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KRCD
Kings River Conservation District

4886 East Jensen Avenue
Fresno, California 93725

Tel: 559-237-5567
Fax: 559-237-5560

www.krcd.org

October 30, 2008

Ms. Shaelyn Stratton
Project Manager
California Energy Commission
1516 Ninth Street, MS40
Sacramento, CA 95814-5512

Re: Kings River Conservation District Community Power Plant Application for Certification (07-AFC-7) Supplement B and Addendum to the Biological Assessment

Dear Ms. Stratton:

Kings River Conservation District (KRCD) hereby submits the attached Supplement B to the Kings River Conservation District Community Power Plant (KRCD CPP) Application for Certification (AFC). The attached Supplement B discusses and analyzes changes that have been made to the KRCD CPP since the AFC was filed in September 2007. Also attached is the Addendum to the KRCD CPP Biological Assessment (BA). The original KRCD CPP BA was previously submitted in November 2007.

As General Manager of KRCD, I hereby attest, under penalty of perjury, that the attached reports are true and accurate to the best of my knowledge. Please contact our consultant, Amy Cuellar of Navigant Consulting at (916) 631-3211 if you have any questions.

Sincerely,

David Orth
General Manager, Kings River Conservation District

File No. 536.02.08
L08-0298

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APPLICATION FOR CERTIFICATION 07-AFC-7
SUPPLEMENT B

KRCD COMMUNITY POWER PLANT

Energy for our Future

Submitted to:
CALIFORNIA ENERGY COMMISSION

OCTOBER 2008

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LIST OF ACRONYMS AND ABBREVIATIONS

ACSR	Aluminum Conductor Steel-Reinforced
AFC	Application for Certification
AFY	Acre-Feet Per Year
APE	Area of Potential Effect
CAAQS	California Ambient Air Quality Standards
CCR	California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CHRIS	California Historical Resources Information System
CNDDB	California Natural Diversity Database
CRHR	California Inventory of Historical Resources
HDD	Horizontal Directional Drill
KCMIL	Thousand Circular Mils
KOPS	Key Observation Points
KRCD	Kings River Conservation District
KRCD CPP	Kings River Conservation District Community Power Plant
kV	Kilovolt
LORS	Laws, Ordinances, Regulations and Standards
LOS	Level of Service
MW	Megawatt
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
O&M	Operation and Maintenance
PG&E	Pacific Gas and Electric
SCG	Southern California Gas Company
SVP	Society of Vertebrate Paleontology
UCMP	University of California Museum of Paleontology
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WWTP	Wastewater Treatment Plant

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EXECUTIVE SUMMARY

The Kings River Conservation District (KRCD) is proposing to construct, own and operate an electrical generating plant near the City of Parlier, in Fresno County. The proposed Kings River Conservation District Community Power Plant (KRCD CPP) is a nominal 565 megawatt (MW) natural gas-fired combined cycle base load power plant. The KRCD CPP includes a construction staging area, electric transmission interconnection, natural gas pipeline interconnection, cooling and potable water interconnections and a domestic sewer interconnection.

KRCD is a multi-county special district public agency that provides resource management for the Kings River region serving agriculture, business and residential communities within a 1.2 million acre service area in portions of Fresno, Kings and Tulare counties. The proposed KRCD CPP is located within the service territory of KRCD. The mission of the KRCD is to provide flood protection, achieve a balanced and high quality water supply, and develop power resources in the Kings River region for the public good.

KRCD filed an Application for Certification (AFC) for the KRCD CPP in September 2007. In November 2007, KRCD CPP AFC Supplement A was submitted in response to California Energy Commissions (CEC) Power Plant Site Certification Regulations (CEC, 2007). The KRCD CPP was deemed data adequate in December 2007.

Since the AFC was filed, several changes to the KRCD CPP have been made. Project changes include a different construction staging area; change to the transmission line alignment; and the addition of construction staging areas along the natural gas pipeline route. KRCD has identified the resource analyses from the AFC that are impacted by these changes and revised those analyses in this KRCD CPP AFC Supplement B. Resource analyses were revised in the areas of Air Quality, Visual Resources, Cultural Resources, Paleontological Resources and Biological Resources.

None of the revised resource analyses resulted in changes or additions to the mitigation measures previously proposed for the KRCD CPP. No additional mitigation is proposed as a result of the project changes. KRCD CPP AFC Supplement B describes project changes, subsequent resource analyses that were completed and their conclusions.

CHAPTER 1.0 INTRODUCTION

1.1 PROJECT OVERVIEW

KRCD is proposing to construct, own and operate an electrical generating plant near the City of Parlier, in Fresno County. The proposed KRCD CPP is a nominal 565 MW natural gas-fired combined cycle base load power plant.

The project will connect to Pacific Gas and Electric's (PG&E) electrical transmission system via a new double circuit 230 kilovolt (kV) radial transmission line running to the PG&E McCall substation, located on the west side of Leonard Avenue and north of Manning Avenue and approximately five miles to the west of the project site.

Fuel for the KRCD CPP will be natural gas supplied from a new approximately 26 mile long, 20 inch underground pipeline from the Southern California Gas Company (SCG) Line 7000 near the City of Visalia, California. The gas pipeline closely follows existing road right-of-way corridors. The natural gas will be compressed and filtered on the KRCD CPP plant site to meet applicable pressure requirements.

The primary source of process makeup water for the KRCD CPP will be secondarily treated reclaimed water delivered via new underground pipeline interconnections from the City of Parlier Wastewater Treatment Plant (WWTP) and the City of Sanger WWTP effluent percolation and evaporation ponds located on Lincoln Avenue (i.e., Lincoln Ponds). Approximately 3,485 acre-feet per year (AFY) will be required for power plant cooling and other uses (process demand water). The reclaimed water will be treated on site to meet California Code of Regulations (CCR) Title 22 requirements. The Parlier WWTP is located to the north side of the plant site, and the interconnection will be located at the northern plant site boundary with no offsite linear interconnection. The proposed pipeline from the Lincoln Ponds is expected to be 18 inch diameter, approximately five miles long and to be located primarily along existing roadways. Currently two options are being considered for the water pipeline interconnection to Lincoln Ponds (i.e., Water Supply Pipeline Option 1 and Option 2). Up to four new shallow wells recovering percolated effluent will also provide a back-up cooling water supply.

Potable water for domestic use will be supplied by a new groundwater well to be installed on the project site. There is no offsite linear associated with the potable water supply.

Domestic wastewater will be discharged to the Parlier WWTP. The sewer interconnection is located at the northern boundary of the project site with no offsite linear.

CHAPTER 2.0 PROJECT CHANGES

Since the AFC was filed, several changes have been made to the KRCD CPP. The following discussion describes these specific changes, which include:

- A different construction staging area;
- Change to the transmission line alignment; and
- Addition of construction staging areas along the natural gas pipeline route.

2.1 PLANT CONSTRUCTION STAGING AREA

In the KRCD CPP AFC, the temporary plant construction staging area was identified as approximately 15 acres of a 40 acre parcel to the immediate south of the project site. The western portion of the parcel to the south (i.e., the 15 acre construction staging area) is currently used for agricultural purposes (vineyards). The balance of the parcel to the south includes vacant land in the northern portion and is occupied by several structures and rural dwellings in the southern portion.

Since the AFC was filed, the 15 acre construction staging area has been replaced with a new construction staging area. The new construction staging area is located on the western side of Bethel Avenue and consists of a 60 acre parcel located to the northwest of the project site and directly west of the City of Parlier WWTP. KRCD plans to use the southern 20 acres of the 60 acre parcel for KRCD CPP construction staging and laydown. The new construction staging area currently contains a leveled actively farmed and irrigated alfalfa field. Lands surrounding the new construction staging area include actively farmed agricultural orchards and vineyards.

AFC Figure 1-3, Rev. 1 shows the location of the new construction staging area. The general arrangement of the KRCD CPP including the new construction staging area is shown on AFC Figure 2-2, Rev. 1.

2.2 ELECTRIC TRANSMISSION INTERCONNECTION

Electric interconnection for the KRCD CPP will be provided by a new approximately five mile long 230 kV radial transmission line that will connect the KRCD CPP to McCall Substation. The electrical transmission line will be a 230 kV double circuit line utilizing aluminum conductor steel-reinforced (ACSR) 795 thousand circular mils (kcmil) cable. Structures will be single steel pole. The original route is identified on KRCD CPP AFC Figure 1.3 and also in Chapter 4 Electric Transmission, Section 4.2 Transmission Interconnection.

Subsequent to further negotiations with landowners along the original route, certain portions of the transmission line route were relocated. The new transmission line route is shown on AFC Figure 1.3, Rev.1. The new route will proceed directly north from the western edge of the

KRCD CPP project site along the eastern side of Bethel Avenue for just under one-half mile. The line then crosses to the west side of Bethel Avenue and continues to proceed north and across Manning Avenue for approximately three-quarters of a mile. The transmission line route then proceeds directly west between private vineyard rows and onto an unpaved farming road for approximately one-half of a mile and then north for approximately one-eighth of a mile along Indianola Avenue. The line then continues west along an unpaved farm road and along Parlier Avenue, under the existing PG&E Balch-McCall and Hass-McCall 230 kV lines and across the Manning Recharge Basin for approximately three and one-quarter miles. The transmission line will enter the McCall Substation from the west, connecting to new bays at the southern end of the substation. The transmission line route is approximately five miles long. AFC Figure 1-3, Rev. 1 shows the location of the new transmission line route as well as the original route evaluated in the KRCD CPP AFC. AFC Figure 2-10, Rev. 1 shows the settled areas, parks, recreational and scenic areas in the area of the new transmission line route.

2.3 NATURAL GAS PIPELINE STAGING AREAS

The natural gas pipeline for the KRCD CPP will be constructed below-grade along its entire route, except at line termination points at the project site and at the connection to SCG Line 7000. The gas pipeline route will include multiple crossings of local (county) roads, highways, railroad tracks, creeks, irrigation canals and ditches. While most of the pipeline length will be constructed using an open trench method of construction, there are some right-of-way crossings that have been identified for special construction treatment, these includes the crossings of Highway 99, the Union Pacific Railway, the Kings River and Cross Creek areas. For both the railroad and highway crossing, the pipeline will be installed using road bores to minimize the affects upon traffic, and to comply with applicable permits. Boring across other more minor roadways may also be required depending upon possible changes to traffic flow patterns on the roads. The KRCD CPP AFC originally identified five natural gas pipeline construction staging areas which each have an approximate size of 200 feet by 200 feet.

Since the KRCD CPP AFC was filed, KRCD has committed to Horizontal Directional Drill (HDD) completely under both the Kings River and the intermittent drainages of Cross Creek. The HDD technique is commonly used for long distance underground boring such as under rivers, lagoons, or highly urbanized areas. Utilizing the HDD methods will avoid any disturbances to the bed and bank of the Kings River or biological resources in the Cross Creek area. In addition, HDD offers several advantages compared to other trenchless techniques including:

- Complicated crossings can be quickly accomplished with a great degree of accuracy since it is possible to monitor and control the drilling process;
- Sufficient depth can be attained to avoid other utilities;
- Danger of river bed erosion is eliminated; and

- Only a small construction footprint is required.

Since the decision to HDD these areas was made, further field investigation has determined that additional construction laydown areas will be necessary to complete the HDDs in the Kings River and Cross Creek areas. There are now a total of nine construction staging areas for the natural gas pipeline, including three construction staging areas for general pipeline construction and six HDD construction staging areas (two for the Kings River crossing and two for each of the two Cross Creek crossings). Each staging areas is approximately 200 feet by 200 feet (or one acre) in size. The six HDD construction staging areas are intended to be a temporary location set aside for construction equipment to be used during the HDD operations including trucks, drilling equipment, possible welding equipment and possibly as an area to hold pipeline sections to be eventually placed in the horizontal hole drilled under the river and intermittent drainages. KRCD will negotiate and obtain any required easements prior to construction. All nine construction staging areas are shown in AFC Figure 1-3, Rev. 1.

HDD techniques will be used to install the 20 inch natural gas pipeline under the waters/wetlands at three sites:

- Kings River near Kingsburg (one HDD) - Section 17, Township 16S, Range 23E, Reedley Quad, Fresno County
- Cross Creek intermittent drainages south of Traver (two HDDs) - Sections 34 and 35, Township 17S, Range 23E, Traver Quad, Tulare County

KRCD recently requested landowner permission to complete necessary environmental field surveys for these supplemental project areas. At the same time, KRCD again requested landowner permission for all those parcels originally identified in the AFC and for which access was not previously granted.

