</i>	common raven	nest	1	active	Two birds observed carrying nesting material to a nest in a communications tower south of I-10 along Wiley's Well Road
3	695082	3719349	<i>Gopherus agassizii</i>	Agassiz's desert tortoise	shell fragment	1	>>4	3 cm
4	695274	3719354	<i>Gopherus agassizii</i>	Agassiz's desert tortoise	shell fragment	1	>>4	5 cm
5	695286	3720976	<i>Gopherus agassizii</i>	Agassiz's desert tortoise	shell fragment	1	>>4	3 cm
6	695216	3720158	<i>Uma scoparia</i>	Mojave fringe-toed lizard	Individuals	3	-	Over 300 m area
7	695585	3719908	<i>Uma scoparia</i>	Mojave fringe-toed lizard	Individuals	2	adult and subadult	
8	695969	3719359	<i>Uma scoparia</i>	Mojave fringe-toed lizard	Individual	1	adult	Active
9	695974	3718778	<i>Uma scoparia</i>	Mojave fringe-toed lizard	Individual	1	adult	Active
10	702275	3718763	<i>Uma scoparia</i>	Mojave fringe-toed lizard	individual	1	adult	
11	702388	3718619	<i>Uma scoparia</i>	Mojave fringe-toed lizard	individual	3	adult and subadult	
12	695273	3719231	<i>Vulpes macrotis</i>	desert kit fox	natal den	1	inactive	Many entrances, most collapsed. One entrance has many scat > 1 yr old.
13	695391	3719155	<i>Vulpes macrotis</i>	desert kit fox	natal den	1	inactive	Old, collapsed, completely caved in



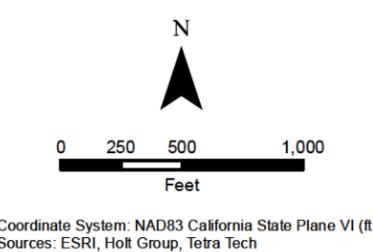
<p><b>Legend</b></p> <ul style="list-style-type: none"> <li> Proposed 230 kV GSEP Transmission Line</li> <li> Genesis Solar Energy Project Right-of-Way</li> <li> Genesis Solar Energy Project Right-of-Way - Option A</li> <li> Genesis Solar Energy Project Right-of-Way - Option B</li> <li> Existing Underground Gas Pipeline</li> <li> Proposed 30' Wide Gas Easement Inside GSEP Right-of-Way</li> <li> Proposed 50' Wide Gas Easement Outside GSEP Right-of-Way</li> <li> Previous 100% Survey Coverage and ZOI Transects</li> <li> 2012 100% Survey Coverage</li> <li> 2012 Buffer Transects</li> </ul>		<p>N</p> <p>0 500 1,000 2,000</p> <p>Feet</p> <p>Coordinate System: NAD83 California State Plane VI (ft) Sources: ESRI, Holt Group, Tetra Tech</p>	<p><b>GENESIS SOLAR ENERGY PROJECT</b> <b>RIVERSIDE COUNTY, CA</b></p> <p><b>FIGURE 1A</b> <b>DESERT TORTOISE SURVEY COVERAGE</b></p>
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--	--------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------



- Legend**
- Existing 230kV Blythe Transmission Line
  - Blythe Transmission Line Right-of-Way
  - Proposed 230 kV GSEP Transmission Line
  - Future Desert Southwest 300-foot Wide Right-of-Way
  - Existing BTL Structure to Remain

