

APPENDIX 6.6-2

UPDATED BIOLOGICAL RESOURCES REPORT: SEPTEMBER 2006



Michael Bumgardner
Bumgardner Biological Consulting
11571 Prospect Hill Drive
Gold River, CA 95670-8216

Bumgardner Biological Consulting

September 14, 2006

Joe Stenger
TRC Solutions
2666 Rodman Drive
Los Osos, CA 93402

Dear Mr. Stenger:

As per a request received from TRC Solutions, Bumgardner Biological Consulting (BBC) has completed an updated evaluation of biological resources in the vicinity of the Avenal Energy Project (i.e., proposed project) in Kings County and Fresno County, California (Figure 1 and 2). The evaluation includes review of the current California Natural Diversity Data Base (CNDDB) for the project vicinity, review of the October 2001 Application for Certification (AFC) and supporting biological studies for the proposed project, and a field reconnaissance of the project vicinity (including the proposed transmission line route to the Gates Substation). The updated evaluation was conducted to determine if the information in the October 2001 AFC and supporting documents is current and adequately describes the existing conditions for biological resources within the area of effect of the proposed project. The updated evaluation also augments previous work to include field observations along the entire route of the proposed transmission line. The latter evaluation is needed because the proposed project now includes the construction of approximately five miles of additional transmission line (when compared to the project that was addressed in the October 2001 AFC). The additional five miles of transmission line will be located adjacent to the existing PG&E transmission line corridor and immediately south of the Gates Substation.

The overall conclusion of the updated evaluation is that there are no substantive changes with regard to biological resources in the project vicinity and as addressed in the October 2001 AFC (with one exception addressed below). Furthermore, the approximately five miles of additional proposed transmission line occurs entirely on active agricultural lands on which no special-status species are known to occur other than those that have already been addressed in the October 2001 AFC and supporting documents. The only substantive difference identified during the updated evaluation is that nesting Swainson's hawks (*Buteo swainsoni*), a state-listed threatened species, have been reported to the CNDDB within 10 miles of the

*Quality Biological Services Through Technical
Proficiency and Experienced Management*



project site. Consequently, the California Department of Fish and Game (DFG) may recommend mitigation beyond that which is addressed in the October 2001 AFC to address potential impacts to these nesting pairs.

The remainder of this letter report is organized as follows:

- 1.0 Review Methodology
- 2.0 CNDDDB Query
- 3.0 Site Assessment
- 4.0 AFC Updates

1.0 Review Methodology

BBC conducted the following tasks for the updated evaluation:

- query of the California Natural Diversity Data Base (CNDDDB) for the U.S. Geological Survey 7.5-minute quadrangle within which the proposed project is located and the immediate eight surrounding 7.5-minute quadrangles (i.e., standard CNDDDB query) to determine if new records of taxa previously addressed or taxa that were not previously addressed have been recorded in the vicinity of the proposed project (including taxa that have been state or federally-listed since 2001);
- field reconnaissance of the project site and surrounding lands within one mile of the site (Figure 1) on August 24, 2006 to assess the existing land cover types and identify special-status biological resources (if any);
- field reconnaissance of the preferred electric transmission line corridor from the project site to the Gates Substation and surrounding lands within 1,000 feet (Figure 2) on August 24, 2006 to assess the existing land cover types and identify special-status biological resources (if any); and
- review of the AFC and supporting biological studies to determine what information should be updated or amended (if any).

2.0 CNDDDB Query

The CNDDDB query addressed special-status species occurrences that have been documented within the Avenal, Gujarral Hills, Kettleman City, La Cima, Westhaven, Garza Peak, Huron, Kettleman Plain, and Los Viejos United States Geological Survey (USGS) 7.5-minute topographic quadrangles. All special-status species occurrences within these quadrangles were cross-referenced with the occurrences in Figure 6.6-1 of the October 2001 AFC to identify new occurrences located within the 10-mile regional buffer of the project site.