CHAPTER 3.0 ENVIRONMENTAL CONSIDERATIONS

The KRCD CPP AFC (dated September 2007) analyzes 16 environmental resource areas for potentially significant impacts associated with project development, construction and operation. Each section describes the environmental setting, evaluates potentially significant impacts, and proposes mitigation measures that reduce impacts to less than significant levels. In addition, each section identifies laws, ordinances, regulations, and standards (LORS) applicable to each resource area as well as additional permits necessary for the project and the permitting agency responsible for issuing the permit.

The following chapters of this Supplement B summarize the evaluation of whether or not project changes, as described in Chapter 2.0, result in any changes to the impacts discussed and mitigation proposed in the KRCD CPP AFC.

The project changes, as described in Chapter 2.0, clearly do not impact the analysis of the project contained in the KRCD CPP AFC for the following environmental resource areas as explained below.

Noise. The project changes do not change either the construction or operational noise levels that were calculated and evaluated in the KRCD CPP AFC.

Water Resources. The project changes do not change the KRCD CPP water demands or selected water supplies, as outlined in the KRCD CPP AFC. The Drainage Erosion Control and Sedimentation Plan, which was previously provided as part of the response to CEC Data Request 70, addressed the project changes discussed herein (KRCD, 2008a).

Land Use and Agriculture. The new construction staging area currently contains a leveled, actively farmed and irrigated alfalfa field. The new transmission line route crosses actively farmed orchards and vineyards and parallels and/or crosses a number of local public and private roads. There are also residences in the vicinity. The natural gas pipeline HDD construction staging areas are all located on leveled, actively farmed and irrigated agricultural land, including alfalfa and corn fields and a peach orchard. Construction activities on the new construction staging area and HDD construction staging areas will result in short-term land use impacts that are temporary in nature and are not considered significant. There will be no permanent changes in land use on the construction staging areas.

Depending on the placement of the transmission poles, the transmission line could result in minor areas of agricultural land that are taken out of production. KRCD has and will continue to work with individual landowners on the placement of the poles to minimize the potential for impacts to land use or agricultural land. The transmission line route was revised based on the

results of further landowner negotiations and to further minimize the potential for impacts to land use or agricultural land.

Traffic and Transportation. The new construction staging area is sufficient to meet KRCD CPP construction needs of approximately six acres for temporary parking of construction personnel and additional area for staging of materials and supplies. As stated in the KRCD CPP AFC, most of the construction traffic is expected to follow U.S. 99 south from Fresno to Manning Avenue east to South Bethel. The new construction staging area is located on the west side of Bethel Avenue, while the KRCD CPP project site is located on the east side of Bethel Avenue, therefore most of the construction traffic would turn right and park in the new construction staging area.

During the evening hour, all intersections are forecast to continue operating at existing Level of Service (LOS) except the intersection of Manning and South Bethel Avenues. This intersection would deteriorate to a LOS F with peak levels of construction traffic if construction traffic oriented to the north on US 99 is directed north on South Bethel Avenue and attempts to make a left turn onto westbound Manning Avenue. To mitigate for this impact, project construction traffic departing the site to northbound U.S. 99 will turn right out of the construction staging area and be directed south on South Bethel Avenue to Mountain View Avenue and then west on Mountain View Avenue to U.S. 99. If outbound construction related traffic oriented north on U.S. 99 is traffic is diverted south to Mountain View Avenue and then west to the highway, the limited volume of project construction traffic oriented east on Manning Avenue will not impact the intersection because it will all be turning right during the evening peak hour.

Public Health. The project changes do not result in any changes to potential impacts from airborne emissions of non-criteria pollutants, specific thresholds or reporting quantities from those evaluated in the KRCD CPP AFC.

Hazardous Materials. The project changes do not result in any changes to the hazardous materials that will be used or stored on the site during KRCD CPP construction and operation and that were evaluated in the KRCD CPP AFC.

Waste Management. The project changes do not result in any changes to the hazardous and nonhazardous wastes that will be generated during KRCD CPP construction and operation and that were evaluated in the KRCD CPP AFC.

Worker Health & Safety. The project changes do not result in any changes to health and safety issues that many be encountered during KRCD CPP construction and operation and that were evaluated in the KRCD CPP AFC.

Geologic Resources & Hazards. The project changes do not result in any changes to geologic resources and hazards that may be encountered during KRCD CPP construction and operation and that were evaluated in the KRCD CPP AFC.

Soils. The project changes do not result in any changes to potential effects on soils in the KRCD CPP project area and that were evaluated in the KRCD CPP AFC.

Socioeconomics. The project changes do not result in any changes to socioeconomic or environmental justice issues that were evaluated in the KRCD CPP AFC.

Since these resource areas are not affected by the project changes, they are not discussed any further in this document. However, the remaining environmental resource areas (Air Quality, Visual Resources, Cultural Resources, Paleontological Resources and Biological Resources) are affected by the project changes and are therefore discussed in the following sections.

3.1 AIR QUALITY

The Air Quality section of the KRCD CPP AFC provides an assessment of the potential risks to human health associated with the airborne emission of criteria pollutants (i.e., emissions for which either National Ambient Air Quality Standards (NAAQS) or California Ambient Air Quality Standards (CAAQS) have been established) from normal project operations. It also addresses the potential impacts that can result from KRCD CPP criteria pollutant emissions, and discusses the potential for cumulative impacts along with proposed mitigation measures.

This section of KRCD CPP AFC Supplement B summarizes the evaluation of whether or not the project changes, as described in Chapter 2.0, result in any changes to the impacts discussed and mitigation measures described in KRCD CPP AFC Section 8.1-Air Quality. Information that is not discussed below has not changed from what is presented in the KRCD CPP AFC (KRCD, 2007), AFC Supplement A (KRCD, 2007a) or responses to CEC data requests (KRCD, 2008 and 2008a) all of which have previously been provided to the CEC.

3.1.1 Construction Emissions Rates and Impacts

Air emissions resulting from the KRCD CPP construction phase are estimated in the AFC to serve as a basis for the construction emissions impact assessment. The emissions estimates for construction include equipment exhaust from construction equipment, delivery vehicles and worker travel as well as fugitive dust from windblown erosion and the movement of vehicles on the construction site. These construction emissions estimates are included in KRCD CPP AFC Appendix 8.1-3, Construction Phase Emissions and Impacts.

As a result of the project changes discussed in Chapter 2.0, air emissions resulting from KRCD CPP construction were remodeled assuming the use of the new staging area (i.e. the southern 20

acres of the 60 acre parcel) rather than the 15 acre staging area adjacent to the southern end of the project site. The results of the remodeling are included in Appendix 8.1-3, Revised Construction Phase Emissions and Impacts.

Results of the revised modeling show that the impacts associated with the new construction staging area are only slightly different from those of the construction staging area that was previously identified. The overall change is not significant and does not result in any changes to the impacts discussion and mitigation measures described in KRCD CPP AFC, Section 8.1-Air Quality.

3.1.2 Conclusions

The project changes do not result in any significant changes to the impacts discussed and mitigation proposed in the KRCD CPP AFC Section 8.1-Air Quality.

3.2 VISUAL RESOURCES

The Visual Resources section of the KRCD CPP AFC documents the visual conditions that currently exist in the project area and discusses the potential environmental consequences as they relate to visual resources, including construction, operational and cumulative impacts as well as mitigation measures proposed to reduce project impacts on visual resources. Applicable permits required and agencies involved are also included.

This section of KRCD CPP AFC Supplement B summarizes the evaluation of whether or not the project changes, as described in Chapter 2.0, result in any changes to the impacts discussed and mitigation measures described in KRCD CPP AFC Section 8.3-Visual Resources. Information that is not discussed below has not changed from what is presented in the KRCD CPP AFC (KRCD, 2007), AFC Supplement A (KRCD, 2007a) or responses to CEC data requests (KRCD, 2008 and 2008a) all of which have previously been provided to the CEC.

3.2.1 Project Site Visibility

The general area from which the KRCD CPP is visible is referred to as the project viewshed. The project viewshed includes close range and more distant viewing locations in the vicinity. Where existing vegetation and development do not intervene, expansive open landscape views are available from many locations in this vicinity. The project viewshed includes locations along public roadways as well as some places within residential areas and commercial sites. AFC Figure 1-3, Rev. 1, in Chapter 2.0, delineates the generalized project viewshed. This map was developed based on a review of topographic maps, aerial and ground level photographs, and field observations.

A set of photographs of the project area documents the existing visual character, as seen from close range and distances of up to two miles away. These were included in the KRCD CPP AFC

as Figure 8.3-2 (on-site views); Figures 8.3-3a through 8.3-3f (emphasize views towards the power plant site); and Figures 8.3-4a and 8.3-4b (views of the transmission line route). The locations of photo viewpoints are delineated in the AFC on Figure 8.3-5 for the project site and on Figure 8.3-6 for the transmission line route.

3.2.1.1 New Project Photos

In September 2008, additional photos were taken in the project area to capture the new transmission line routing. These new photos are provided in attached AFC Figures 8.3-4a, Rev.1 and 8.3-4b, Rev. 1. Photo T-A on AFC Figure 8.3-4a Rev 1. shows an open view towards the west from Indianola Avenue at a point in line with East Parlier Avenue. Photo T-B depicts vegetation associated the drainage area to the east of South Del Rey Avenue. Existing structures that are visible in the landscape include numerous overhead distribution lines (Photos T-C through T-E).

At South Indianola Avenue, the route proceeds in a westerly direction for approximately three and one-quarter miles along East Parlier Avenue to the McCall Substation located on Leonard Avenue. As shown on Photo T-D, the view east on East Parlier Avenue at South McCall Avenue, East Parlier Avenue is a local rural roadway without a painted centerline. Photos T-C and T-E show views toward the transmission line route from McCall Avenue. This section of the transmission line route is approximately one-quarter mile north of an existing PG&E right of way with 230 kV line with lattice towers. Photo T-F shows a close view of the existing McCall Substation from South Leonard Avenue, and Photo T-G depicts the view from East Manning Avenue northwards towards the substation. Attached AFC Figure 8.3-6, Rev. 1 depicts the locations from which these photographs were taken.

3.2.2 Sensitive Viewing Areas and Key Public Viewpoints

In order to establish a framework for evaluating the potential visual changes associated with the construction and operation of the proposed KRCD CPP, sensitive viewing areas within the project viewshed were identified in the vicinity. For the purposes of this analysis the primary potentially affected sensitive viewing areas include public roadways and residential areas.

The KRCD CPP AFC also contains four key observation points (KOPs) which were selected from these sensitive viewpoints for more detailed analysis including the preparation of visual simulations. The representative sensitive viewpoints and KOPs were identified in the KRCD CPP AFC and were based on consultation with CEC staff. Three KOPs were chosen to depict the visual effects associated with the proposed KRCD CPP and one additional KOP was selected for the transmission line route.

3.2.2.1 New Visual Simulations

Three of the four visual simulations provided in the KRCD CPP AFC were modified in this supplemental visual resources analysis to reflect the revised transmission line route. Since there are no above ground features associated with the construction staging areas and HDD construction laydown areas they resulted in no changes to the simulations. The KOPs and revisions to the simulations are summarized below.

KOP-1 (KRCD CPP AFC Figure 8.3-7) shows the relatively close-range, unobstructed view from the south along South Bethel Avenue near the intersection of East Dinuba Avenue. KOP-1 was modified to include the transmission line on the right (east) side of Bethel Avenue as it leave the project site and runs north towards Manning Avenue. Existing transmission and distribution lines are also visible in this view. Revised KOP-1 is attached as AFC Figure 8.3-7, Rev. 1.

KOP-2 (KRCD CPP AFC Figure 8.3-8) shows a view of the KRCD CPP from South Bethel Avenue approximately one-third mile away to the north. From this location, mature vegetation associated with a rural residence partially screens the site. The simulation indicates that from this location, portions of the new switchyard will be visible along the east (left) side of South Bethel Avenue. Portions of the Heat Recovery Steam Generators (HRSGs), cooling tower stacks, and other project elements are also visible from between the cypress trees to the right of the image. These tall, columnar trees and other foreground landscape features associated with residences will partially screen views of the project from this general area. As in the other view from South Bethel Avenue, proposed landscaping will partially screen lower portions of the project, and the project landscaping will provide a greater degree of visual screening as it matures. On the left (east) side of South Bethel Avenue the new transmission line is visible. The line crosses to the right (west) of South Bethel Avenue to the north of the viewpoint. Existing transmission and distribution lines are visible in this view. Revised KOP-2 is attached as AFC Figure 8.3-8, Rev. 1.

KOP-3 (KRCD CPP AFC Figure 8.3-9) is a view from heavily traveled East Manning Avenue at the Kingsburg Branch Canal. This view portrays the site from the northeast near several residences. KOP-3 has not been modified as a result of the project changes.