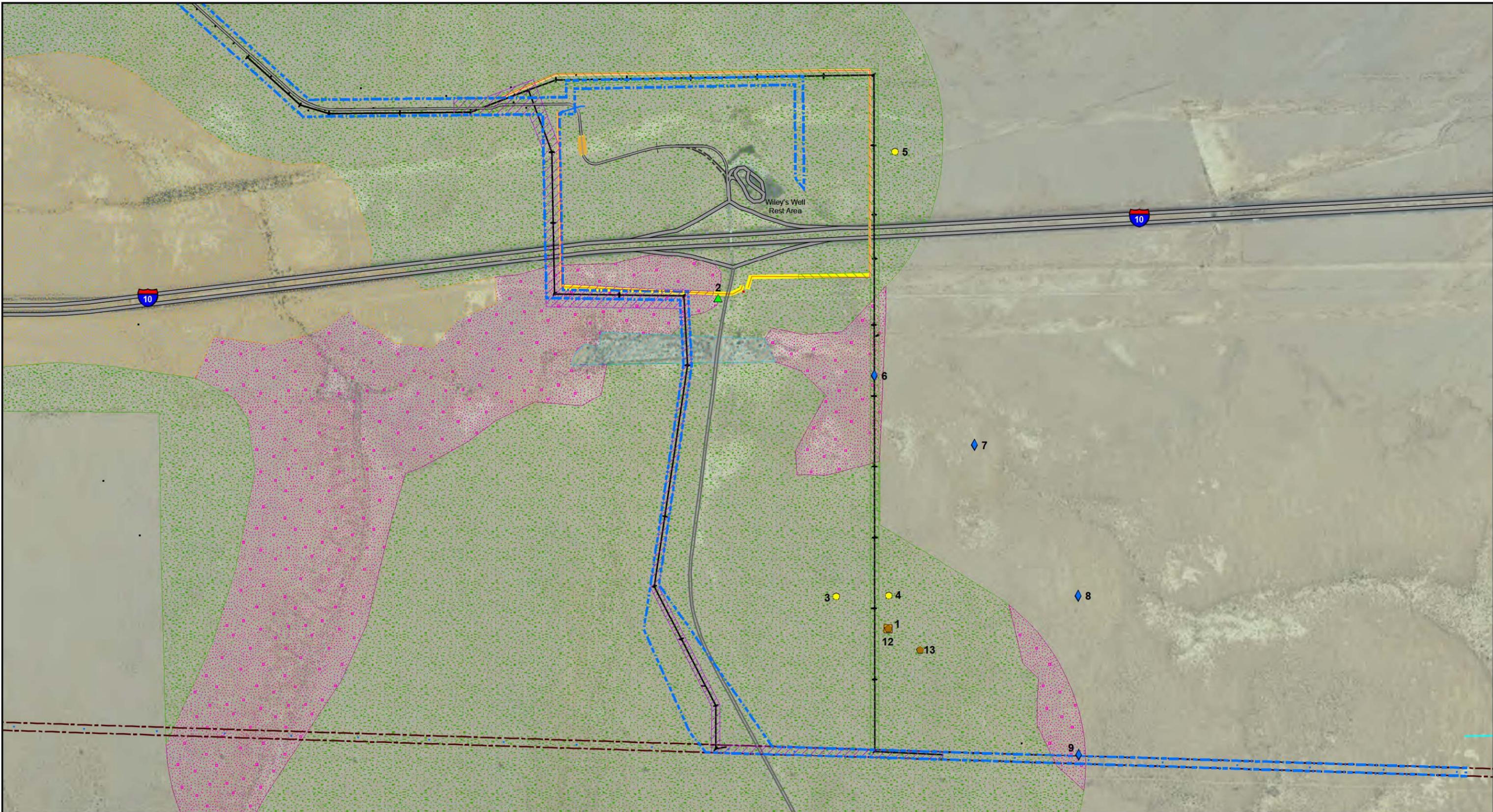
- Genesis Solar Energy Project Right-of-Way
- GSEP Right-of-Way - Option A
- GSEP Right-of-Way - Option B
- Permitted 500kV CRS
- Proposed 230kV CRS Expansion Area
- 400 m and 600 m Buffer Transects

- Previous 100% Survey Coverage and ZOI Transects
- 2012 100% Survey Coverage
- 2012 Buffer Transects