The CNDDDB query identified four special-status plant taxa within 10 miles of the project site. These taxa include California jewelflower (*Caulanthus californicus*), San Joaquin woollythreads (*Monolopia congdonii*), pale-yellow layia (*Layia heterotricha*), and brittlescale (*Atriplex depressa*). Three of the above special-status

plant taxa were previously identified by the AFC and its supporting biological studies as occurring within the 10-mile regional buffer of the project site. However, brittlescale, a species designated by the California Native Plant Society (CNPS) as a 1b species (i.e., plants that are rare, threatened, or endangered in California and elsewhere), was reported from the California Department of Corrections Pleasant Valley State Prison after the AFC was prepared in 2001. It should be noted that the coordinates of this occurrence place the location in the Gujarral Hills Oil Field (within 10 miles of the project site). However, the identified stated ownership of the land on which the occurrence was found (i.e., Pleasant Valley State Prison) suggests that the coordinates may be wrong and the occurrence could be beyond the 10-mile buffer. Nonetheless, there is no habitat for this species within the active agricultural lands that are located within one mile of the project site or 1,000 feet of the preferred electrical transmission line corridor. The species is typically found in chenopod scrub, meadows, playas, valley and foothill grasslands, and vernal pools. The nearest habitats of these types are located west of Interstate 5 in and near the Kettleman Hills. Consequently, development of the project site is considered to have no impact on the species and it is not addressed further.

The CNDDDB query also identified 11 special-status wildlife taxa within 10 miles of the project site. These taxa include Doyen's trigonoscuta dune weevil (*Trigonoscuta* sp.) (formerly identified as San Joaquin dune weevil), western spadefoot (*Spea hammondi*), blunt-nosed leopard lizard (*Gambelia sila*), western burrowing owl (*Athene cunicularia hypugea*), Swainson's hawk (*Buteo swainsoni*), merlin (*Falco columbarius*), San Joaquin antelope squirrel (*Ammospermophilus nelsoni*), San Joaquin pocket mouse (*Perognathus inornatus inornatus*), short-nosed kangaroo rat (*Dipodomys nitratooides brevinasus*), San Joaquin kit fox (*Vulpes macrotis mutica*), and American badger (*Taxidea taxus*). Seven of these 11 special-status wildlife taxa were previously identified by the AFC and its supporting biological studies. However, the occurrences of Swainson's hawk, merlin, American badger, and western spadefoot have all been reported to the CNDDDB since 2001 and were not previously addressed in the AFC.

In 2005, Swainson's hawk, a state-threatened species, was reported nesting on the west side of the San Luis Canal approximately 0.35 mile north of Gale Avenue and 3 miles east southeast of Huron. The nest tree is located in a flood basin adjacent to the San Luis Canal that supports a stand of cottonwoods and willows. This occurrence is less than seven miles from the project site. A second nesting occurrence, also reported in 2005, was documented 0.3 mile west of Lassen Avenue, 0.4 mile north of Marmon Avenue, and 2 miles north of Huron. The nest tree is in a large cottonwood surrounded by retired agricultural land. This occurrence is less than 10 miles from the project site. These occurrences are within the 10-mile threshold that the California Department of Fish and Game (DFG) established in the 1995 *Staff Report regarding Mitigation for Impacts to Swainson's Hawks (Buteo Swainsoni) in the Central Valley of California* (Appendix A) for evaluating the impacts of loss of foraging habitat on known nesting pairs. Section 3.0 in this letter

report provides information on recommended DFG mitigation requirements when active nests for this species are found within 10 miles of new project development.

Merlin, a California species of special concern, was reported in 2005 approximately 0.4 mile north of Gale Avenue on the west side of the San Luis Canal (i.e., in the flood basin as one of the above nesting pair of Swainson's hawks). This occurrence is located less than seven miles from the project site. Merlin occurs in California only as a wintering species and utilizes a variety of open habitats (e.g., coastal beaches and estuaries, grasslands, oak woodland and savannah, open agricultural lands, etc.). The species is wide-ranging during the winter and tends to occur where there are concentrations of small birds (i.e., primary prey species). There is an extensive amount of suitable foraging habitat for the species in the project vicinity and elsewhere in the Central Valley. Consequently, the loss of potential foraging habitat for this species from development of the project site is a negligible impact and it is not addressed further.

American badger, another California species of special concern, was reported for the vicinity of Huron less than eight miles north of the project site. The occurrence was documented in 1986, but was only recently entered into the CNDDDB. The species occurs in a wide variety of dry, open habitats (e.g., grasslands, oak woodland and savannah, scrub communities, etc.). Active agricultural habitats are not considered suitable for the species due to regular soil disturbance and irrigation which preclude construction and use of the dens the species utilizes. Since the proposed project will occur entirely on active agricultural lands that do not provide suitable habitat, development of the project site is considered to have no impact on the species and it is not addressed further.