KOP-4 (KRCD CPP AFC Figure 8.3-10) shows views towards the east of the transmission line crossing of East Manning Avenue as seen from Manning Avenue east of South Bethel Avenue. KOP-4 was modified to show the new transmission line crossing of Manning Avenue. The transmission line is approximately 1000 feet away from this vantage point. Open views towards the route crossing are available, and existing vegetation or structures provide minimal screening. As shown in this image, an existing overhead distribution line runs parallel to East Manning Avenue. Existing transmission towers are also visible from points along this roadway. In this

respect, the new transmission structures will represent a minor, incremental visual effect. Revised KOP-4 is attached as AFC Figure 8.3-10, Rev. 1.

3.2.3 Conclusions

The project changes do not result in any significant changes to the impacts discussed and mitigation proposed in the KRCD CPP AFC Section 8.3-Visual Resources.

3.3 CULTURAL RESOURCES

KRCD CPP AFC Section 8.14 analyzes the potential effects on cultural and archeological resources associated with the construction, operation and maintenance (O&M) of the KRCD CPP. It provides a brief background of the project area (prehistory, ethnography and history) and the results of a records search. The section also includes a discussion of the methods and results of the archaeological field survey and a description of the cultural resources identified within the project area, including a discussion of their potential significance and potential project related effects.

This section of KRCD CPP AFC Supplement B summarizes the evaluation of whether or not the project changes, as described in Chapter 2.0, result in any changes to the impacts discussed and mitigation measures described in KRCD CPP AFC Section 8.14-Cultural Resources. Information that is not discussed below has not changed from what is presented in the KRCD CPP AFC (KRCD, 2007), AFC Supplement A (KRCD, 2007a) or responses to CEC data requests (KRCD, 2008 and 2008a) all of which have previously been provided to the CEC.

3.3.1 Summary of Investigation

To assess the impact of the project changes, a supplemental cultural resource inventory of the KRCD CPP was conducted, including field surveys of the supplemental project area. Most of the project area was previously surveyed for cultural resources in 2007 (Shapiro and Kovak, 2007). During these surveys, some of the project parcels were not accessible as permission to enter had not been granted. The current survey includes those project areas for which access was recently granted. The survey area includes the new 60 acre construction staging area across from the plant site, two and one-half miles of the transmission line route (including parcels for which access was granted since the KRCD CPP AFC was filed), and one of the natural gas pipeline construction staging areas[1]. The supplemental survey area is shown on Figures 2-4, Rev. 1. These figures were originally provided as part of the Archaeological Survey Report (Shapiro and Kovak, 2007). The total KRCD CPP project area which was field surveyed is also identified on the KRCD CPP Project Survey Coverage maps which were previously provided as a response to

[1] There are now a total of nine construction staging areas proposed for the natural gas pipeline, including three construction staging areas for general pipeline construction and six construction staging areas for installations of the HDDs.

CEC Cultural Resources Data Request 16 in Response Set #2 to CEC Data Requests 1-89, October 2008 (KRCD, 2008).

The area of potential effects (APE) for this supplemental survey includes the 60 acre construction staging area, a 200 foot wide corridor along the transmission line route and the construction staging area where permission to access was granted. These project components are located within the following Townships, Ranges, and Sections on the corresponding United States Geological Survey (USGS) topographic maps:

- Township 15 South, Range 21 East, Section 24 and Township 15 South, Range 22 East, Section 19 of the *Conejo (*USGS, 1963) 7.5' USGS Quadrangle map
- Township 15 South, Range 22 East, Sections 19, 20, 21 and 28 of the *Selma (*USGS 1964, photorevised 1981) 7.5' USGS Quadrangle map
- Township 17 South, Range 23 East, Section 9 of the *Traver (*USGS 1949, photorevised 1969) 7.5' USGS Quadrangle map

This supplemental study was conducted to meet cultural resource regulatory compliance with both the California Environmental Quality Act (CEQA) and Section 106 of the National Historic Preservation Act (NHPA).

3.3.2 Background and Context

The project area is located within the eastern periphery of the San Joaquin Valley near the towns of Selma, Kingsburg, Traver, and Goshen in Fresno and Tulare Counties, California. Elevation in the project area ranges from 275 feet above mean sea level near the Town of Goshen to 350 feet near the Town of Sanger. The San Joaquin Valley is the southern portion of the Great Valley, the 50 mile wide elongated lowlands between the Sierra Nevada and the Coast Ranges that extends from the Cascade Range to the Tehachapi Mountains (Norris and Webb 1990:412). Additional background on the project area environment, prehistory, ethnography, and history is provided in the 2007 Archaeological Survey Report (Shapiro and Kovak 2007) and KRCD CPP AFC Section 8.14, both of which were previously provided to the CEC.

3.3.3 Records Search Results

Prior to conducting the field survey for the KRCD CPP AFC in 2007, a records search for the project area was conducted at the Southern San Joaquin Valley Information Center of the California Historical Resources Information System (CHRIS) at California State University, Bakersfield. References consulted include records of previous cultural resource studies and resources within a mile of the project area. In addition, the following inventories were consulted: the National Register of Historic Places (NRHP); the California Register of Historical Resources (CRHR); California Inventory of Historical Resources; the California Historical

Landmarks; the California Points of Historical Interest; and other pertinent historic data available at the Information Center.

According to the records search, small portions of the project area had been previously surveyed for cultural resources. Only two known resources were identified within the project area, both of which represent historic era irrigation canal features. These are described in the following paragraph. Information regarding cultural resources and historic buildings within the project area was also requested from the Fresno County Library, Fresno County Historical Society, Tulare County Historical Society, Tulare County Planning Department, Tulare County Museum, and Reedley Museum. The Fresno County Public Library was the only positive response and they provided a copy of the Fresno County Historical Landmarks and Records Commission – Interim Site Index. The index had been compiled from the NRHP, the California Historical Landmark List, the Native Sons of the Golden West, the City of Fresno Historic Properties List, the Fresno County Historic Landmarks and Records Advisory Commission List, and the E Clampus Vitus list. A copy of the index was previously provided to the CEC as Appendix A of the 2007 Archaeological Survey Report (Shapiro and Kovak, 2007) along with the various records of conversation. None of these properties are located within the supplemental project area.

The results of the records search from the Southern San Joaquin Valley Information Center indicate that there have been 13 cultural resource studies within the overall project area and 25 additional cultural resource studies within a 1 mile radius of the project area. As stated above, two previously recorded sites, both irrigation ditches, are located within the overall project area. Four other formally recorded cultural resources and two "Noren" sites (N-10 and N-12) are within 1 mile of the project area. Details of the record search results are provided in the 2007 Archaeological Survey Report (Shapiro and Kovak, 2007). None of the previously recorded sites are located within the supplemental project area.

Prior to conducting the field survey for the KRCD CPP AFC in 2007, Pacific Legacy also consulted with the California Native American Heritage Commission (NAHC) on December 18, 2006. The NAHC was asked to search their Sacred Lands Inventory File and to provide a list of local Native American representatives for the project area. They responded on December 26, 2006 that no known sites are within the current project area; however, they provided a contact list of local groups and individuals with potential letters, and letters were sent to these contacts on January 3, 2007. Follow-up phone calls were made to Native American representatives on January 31, 2007. Only one individual, Lawrence Bill, was reached. He expressed his general concerns of encountering human remains in the project area. No other responses have been received from any of the other Native American contacts. All consultation correspondence was previously provided to the CEC as Appendix B of the 2007 Archaeological Survey Report (Shapiro and Kovak, 2007).

The supplemental survey area was completely covered by the 2007 record search and Native American consultation and no additional record searches or Native American consultations were required associated with the project changes.

3.3.4 Pedestrian Archaeological Survey and Results

A systematic archaeological survey of the supplemental project area was conducted on March 7, 2008 and September 10-11, 2008 by Pacific Legacy archaeologists William Shapiro, M.A. and Mike Elliott, B.A. A resume for Mr. Shapiro was previously provided as an appendix to the KRCD CPP Archaeological Survey Report (Shapiro and Kovak, 2007). A resume for Mr. Elliot is included as Appendix 3.3-1.

The supplemental project APE was surveyed with the aid of topographic and aerial maps, and by using parcel and property owner information. The APE was surveyed using systematic transects averaging 10 to 15 meters wide. Inspection of the transmission line segments consisted of a 200 foot wide corridor (100 feet on either side of the route centerline). The natural gas pipeline HDD construction staging area was similarly surveyed and is currently used as a ranching storage area. The 60 acre staging area was surveyed in March, after it had been recently plowed, which provided excellent ground visibility during the surface inspection. Ground surface visibility for the staging area and the transmission line segments was also very good. The surveyed segments of the transmission line were primarily located in grape vineyards and various tree crops (primarily peach and plum) which are regularly maintained and providing good visibility of the surface mineral soil between the plantings. The only area of relatively poor surface visibility (approximately 50%) was the Manning Recharge Basin located between the Walnut Ditch and Del Rey Avenue. In areas of poorer visibility the surface vegetation was occasionally removed with trowels to expose the mineral surface in attempts to identify potential cultural constituents. Photos of the supplemental survey area are included as Appendix 3.3-2.

The inventory identified no new cultural resources in the supplemental survey areas. However, three previously recorded historic era linear sites, consisting of waterways and ditches, cross the APE for the transmission line. These sites represent the Centerville and Kingsburg Canal (PLI-2), the Walnut Ditch (PLI-9), and the Fowler Switch Canal (see Appendix 3.3-2, Figures 3-5). These three cultural resources were previously recorded by Pacific Legacy and JRP Historical Consulting, LLC in the KRCD CPP AFC. Copies of the Department of Parks and Recreation record forms for these sites are provided in the 2007 reports prepared by Shapiro and Kovak (2007) and JRP Historical Consulting (2007). JRP Historical Consulting conducted archival research and provided detailed recording of these cultural resources during their evaluation and recommended that all three of these sites were not eligible for listing on the NRHP or CRHR. As such, these cultural resources warrant no further management or concern under Section 106 of the NHPA or CEQA.

The only feature of interest identified in the supplemental survey area is a contemporary accident marker. The feature is located along the transmission line corridor, just south of where Del Rey Avenue makes a sharp bend to the west and turns into Parlier Avenue. The marker consists of a wood-lined concrete slab with three crosses. Inscribed in the concrete at the base of each cross are the names and birth dates of the apparent victims killed in the accident: "David 4-3-81"; "Mat 6-21-80"; and "Carlos 7-25-78". Photos are included in Appendix 3.3-2.

No cultural resources were identified in the supplemental surveyed portions of the project area. As such, no further need for cultural resources surveys or site evaluations are needed for the supplemental survey area.

3.3.5 Conclusions

The mitigation measures as provided in KRCD CPP AFC Section 8.14 and subsequent responses to CEC cultural resources data requests, will be implemented. No new mitigation is proposed as a result of this supplemental cultural resources evaluation.

3.4 PALEONTOLOGICAL RESOURCES

KRCD CPP AFC Section 8.15 presents the findings of a comprehensive museum records search, literature review, and reconnaissance field surveys which were conducted for the KRCD CPP. This work was performed to evaluate the paleontological sensitivity of the project area and vicinity, assess potential project related impacts on paleontological resources, and provide recommendations for the management of paleontological resources during the construction of the proposed project. This study was conducted in accordance with the professional guidelines established by the Society of Vertebrate Paleontology (SVP) (1995) and requirements set forth by the CEC.

This section of KRCD CPP AFC Supplement B summarizes the evaluation of whether or not the project changes, as described in Chapter 2.0, result in any changes to the impacts discussed and mitigation measures described in KRCD CPP AFC Section 8.15-Paleontological Resources. Information that is not discussed below has not changed from what is presented in the KRCD CPP AFC (KRCD, 2007), AFC Supplement A (KRCD, 2007a) or responses to CEC data requests (KRCD, 2008 and 2008a) all of which have previously been provided to the CEC.

To assess the impact of the project changes, a supplemental paleontological resource inventory of the KRCD CPP was conducted, including field surveys of the supplemental project area.

3.4.1 Museum Records Search

A detailed review of museum collections records maintained by the vertebrate paleontology section of the University of California Museum of Paleontology (UCMP) was originally completed for the KRCD on January 16, 2007 for the purposes of determining whether there

were any known fossil localities within or near the project area. Published and unpublished literature and geologic maps were reviewed, and mitigation measures specific to this project were developed in accordance with the SVP professional standards and guidelines (1995). Museum collections records indicated that no previously recorded vertebrate fossil localities exist within the KRCD CPP project area, including the supplemental project area; however, at least 13 significant fossil vertebrate localities have been recorded in the general region and from the same sedimentary units that underlie the project area.

Since the original museum record search covered the supplemental project area, no additional museum records search was required to assess potential paleontological impacts.