**GENESIS SOLAR ENERGY PROJECT  
RIVERSIDE COUNTY, CA**

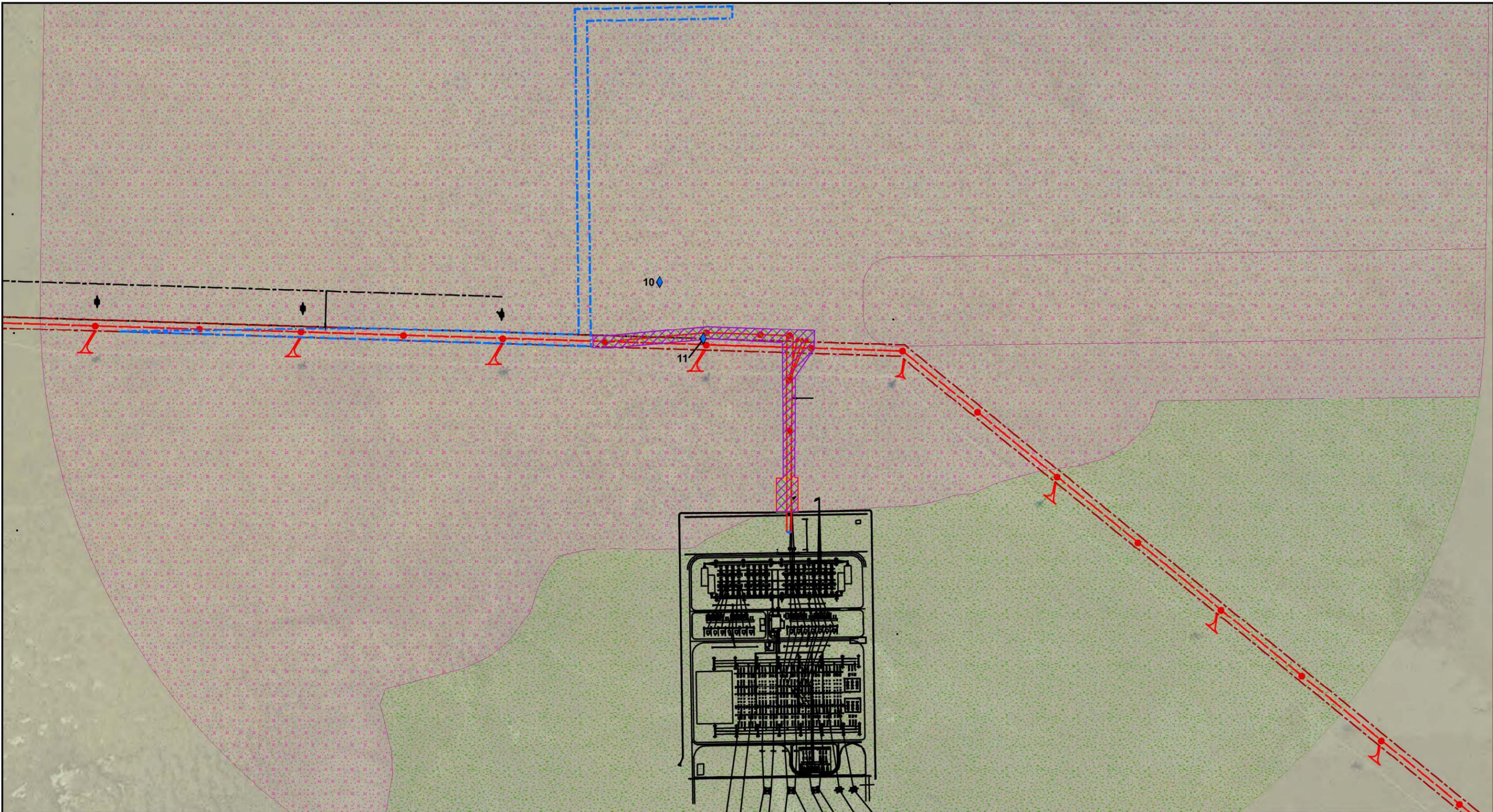
**FIGURE 1B  
DESERT TORTOISE SURVEY COVERAGE**



<b>Legend</b> + Proposed 230 KV GSEP Transmission Line Genesis Solar Energy Project Right-of-Way Genesis Solar Energy Project Right-of-Way - Option A Genesis Solar Energy Project Right-of-Way - Option B Proposed 30' Wide Gas Easement Inside GSEP Right-of-Way		Proposed 50' Wide Gas Easement Outside GSEP Right-of-Way <b>Natural Community Type</b> Borrow Pit - Honey Mesquite Population Creosote Bush Scrub Alliance Playa and Sand Drifts over Playa Stabilized and Partly-Stabilized Desert Dunes with Creosote Bush Scrub Alliance		<b>Special-Status Wildlife Species</b> Permineralized Agassiz's Desert Tortoise Shell Fragment Inactive Burrowing Owl Burrow Active Common Raven Nest Inactive Desert Kit Fox Natal Den Mojave Fringe-toed Lizard		<div style="text-align: center;">             N              0 500 1,000 2,000            Feet         </div> <p>Coordinate System: NAD83 California State Plane VI (ft) Sources: ESRI, Holt Group, Tetra Tech</p>	
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--

**GENESIS SOLAR ENERGY PROJECT**  
**RIVERSIDE COUNTY, CA**  
**FIGURE 2A**  
**SPECIAL-STATUS SPECIES OBSERVATIONS**  
**AND LAND COVER**





- Legend**
- Existing 230kV Blythe Transmission Line
  - == Blythe Transmission Line Right-of-Way
  - + Proposed 230 kV GSEP Transmission Line
  - - - - Future Desert Southwest 300-foot Wide Right-of-Way
  - Existing BTL Structure to Remain

- Genesis Solar Energy Project Right-of-Way
  - GSEP Right-of-Way - Option A
  - GSEP Right-of-Way - Option B
- Natural Community Type**
- Creosote Bush Scrub Alliance
  - Stabilized and Partially Stabilized Desert Dunes with Creosote Bush Scrub Alliance

- Special-Status Wildlife Species**
- ◆ Mojave fringe-toed lizard

N

0 250 500 1,000  
Feet

Coordinate System: NAD83 California State Plane VI (ft)  
Sources: ESRI, Holt Group, Tetra Tech

**GENESIS SOLAR ENERGY PROJECT  
RIVERSIDE COUNTY, CA**

**FIGURE 2B  
SPECIAL-STATUS SPECIES OBSERVATIONS  
AND LAND COVER**

TETRA TECH INC.