Western spadefoot, another California species of special concern, was reported in 2001 from the Arroyo Pasajero Detention Basin. This basin is located 300 feet west of the intersection of Marmon Avenue and Siskiyou Avenue and 1.4 miles north of Huron. This occurrence is less than 10 miles north of the project site. The habitat at this location consists of a seasonally flooded alluvial fan of the Arroyo Pasajero and associated seasonal ponds. Adults and subadults of the species are typically found in grasslands or oak woodland and savannah, but the species requires seasonal wetlands (often vernal pools) for egg-laying and larval development. Active agricultural habitats are not considered suitable for the species due to regular soil disturbance which unearths adults and subadults and destroys potential breeding sites. Consequently, development of the project site is considered to have no impact on the species and it is not addressed further.

3.0 Site Assessment

3.1 Project Site and Vicinity

The field reconnaissance conducted in August 2006 resulted in the determination that the project site and adjacent lands within a one mile radius of the site continue to be in active agricultural use (as depicted in Figure 6.6-4 of the October 2001

AFC). Lands in the project vicinity are mostly farmed by ¼ section and a few parcels now support a crop that is different from what was observed in 2001 (Figure 3). These changes reflect changing agricultural economics and standard crop rotation that occurs in the area. However, there have been no changes that would substantively affect the analysis of impacts to biological resources in the AFC.

The land cover types within one mile of the project site during the August 2006 reconnaissance consisted of orchards (almonds), vineyards, and row/grain crops (cotton, onions, and wheat). Onion and wheat crops were observed only as residuals in recently harvested fields (including the NE ¼ of Section 19 (T21S, R18E) where the proposed project would be located). Though no natural lands occur within one mile of the project site, maintained grasslands occur within the U.S. Bureau of Reclamation right-of-way (ROW) for the San Luis Canal. These grasslands, which occur adjacent to the canal, were described in detail in the October 2001 AFC. Furthermore, no substantive changes within the ROW were observed.

3.2 Electrical Transmission Line Corridor

The land cover types within 1,000 feet of the preferred electrical transmission line alignment between the project site and Gates Substation consisted of orchards (almonds, pistachios, and oranges) and row/grain crops (cotton, onions, and wheat) during the August 2006 assessment. Furthermore, no natural lands or aquatic habitats (either natural or man-made) occur within 1,000 feet of the preferred electrical transmission line alignment.

3.3 Special-Status Species

A primary focus of the field reconnaissance conducted during August 2006 was to assess for the presence of special-status species. The only special-status species that was observed during the field reconnaissance was loggerhead shrike (*Lanius ludovicianus*). A pair of loggerhead shrike was observed at the interface between orchard and row crop lands in the western portion of Section 24 (T21S, R17E). However, impacts to this species were previously addressed in the October 2001 AFC. Furthermore, the recent siting of this species within the project vicinity does not represent new information that would change the analysis of impacts to biological resources in the AFC. Consequently, no special-status species or their habitats, other than those species that were previously addressed by the October 2001 AFC and its supporting biological studies, were observed during the field reconnaissance.

Swainson's hawk was not addressed in the October 2001 AFC or its supporting biological studies due to the absence of nesting records within 10 miles of the project site at the time that the AFC was prepared. However, two occurrences of nesting Swainson's hawks were recorded in 2005 less than 10 miles north of the project site. The DFG's 1995 *Staff Report regarding Mitigation for Impacts to Swainson's Hawks (Buteo Swainsoni) in the Central Valley of California* recommends that mitigation be implemented when new development projects

adversely modify vegetation types/agricultural crops that are considered suitable foraging habitat for Swainson's hawk and the adverse modification is within 10 miles of an active nest site (defined as having been active at least once during the following five years). Vegetation types/agricultural crops that are considered suitable foraging habitat for Swainson's hawk include the following:

- alfalfa;
- fallow fields;
- beet, tomato, and other low-growing field crops
- dry land and irrigated pasture;
- rice land (when not flooded); and
- cereal grain crops (including corn after harvest).

The lands that will be affected by the proposed project supported wheat during 2006 and likely supported other low-growing field crops as part of a standard rotation during the previous years. Consequently, the site provides foraging habitat that is suitable for Swainson's hawk and the DFG may recommend mitigation for the loss of this habitat in accordance with the referenced DFG staff report.

4.0 AFC Updates

The purpose of the review addressed in this letter report was to confirm that the information in the biological resources section of the October 2001 AFC adequately reflects current conditions in the vicinity of the proposed project. Furthermore, it was the purpose of the review to identify specific information that is new and should be reflected in the AFC (where conditions have changed since 2001). Thus, the following portion of the letter report provides a recap of the substantive and new information that should be reflected in the AFC.