3.4.2 Field Surveys

A paleontological reconnaissance survey of most of the project area was completed in January 2007. The current supplemental survey includes those project areas for which access was recently granted. The survey area includes the new 60 acre construction staging area across from the plant site, two and one-half miles of the transmission line route (including parcels for which access was granted since the KRCD CPP AFC was filed), and one of the natural gas pipeline construction staging areas[2]. The total KRCD CPP project area which was been field surveyed has been identified on the KRCD CPP Project Survey Coverage maps which were previously provided as a response to CEC Cultural Resources Data Request 16 in Response Set #2 to CEC Data Requests 1-89, October 2008 (KRCD, 2008).

The supplemental survey was conducted on September 10, 2008 to inspect the study areas for surface fossils and exposures of potentially fossil-bearing geologic units and to determine areas in which fossil-bearing geologic units could be exposed during project related ground disturbances. Areas not obscured by farmland or heavy vegetation were visually examined. Field surveys were completed by SWCA Environmental Consultants, paleontologist Jessica DeBusk. Ms. DeBusk's resume was provided in the KRCD CPP AFC. No fossils were discovered during supplemental surveys.

3.4.3 Paleontological Sensitivity

Due to the nature of the fossil record, paleontologists cannot know either the quality or the quantity of fossils present in a given geologic unit prior to natural erosion or human caused exposure. Therefore, in the absence of surface fossils, it is necessary to assess the sensitivity of rock units based on their known potential to produce scientifically significant fossils elsewhere within the same geologic unit (both within and outside of the study area) or a unit representative of the same depositional environment.

[2] There are now a total of nine construction staging areas proposed for the natural gas pipeline, including three construction staging areas for general pipeline construction and six construction staging areas for installations of the HDDs.

As described in AFC Section 8.14, paleontological sensitivity is defined as the potential for a geologic unit to produce scientifically significant fossils. This is determined by rock type, past history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey. In its "Standard Guidelines for the Assessment and Mitigation of Adverse Impacts to Nonrenewable Paleontologic Resources," the SVP (1995:23) defines four categories of paleontological sensitivity for rock units: high, low, undetermined, and no potential:

- **High Potential.** Rock units from which vertebrate or significant invertebrate fossils or suites of plant fossils have been recovered and are considered to have a high potential for containing significant nonrenewable fossiliferous resources. These units include, but are not limited to, sedimentary formations and some volcanic formations that contain significant nonrenewable paleontologic resources anywhere within their geographical extent and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. Sensitivity comprises both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, or botanical; and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, ecologic, or stratigraphic data. Areas that contain potentially datable organic remains older than recent, including deposits associated with nests or middens, and areas that may contain new vertebrate deposits, traces, or trackways are also classified as significant.
- **Low Potential.** Reports in the paleontological literature or field surveys by a qualified vertebrate paleontologist may allow determination that some areas or units have low potentials for yielding significant fossils. Such units will be poorly represented by specimens in institutional collections.
- **Undetermined Potential.** Specific areas underlain by sedimentary rock units for which little information is available are considered to have undetermined fossiliferous potentials.
- **No Potential.** Metamorphic and granitic rock units do not yield fossils and therefore have no potential to yield significant nonrenewable fossiliferous resources.

It should be noted that highly metamorphosed rocks and granitic rock units do not generally yield fossils and therefore have low potential to yield significant nonrenewable fossiliferous resources.

In general terms, for geologic units with high potential, full time monitoring is generally recommended during any project related ground disturbance. For geologic units with low potential, protection or salvage efforts will not generally be required. For geologic units with undetermined potential, field surveys by a qualified vertebrate paleontologist should be

conducted to specifically determine the paleontologic potential of the rock units present within the study area.

No fossils were observed on the surface during the supplemental survey. However, the combined results of the museum records search and literature review indicate that geologic units underlying the project area have a paleontological sensitivity ranging from low to high. Figure 3.4-1 provides a paleontological sensitivity map for the KRCD CPP including the supplemental project area. Information on geologic stratigraphic units is included on KRCD CPP AFC Figure 8.15-1.

3.4.4 Conclusions

The mitigation measures as provided in KRCD CPP AFC Section 8.15 will be implemented. No new mitigation is proposed as a result of this supplemental paleontological resources evaluation.

3.5 BIOLOGICAL RESOURCES

KRCD CPP AFC Section 8.16 describes the biological resources that occur in the general area of the KRCD CPP, including threatened and endangered species and their habitats. The section includes a description of the federal, state and local LORS that apply to biological resources protection, the setting and conditions of the area, the methods that were used to evaluate the potential presence of threatened and endangered species, and the potential adverse impacts that could occur to biological resources as a result of the proposed KRCD CPP.

This section of KRCD CPP AFC Supplement B summarizes the evaluation of whether or not the project changes, as described in Chapter 2.0, result in any changes to the impacts discussed and mitigation measures described in KRCD CPP AFC Section 8.16-Biological Resources. Information that is not discussed below has not changed from what is presented in the KRCD CPP AFC (KRCD, 2007), AFC Supplement A (KRCD, 2007a), responses to CEC data requests (KRCD, 2008 and 2008a), biological survey reports (Halstead & Associates 2008, 2008a), and the KRCD CPP Biological Assessment and Addendum to the Biological Assessment (Halstead & Associates 2007, 2008b) all of which have previously been provided to the CEC.

To assess the impact of the project changes, a supplemental biological resource inventory of the KRCD CPP was conducted, including field surveys of the supplemental project area.

3.5.1 Project Area Setting

The following discussion details the biological conditions in the supplemental project area.

New Construction Staging Area. The new staging area is a leveled, actively farmed, and irrigated alfalfa field. Lands surrounding the site include actively farmed agricultural orchards and vineyards and the City of Parlier WWTP.

New Transmission Line Route. The new transmission line route, like that of the old route, crosses actively farmed agricultural orchards and vineyards. The transmission line will cross over and towers will be located in the Manning Recharge Basin near the original alignment. Lands surrounding the transmission line route are actively farmed agricultural land and sparse residential.

Natural Gas Pipeline HDD Construction Staging Areas. KRCD will be boring completely underneath the Kings River and intermittent drainages of Cross Creek to avoid potential impacts to sensitive habitats and special status species in these areas. One HDD is proposed to bore underneath the Kings River and two separate HDDs are proposed to bore underneath two areas of the Cross Creek intermittent drainages.

The Cross Creek area is annual grassland habitat that has six intermittent drainages, some of which are wetlands and some are waters. The natural gas pipeline will be constructed in the road right-of-way (Road 60 in the Cross Creek area). Private lands outside of but adjacent to the natural gas pipeline in the Cross Creek area contain wetland ponds, vernal pool wetlands, the endangered Vernal Pool Tadpole Shrimp, Critical Habitats, and potentially other sensitive species. The Kings River at the gas pipeline route is a waters and has wetland and riparian habitat along its banks.

The construction staging areas are located on leveled, actively farmed, and irrigated agricultural land. The HDD construction staging areas near the Kings River include an alfalfa field and a peach orchard. The four HDD construction staging areas near Cross Creek are corn and alfalfa fields. The construction sites are agricultural land that do not have sensitive habitats such as waters, wetlands, or native plant communities. In addition, the sites do not have habitat for special status species or the species themselves.

The natural gas pipeline staging areas have been located outside, away from, and do not drain into the nearby Cross Creek native land. Buffer zones of at least 200 feet will occur between the HDD work areas and the outer edge of the native land. The buffer zones at the Kings River area will be approximately 500 feet outward from the riparian habitat. The buffer zones at the two Cross Creek areas will be approximately 200 feet and 300 feet, respectively outward from the native land. Lands surrounding the HDD work areas, other than the Cross Creek native land and Kings River, are actively farmed agricultural land or paved county roads.

3.5.2 Special Status Species

The special status plant species considered for the supplemental survey area are the same as previously described in the AFC. The special status wildlife species considered for the supplemental survey area are the same as previously described in the AFC.

3.5.3 Impact Assessment Methodology

Information pertaining to threatened, endangered, special status species, or sensitive habitats that may occur in the area was collected from several sources during the preparation of the KRCD CPP AFC including the California Natural Diversity Data Base (CNDDB) and California Native Plant Society Database. A species list from the US Fish and Wildlife Service (USFWS) for Fresno and Tulare Counties and their applicable USGS 7.5 minute topographic maps was also consulted and considered. A complete list of data sources consulted is included in KRCD CPP AFC Section 8.16.3.2. The special status species and habitats considered for the supplemental project area is the same as previously described in the KRCD CPP AFC. No additional database searches were conducted.

3.5.4 Field Survey Methods and Results

Biological reconnaissance surveys were conducted for the supplemental project area on September 4 and 5, 2008 to determine if special status species, sensitive habitats, or other environmental issues occur at or adjacent to the project areas. The supplemental project area was were also surveyed as part of the raptor surveys conducted for the project on March 17 and 28, April 10, 14, and 28, and May 2, 2008 and as part of the San Joaquin Kit Fox den search surveys conducted for the project on June 3 and 7, 2008. Field surveys were conducted by biologists Mr. Jeffrey A. Halstead, Ms. Pamela Halstead, and Andrew Roberts of Halstead and Associates, Environmental/Biological Consultants. Resumes for Mr. & Ms. Halstead were included as an appendix to the KRCD CPP AFC.

During the supplemental surveys, areas were searched for any evidence of suitable habitat for special status species, species occurrence such as burrows, tracks, trails, prey remains, diggings, scat (feces), nests, sensitive plants, elderberry bushes, and sensitive habitats such as creeks, streams, and wetlands including vernal pools and swales. Biological condition descriptions include vegetation and habitat types, local wildlife and plant species, and special status species that occur in the general project area were also noted. Results of the field surveys are discussed below. Figures showing biological resources in the supplemental project area is included as AFC Figure 8.16-2, Rev. 1 (Note: only the pages that were affected by project changes are included).

New Construction Staging Area. The new 60 acre construction staging area is agricultural land that does not have sensitive habitats such as waters, wetlands, or native plant communities. In addition, the site does not have habitat for special status species or the species themselves. Soils in the area are loams and no evidence of vernal pool wetlands (depressions or swales, hydrology, or vegetation) occur on the staging area.

Plants observed during field surveys of the staging area include cultivated alfalfa (*Medicargo sativa*). Along field and road edges, a few weedy species were observed such as puncture vine

(*Tribulus terrestris)*, ripgut brome *(Bromus rigidus)*, prickley lettuce *(Lactuca serriola)*, filaree *(Erodium sp.)*, fiddleneck *(Amsinkia intermedia)*, and fox-tail barley *(Hordeum sp.)*. Animals observed during field surveys and common in the area include western fence lizard (*Sceloporus occidentalis*), gopher snake (*Pituophis melanoleucus*) and Audubon's cottontail (*Sylvilagus audubonii*). Bird species identified were mourning dove *(Zenaida macroura)*, Brewer's blackbird *(Euphagus cyanocephalus)*, white-crowned sparrow *(Zonotrichia leucophrys)*, house finch *(Carpodacus mexicanus)*, American kestrel *(Falco sparverius)*, red-tailed hawk *(Buteo jamaicensis)*, and European starling *(Sturnus vulgaris)*. No burrowing mammals or their evidence were observed other than a few California ground squirrel burrows along the edge of the field. This lack of burrows is due to the frequent disking to control weeds, irrigation of fields, and use of heavy machinery to harvest crops. In addition, no wildlife trails were observed.

New Transmission Line Route. The new transmission line route is agricultural land that does not have sensitive habitats such as waters, wetlands, or native plant communities. In addition, the new alignment does not have habitat for special status species or the species themselves. Soils in the area are loams and no evidence of vernal pool wetlands (depressions or swales, hydrology, or vegetation) occur along the alignment.

Plants observed during field surveys of the new transmission line alignment include cultivated almonds (*Prunus amygdalus*), peaches (*Prunus persica*), and grapes (*Vitus* sp.). Along field and road edges, a few weedy species were observed such as Johnson grass *(Sorghum halapense)*, puncture vine (*Tribulus terrestris)*, ripgut brome *(Bromus rigidus)*, prickley lettuce *(Lactuca serriola)*, black mustard *(Brassica nigra)*, filaree *(Erodium sp.)*, fiddleneck *(Amsinkia intermedia)*, fox-tail barley *(Hordeum* sp.*)*, and common mallow *(Malva neglecta)*. Animals observed during field surveys and common in the area include western fence lizard (*Sceloporus occidentalis*), gopher snake (*Pituophis melanoleucus*) and Audubon's cottontail (*Sylvilagus audubonii*). Bird species identified were mourning dove *(Zenaida macroura)*, Brewer's blackbird *(Euphagus cyanocephalus)*, white-crowned sparrow *(Zonotrichia leucophrys)*, house finch *(Carpodacus mexicanus)*, American kestrel *(Falco sparverius)*, red-tailed hawk *(Buteo jamaicensis)*, and European starling *(Sturnus vulgaris)*. No burrowing mammals or their evidence were observed along the transmission line route. This lack of burrows is due to the frequent disking to control weeds, irrigation of fields, and use of heavy machinery to harvest crops. In addition, no wildlife trails were observed.

Natural Gas Pipeline HDD Construction Staging Areas. The Cross Creek area is an annual grassland habitat that has six intermittent drainages, some of which are wetlands and some are waters. Queries of the CNDDB, conducted during AFC preparation, produced polygons for special status plants, animals and sensitive habitats adjacent to or near the pipeline route in the Cross Creek area. Habitat for the San Joaquin kit fox, northern claypan vernal pools, California

tiger salamander, vernal pool fairy shrimp, vernal pool tadpole shrimp, burrowing owl, Swainson's Hawk, heartscale, lesser saltscale, and subtle orache exist adjacent to or near the gas pipeline route in the Cross Creek area. The gas pipeline in this area will be located in the Road 60 right-of-way; however, private lands adjacent to the right-of-way in the Cross Creek area include wetland ponds, vernal pool wetlands, the endangered Vernal Pool Tadpole Shrimp, and potentially other sensitive species. Also, the USFWS has designated native lands in the Cross Creek area as Critical Habitat for vernal pools (unit M-14), California tiger salamander (unit 5), vernal pool tadpole shrimp (unit 18A), and vernal pool fairy shrimp (unit 26A). The pipeline route crosses through the critical habitat zone along the Road 60 right-of-way that lies adjacent to Highway 99.

The Cross Creek HDD construction staging areas are corn and alfalfa fields. The construction sites are agricultural land that do not have sensitive habitats such as waters, wetlands, or native plant communities. In addition, the sites do not have habitat for special status species or the species themselves. Soils at the construction sites are sandy and no evidence of vernal pool wetlands (depressions or swales, hydrology, or vegetation) occur in the area.

Plants observed during field surveys of the HDD construction staging areas are cultivated corn (*Zea mays*) and alfalfa (*Medicargo sativa*). Along field and road edges, a few weedy species were observed such as ripgut brome *(Bromus rigidus)*, prickley lettuce *(Lactuca serriola)*, filaree *(Erodium sp.)*, fiddleneck *(Amsinkia* intermedia*)*, and fox-tail barley *(Hordeum sp.)*. Animals observed during field surveys and common in the area include western fence lizard (*Sceloporus occidentalis*), gopher snake (*Pituophis melanoleucus*) and Audubon's cottontail (*Sylvilagus audubonii*). Bird species identified were mourning dove *(Zenaida macroura)*, Brewer's blackbird *(Euphagus cyanocephalus)*, white-crowned sparrow *(Zonotrichia leucophrys)*, house finch *(Carpodacus mexicanus)*, American kestrel *(Falco sparverius)*, red-tailed hawk *(Buteo jamaicensis)*, and European starling *(Sturnus vulgaris)*. No burrowing mammals or their evidence were observed. This lack of burrows is due to the frequent disking to control weeds, irrigation of fields, and use of heavy machinery to harvest crops. In addition, no wildlife trails were observed.

3.5.4.1 Critical Habitats and their Sensitive Species

A search of the CNDDB and Critical Habitat System conducted during KRCD CPP AFC preparation produced locality and critical habitat records for vernal pools, vernal pool fairy shrimp, vernal pool tadpole shrimp, and California tiger salamander in the Cross Creek native land. These findings were previously described in detail in the AFC. The HDD construction staging areas have been located on actively farmed agricultural land outside, away from, and do not drain into the critical habitat/native land in the Cross Creek area. The buffer zones at the two Cross Creek areas will be approximately 200 feet and 300 feet, respectively outward from the critical habitat/native land. Thus, no impacts will occur to the critical habitat/native land in the

Cross Creek area and its wetland, waters, and special status species. The USFWS Species List notes critical habitat in the project vicinity for several plants. Critical habitat for the Hoover's spurge, San Joaquin Valley orcutt grass, Keck's checker-mallow, and succulent owl's-clover do not occur near the gas pipeline route or the other project features and is not considered further.

No critical habitats, special status species, or sensitive habitats occur at the new construction staging areas or along the new transmission line route and thus, no impacts will occur to such biological resources. Also, no significant loss of or significant impacts to wildlife habitat will occur at those sites.

3.5.4.2 Impacts to Wildlife Corridors

Evidence of substantial wildlife movement through the supplemental project area is lacking and the new project areas are not considered significant wildlife corridors. No significant impacts to wildlife movement are expected with the construction and operation of the KRCD CPP within the supplemental project area.

3.5.5 Agency Coordination

Preliminary and ongoing coordination continues to be conducted with the USFWS, U. S. Army Corps of Engineers, and the California Department of Fish and Game. In addition, the California Reclamation Board will also be consulted regarding their requirements for boring underneath Cross Creek which is under their flood-control program. The HDD work under the Cross Creek native land/flood-control channel may require an encroachment permit or waiver from the California Reclamation Board.

3.5.6 Discussion of Impacts

No habitat for special status species or sensitive habitats (such as wetlands, vernal pools, streams, creeks) were observed in the supplemental project area. No special status plant or wildlife species were observed during supplemental field surveys and none occur on or immediately adjacent to the supplemental project area. Also, there is no evidence that the supplemental project area is in a migration corridor for any special status species.

With the implementation of the various preventive avoidance measures previously identified in the AFC for resources such as the Kings River, Cross Creek area, and nesting birds, biological resources will be protected and preserved in the supplemental project area. Also through the implementation of the preventive avoidance measures, no take of, or significant impacts to special status species, sensitive species, or sensitive habitats will occur. Impacts to biological resources will be less than significant.

No significant adverse impacts to biological resources will occur as a result of the project changes. Since the new supplemental project area covers agricultural land, no loss of or

significant impacts to wildlife habitat or sensitive habitats will occur. The mitigation measures as provided in KRCD CPP AFC Section 8.16 and subsequent responses to CEC biological resources data requests and other biological survey reports will be implemented. No new mitigation is proposed as a result of this supplemental biological resources evaluation.

CHAPTER 4.0 REFERENCES

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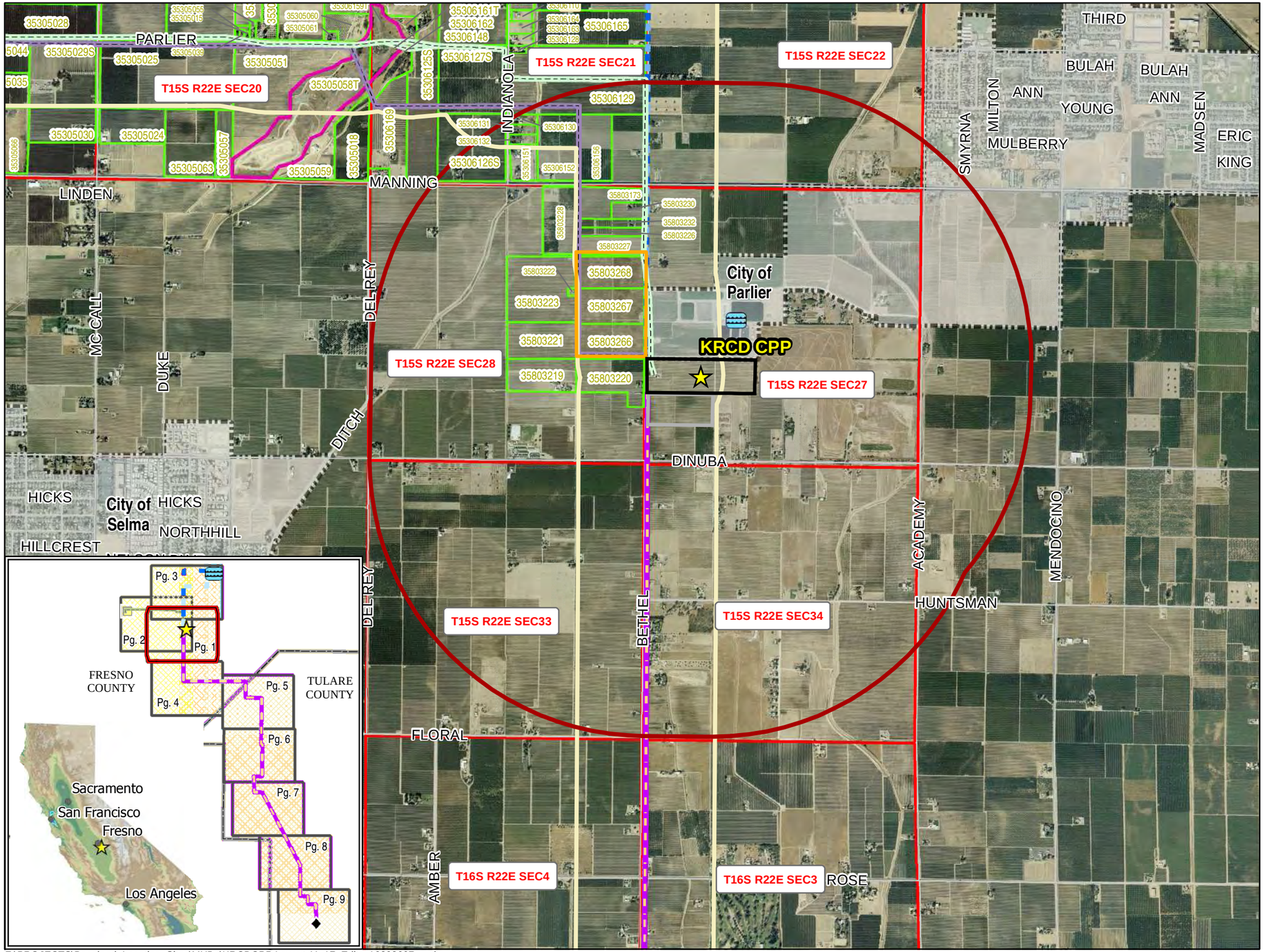
Kings River Conservation District Community Power Plant



KRCD COMMUNITY POWER PLANT

Energy for our Future

FIGURE: 1-3 **Rev. 1**

KRCD CPP Project Area

Page: 1 of 9

- KRCD Community Power Plant
- KRCD CPP Project Site
- KRCD CPP Project Laydown (New)
- KRCD CPP Project Laydown (Originally Proposed)
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- Linear 1/4 Mile Buffer
- Substation
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- Freeway
- Street
- Railroad
- Parcel
- Section
- Waterway
- County Boundary
- City Boundary

NOTE: Potable Water and Sewer Connections are on the project site.

N 0 0.25 0.5 0.75 1 Mile

1:24,000 Scale 1 Inch equals 2,000 Feet

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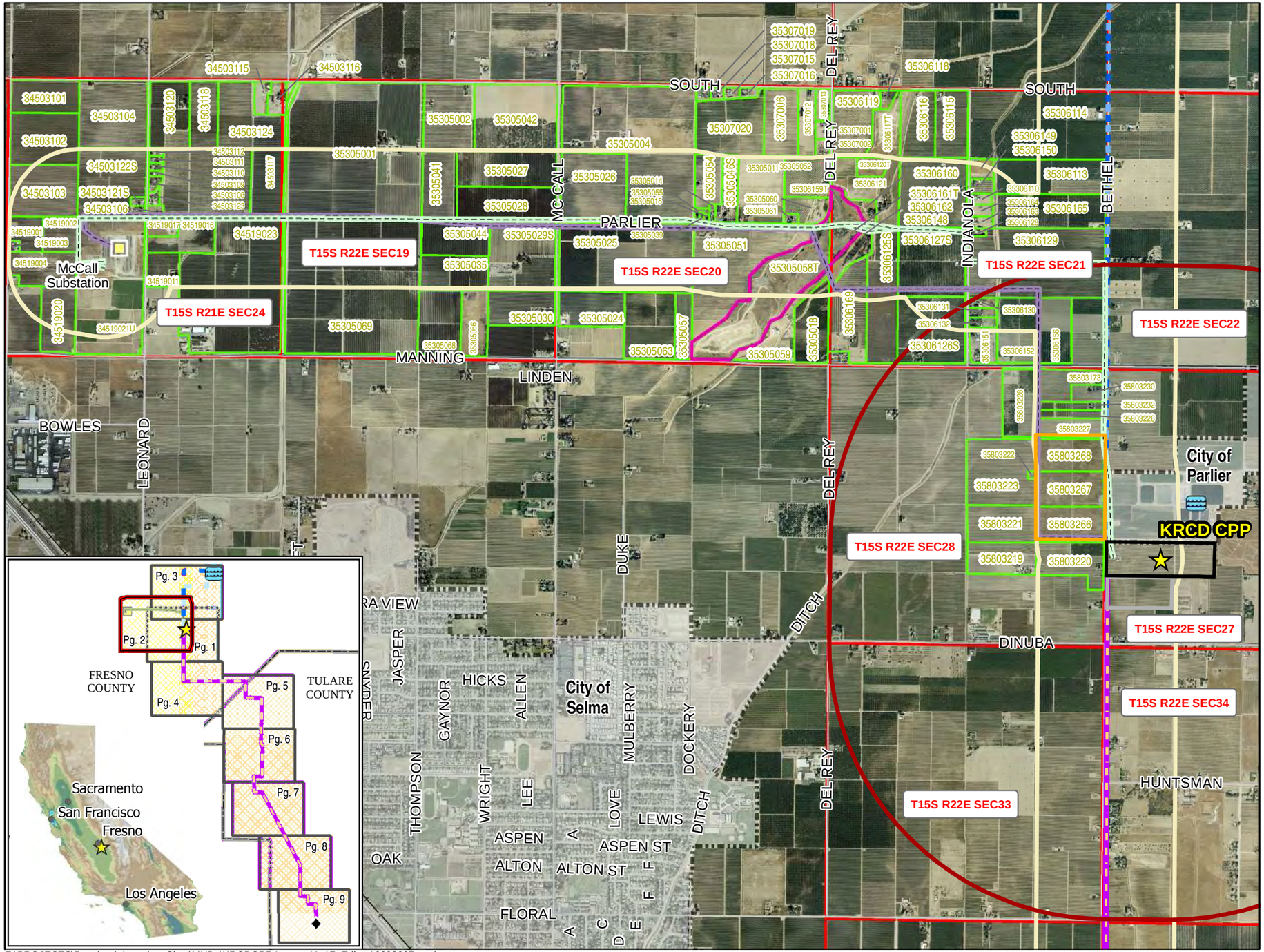
Kings River Conservation District Community Power Plant