Approximately five miles of additional electrical transmission line is now proposed that was not addressed in the October 2001 AFC. However, the proposed transmission line corridor would be located entirely on active agricultural lands that do not support special-status species or other sensitive biological resources (with the possible exception of loggerhead shrike which was addressed in the October 2001 AFC).

Swainson's hawk, a state-threatened species, has been reported to the CNDDDB as nesting within 10 miles of the site. Consequently, the DFG may require mitigation for the loss of the 25 acres of suitable foraging habitat that would occur with construction of the proposed project.

No other substantive issues associated with impacts to biological resources, not previously addressed in the October 2001 AFC, were identified during the updated evaluation. This finding is supported due to the absence of natural lands

September 14, 2006

Page 7

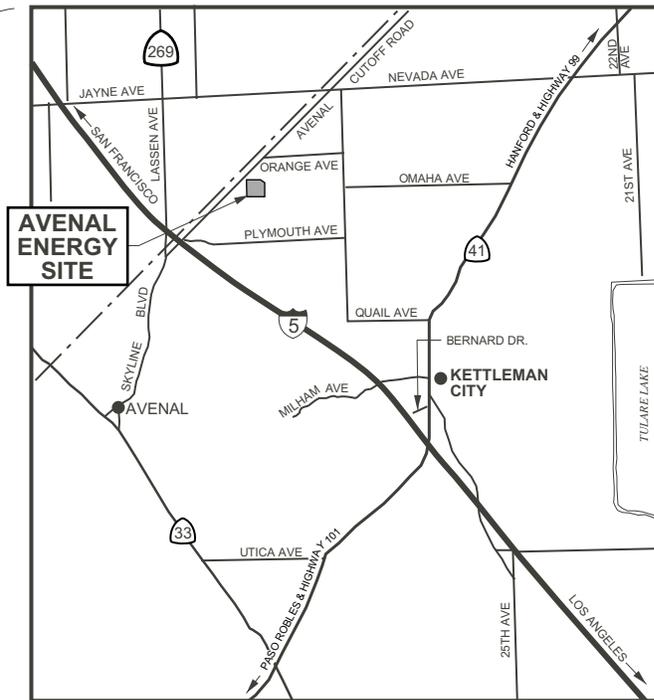
that could provide suitable habitat for special-status taxa within the proposed project's area of influence.

Should you have any questions in regards to the surveys or information presented in this letter report please do not hesitate to contact me (916-638-7368).

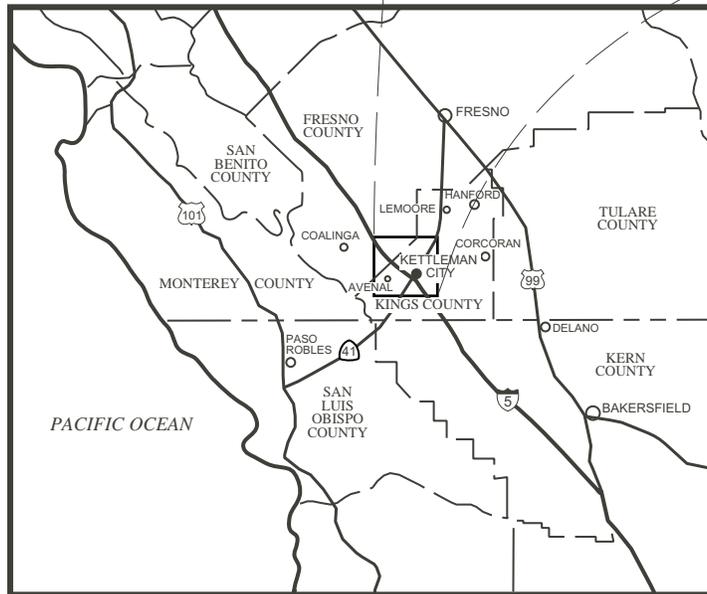
Sincerely,

A handwritten signature in black ink that reads "Michael Bumgardner". The signature is written in a cursive style with a large initial "M".