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KRCD COMMUNITY POWER PLANT

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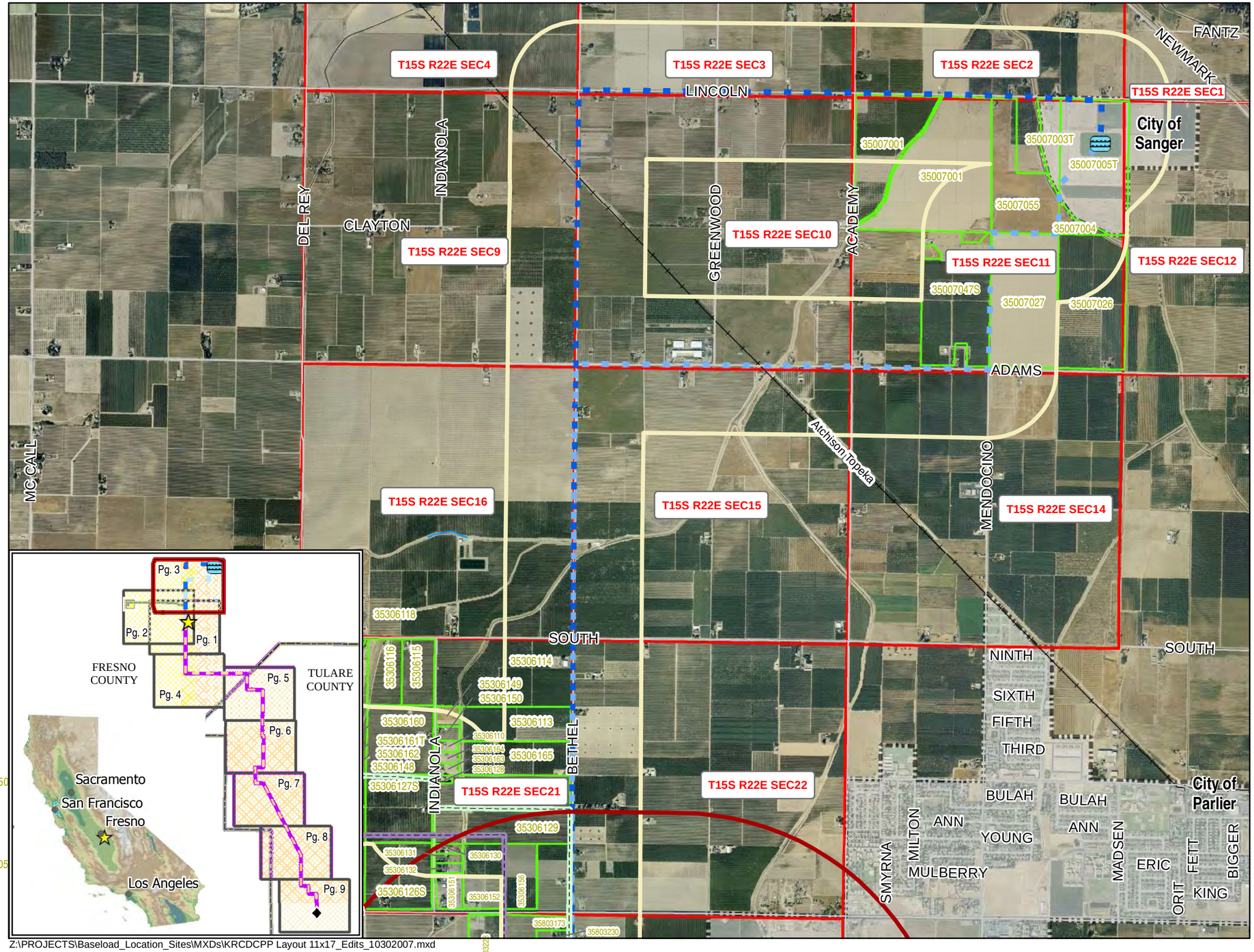

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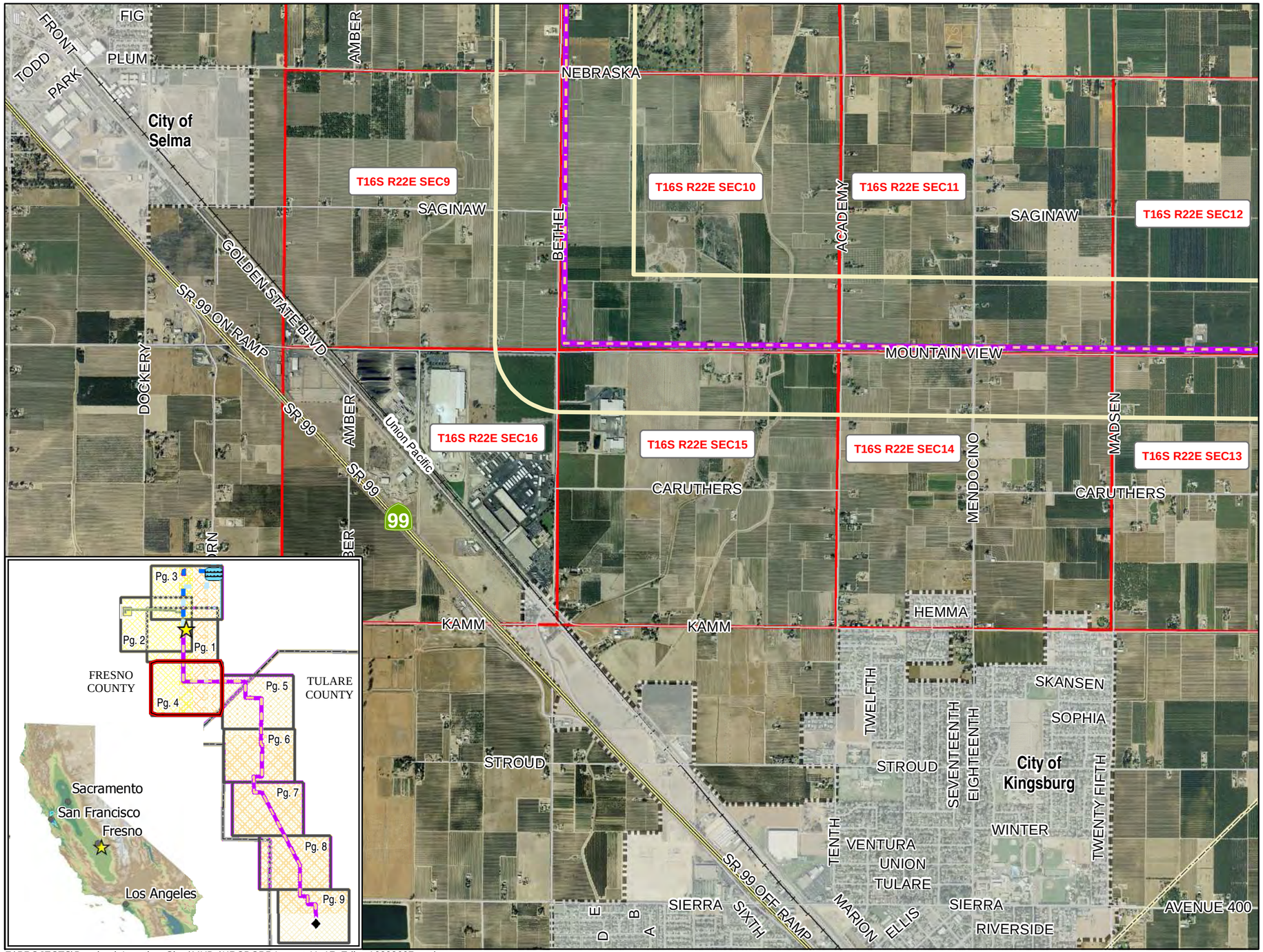
Kings River Conservation District Community Power Plant



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KRCD COMMUNITY POWER PLANT

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FIGURE: 1-3 **Rev. 1**

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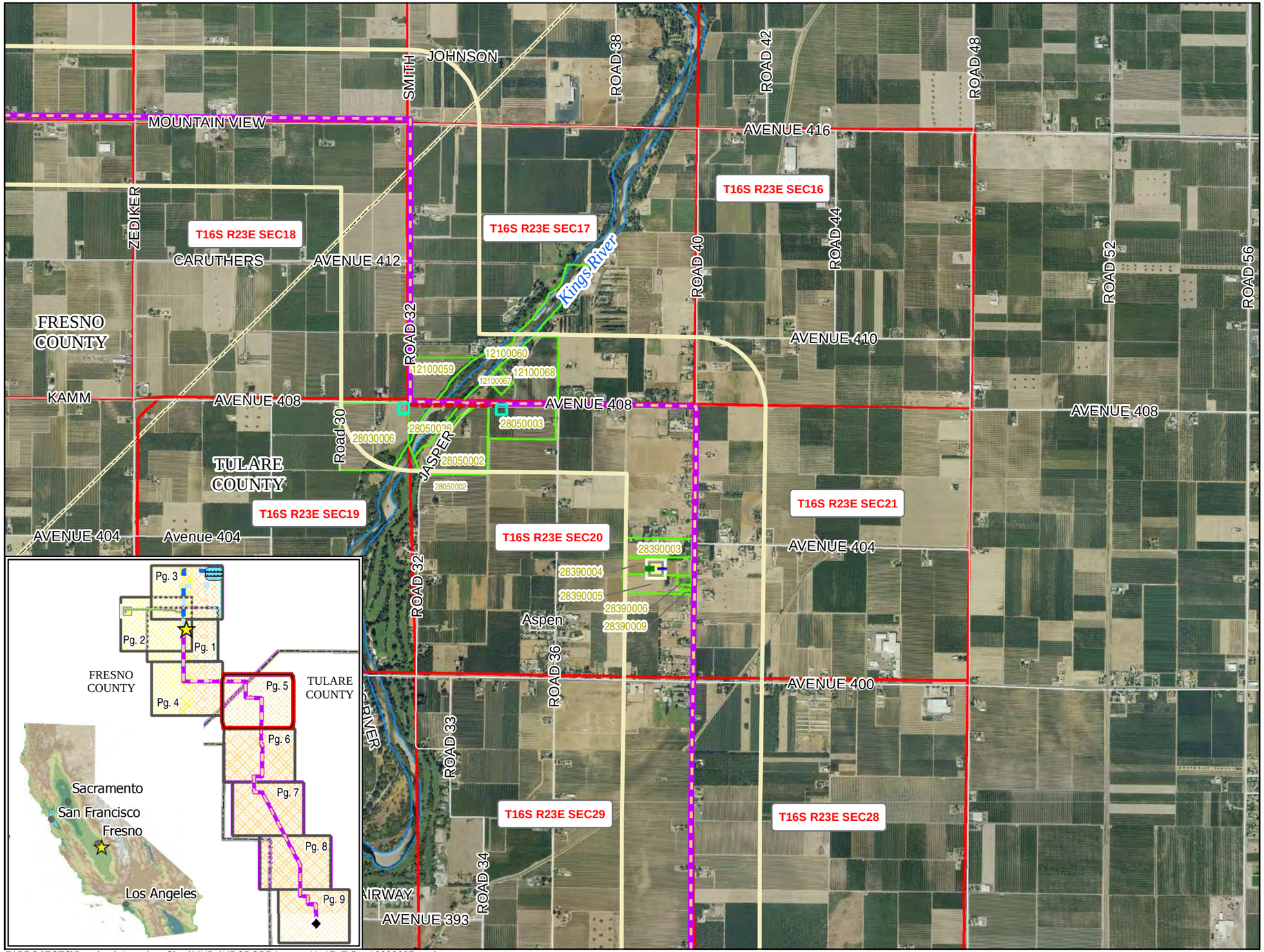
Kings River Conservation District Community Power Plant



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KRCD COMMUNITY POWER PLANT

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FIGURE: 1-3 **Rev. 1**

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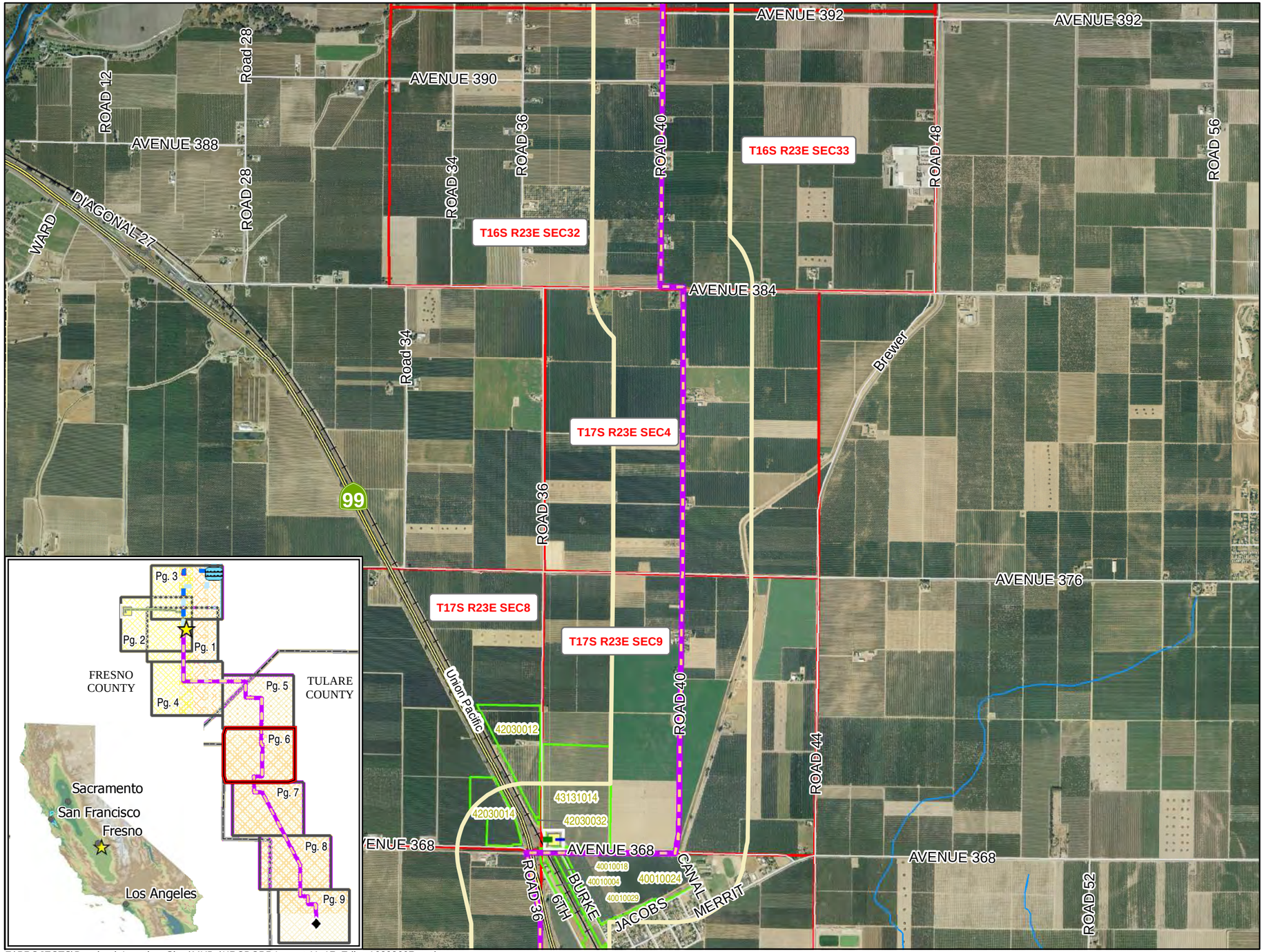

KRCD COMMUNITY POWER PLANT

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Kings River Conservation District Community Power Plant

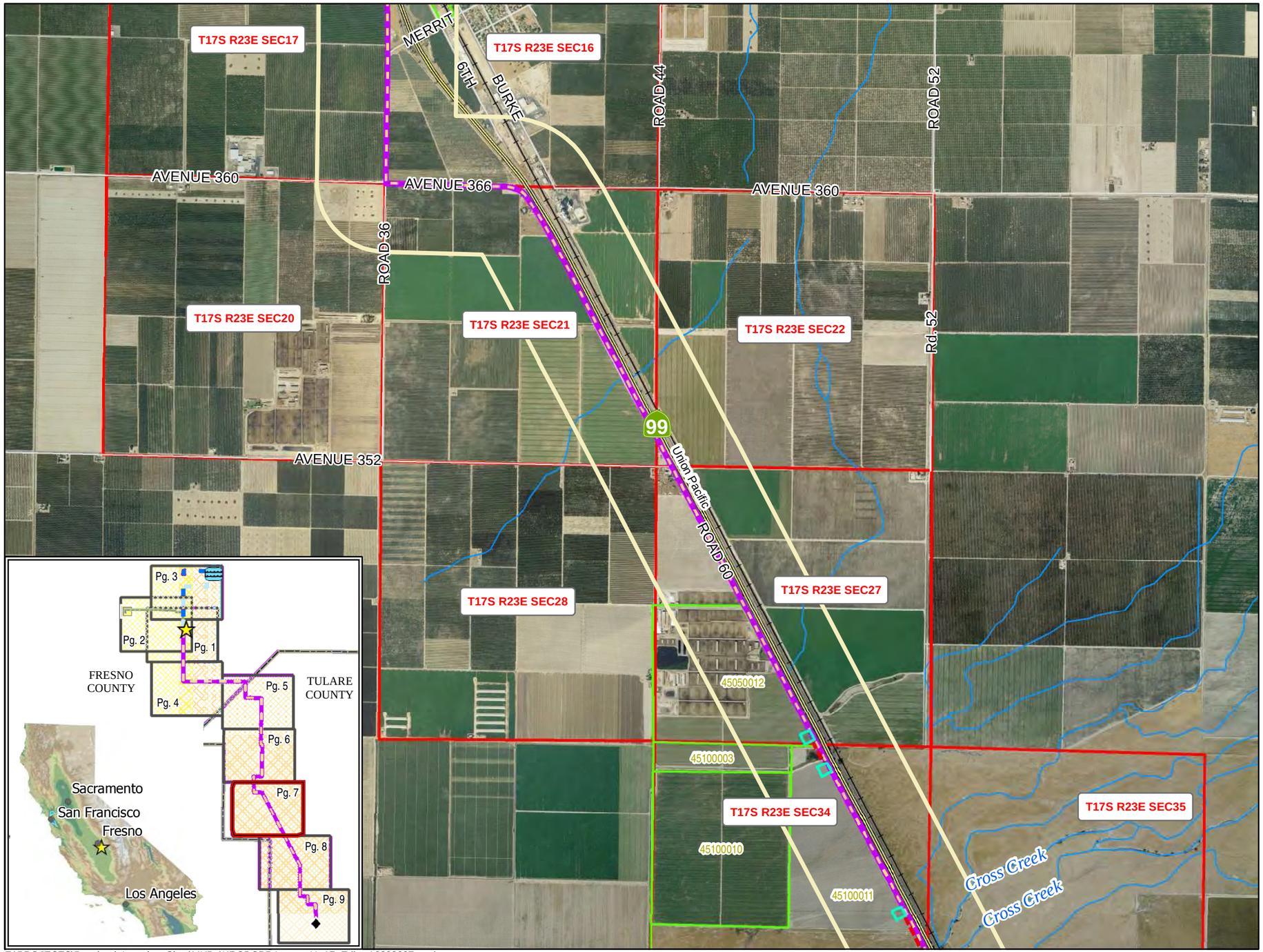

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FIGURE: 1-3 **Rev. 1**

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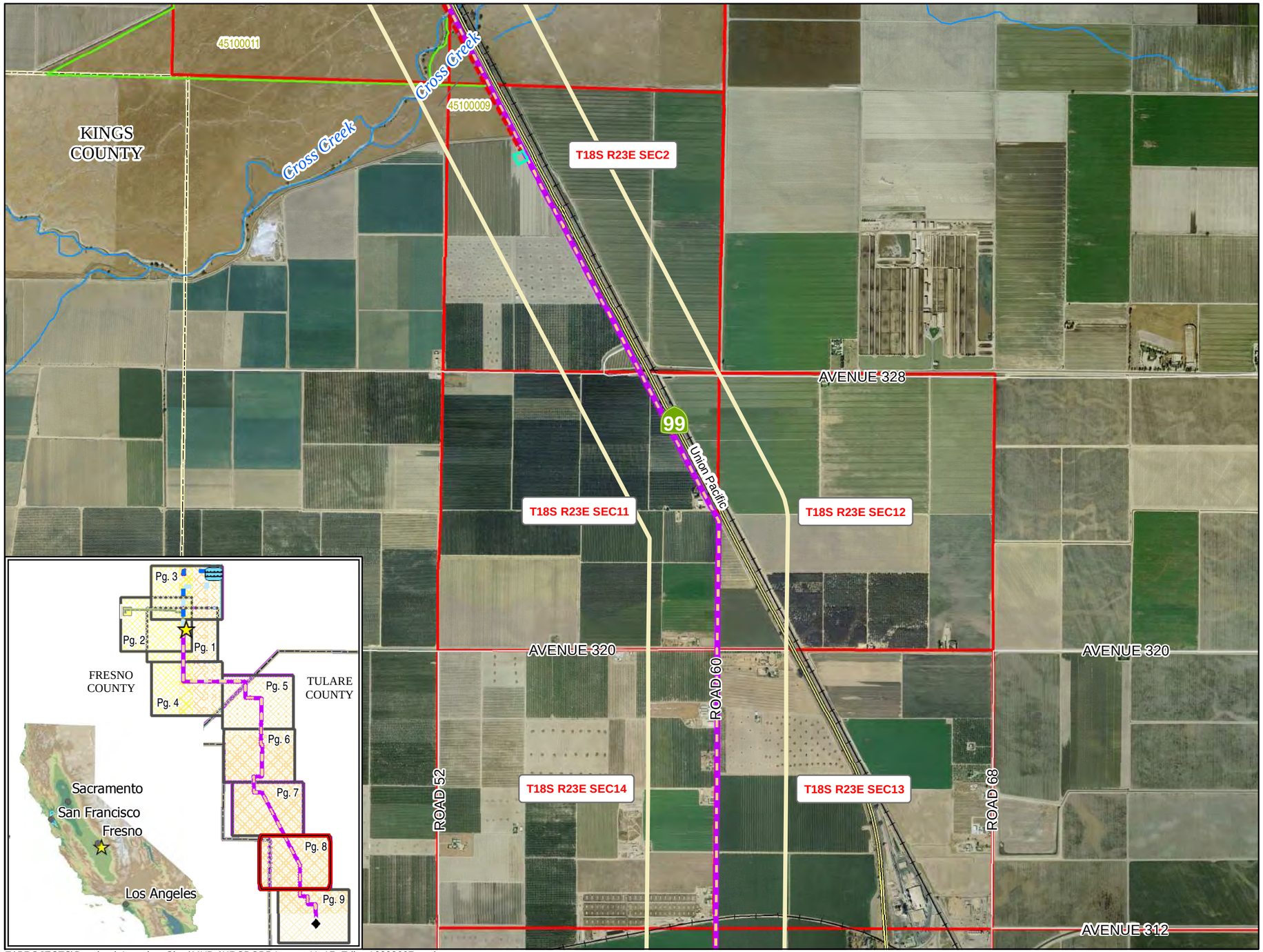