Michael Bumgardner
Bumgardner Biological Consulting



VICINITY MAP
NOT TO SCALE



REGIONAL MAP

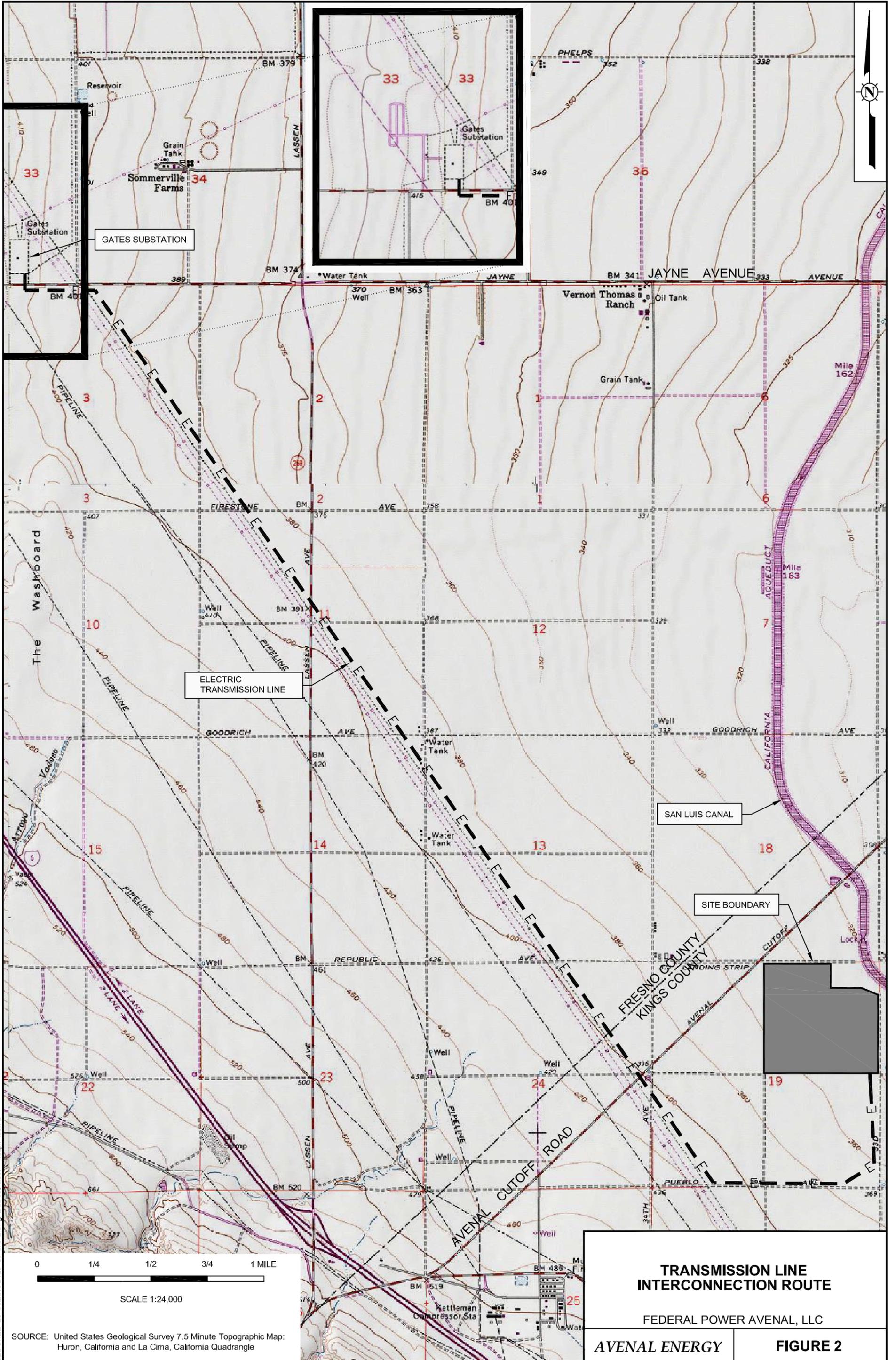


REGIONAL LOCATION MAP

FEDERAL POWER AVENAL, LLC

AVENAL ENERGY

FIGURE 1



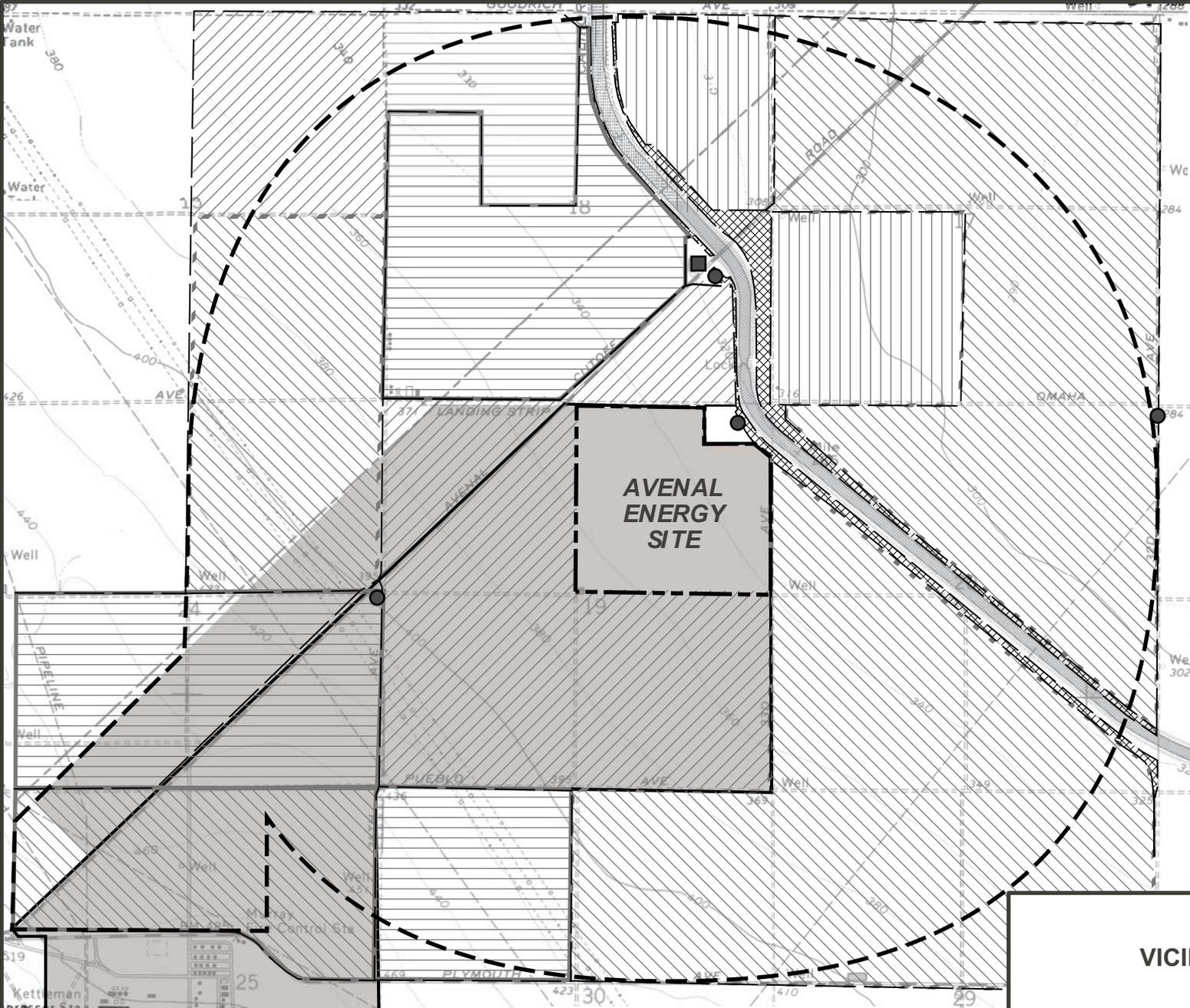
**TRANSMISSION LINE
INTERCONNECTION ROUTE**

FEDERAL POWER AVENAL, LLC

AVENAL ENERGY	FIGURE 2
----------------------	-----------------

I:\DUKE\125155-BIO-2.dwg Dec 03, 2007 - 1:52pm rcdllms

SOURCE: United States Geological Survey 7.5 Minute Topographic Map:
 Huron, California and La Cima, California Quadrangle



LEGEND

-  LIMIT OF AREA WITHIN ONE MILE FROM THE SITE OR WITHIN 1000 FEET OF LINEAR CORRIDORS
-  DRAINAGE BASIN
-  WATER STORAGE POND
-  DISTURBED GRASSLANDS
-  ORCHARD
-  ORCHARD
-  ROW CROPS/GRAIN CROPS
-  VINEYARD
-  INDUSTRIAL ZONE (CITY OF AVENAL GENERAL PLAN AND ZONING ORDINANCE)

VICINITY HABITATS

FEDERAL POWER AVENAL, LLC

AVENAL ENERGY	FIGURE 3
----------------------	-----------------