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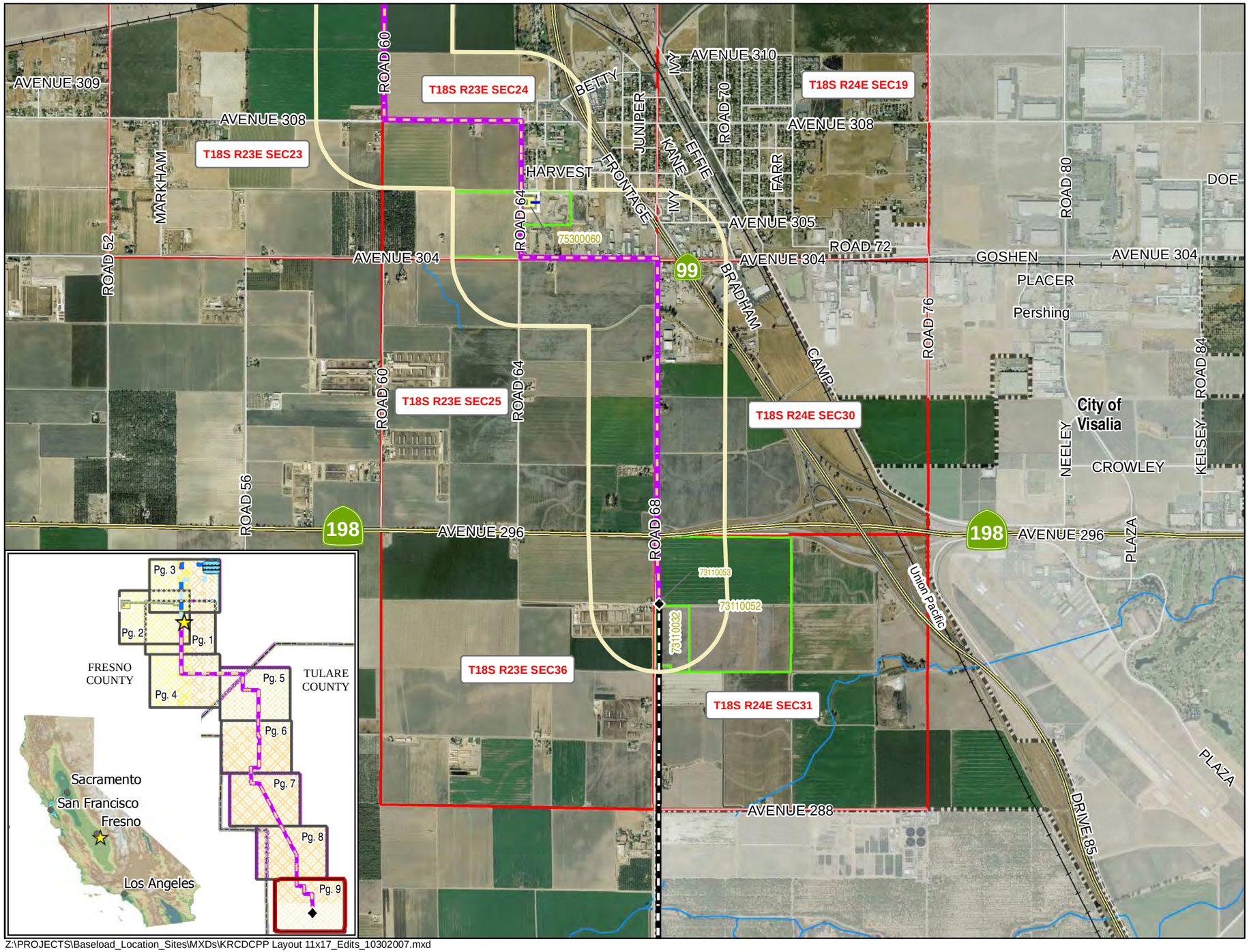

KRCD COMMUNITY POWER PLANT

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FIGURE: 1-3 **Rev. 1**

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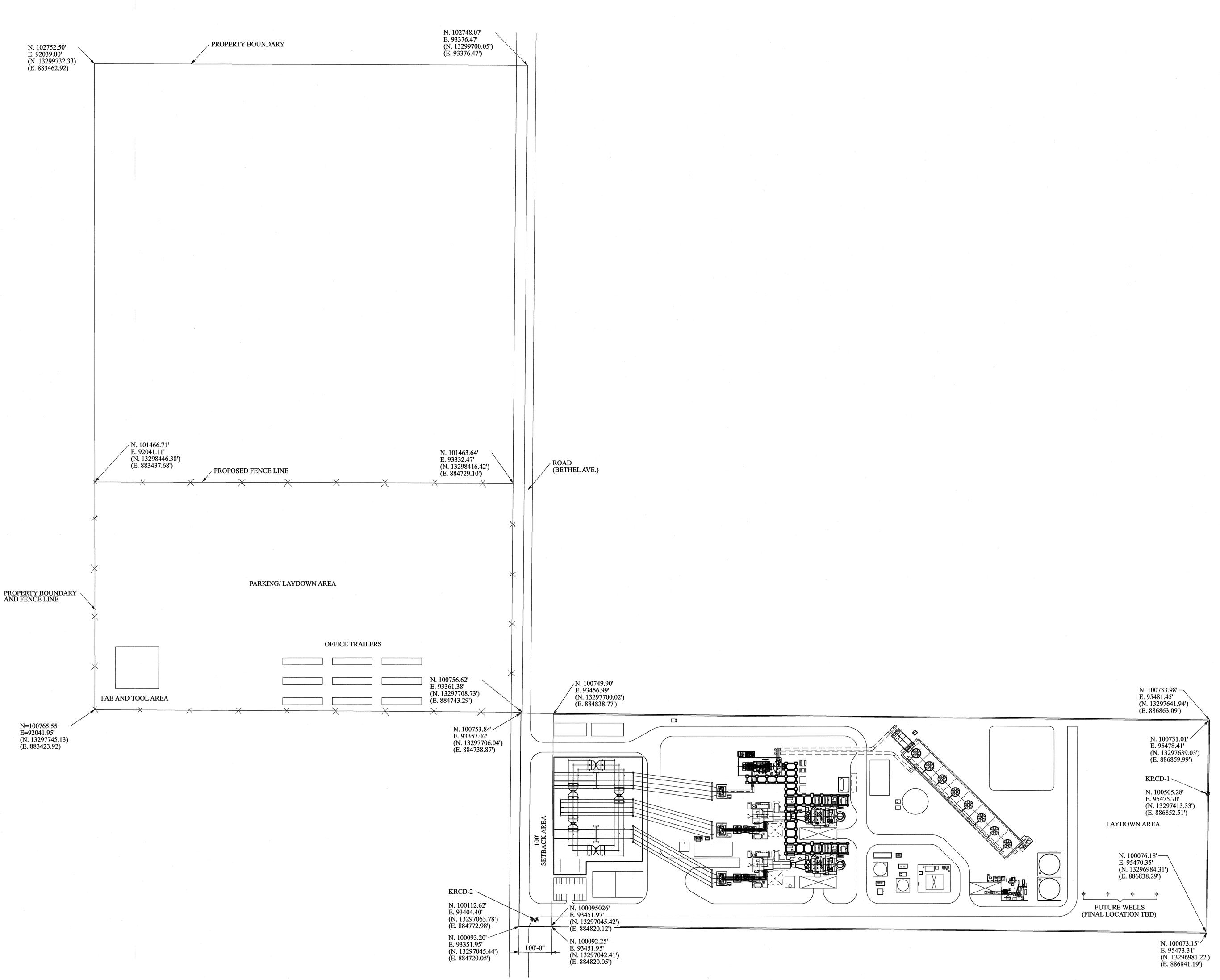

REFERENCE DRAWINGS

1. ZEC DWG. D012659-LSIM10001 S01
   GENERAL ARRANGEMENT
2. PROVOST & PRITCHARD ENGINEERING GROUP DRAWING
   KINGS RIVER CONSERVATION DISTRICT
   PROPOSED POWER PLANT SITE
   TOPOGRAPHIC SURVEY
   ZEC DWG. NO. D012659-SEWS0001 SHT. 1
3. ZEC DOCUMENT 012659.0001-0003
   COORDINATES FOR GA/NOISE
4. ZEC DOCUMENT 012659.0001-0004
   COORDINATES FOR GA/BUILDINGS
5. ZEC DOCUMENT 012659.0001-0005
   COORDINATES FOR GA/EMMISIONS

NO	REVISIONS	DATE	DSNR	CHK	ENGR	APPR
I	REVISED PARKING/LAYDOWN AREA					
H	ISSUE FOR COMMENTS					
G	ISSUE FOR COMMENTS					
F	ISSUE FOR COMMENTS					
E	ISSUE FOR COMMENTS					
D	ISSUE FOR COMMENTS					
C	ISSUE FOR COMMENTS					
B	ISSUE FOR COMMENTS					
A	ISSUE FOR COMMENTS					

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Figure 2.2, Revision 1

ZACHRY ENGINEERING CORPORATION

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AMARILLO, TEXAS MINNEAPOLIS, MINNESOTA OMAHA, NEBRASKA

KINGS RIVER CONSERVATION DISTRICT
GENERAL ARRANGEMENT
CONSTRUCTION PARKING/LAYDOWN AREA

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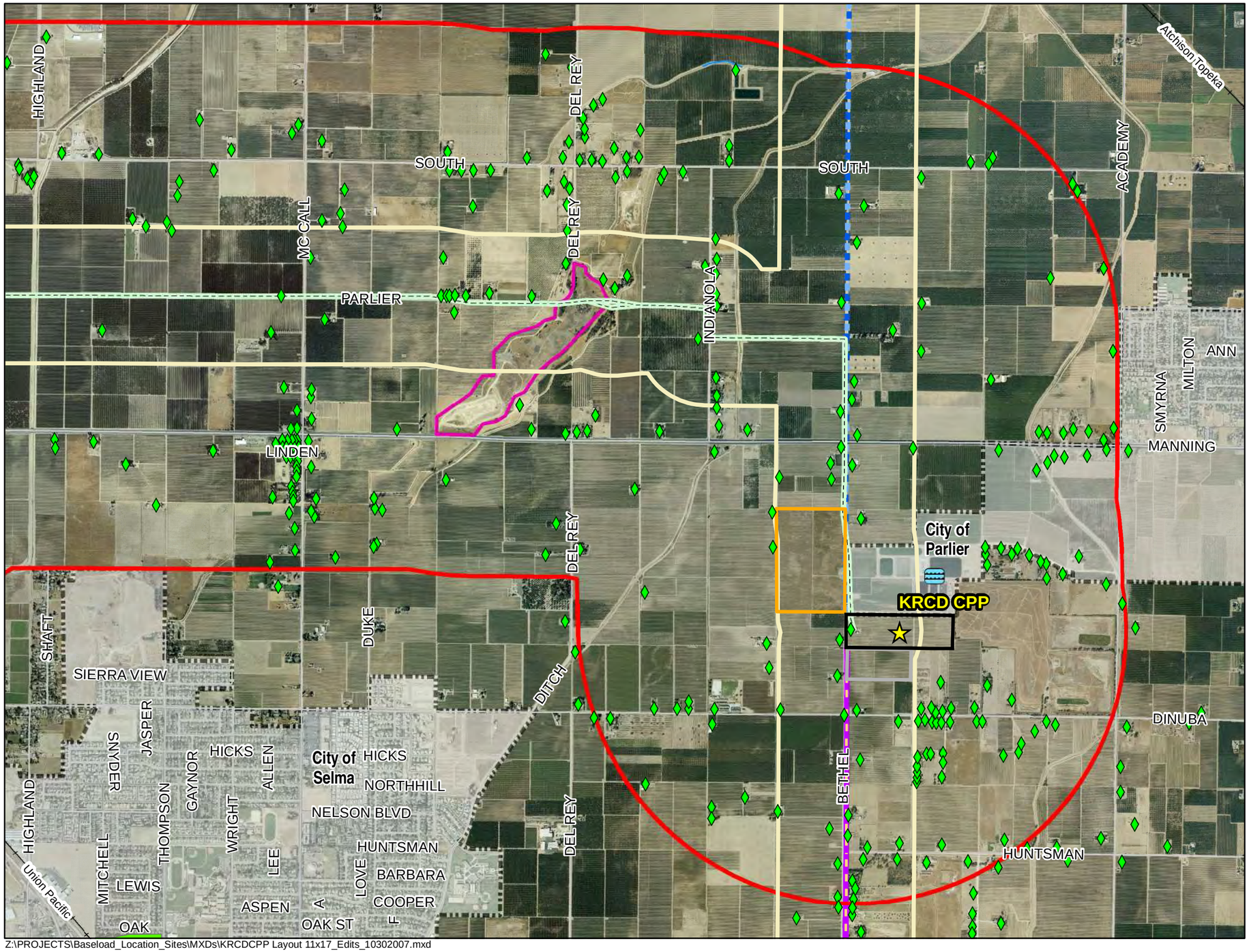
Kings River Conservation District Community Power Plant



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KRCD COMMUNITY POWER PLANT

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FIGURE: 2-10 **Rev.1**

Settled Areas, Parks, Recreational and Scenic Areas

Page: 1 of 2

- KRCD Community Power Plant
- KRCD CPP Project Site
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- Parks
- Local Residents

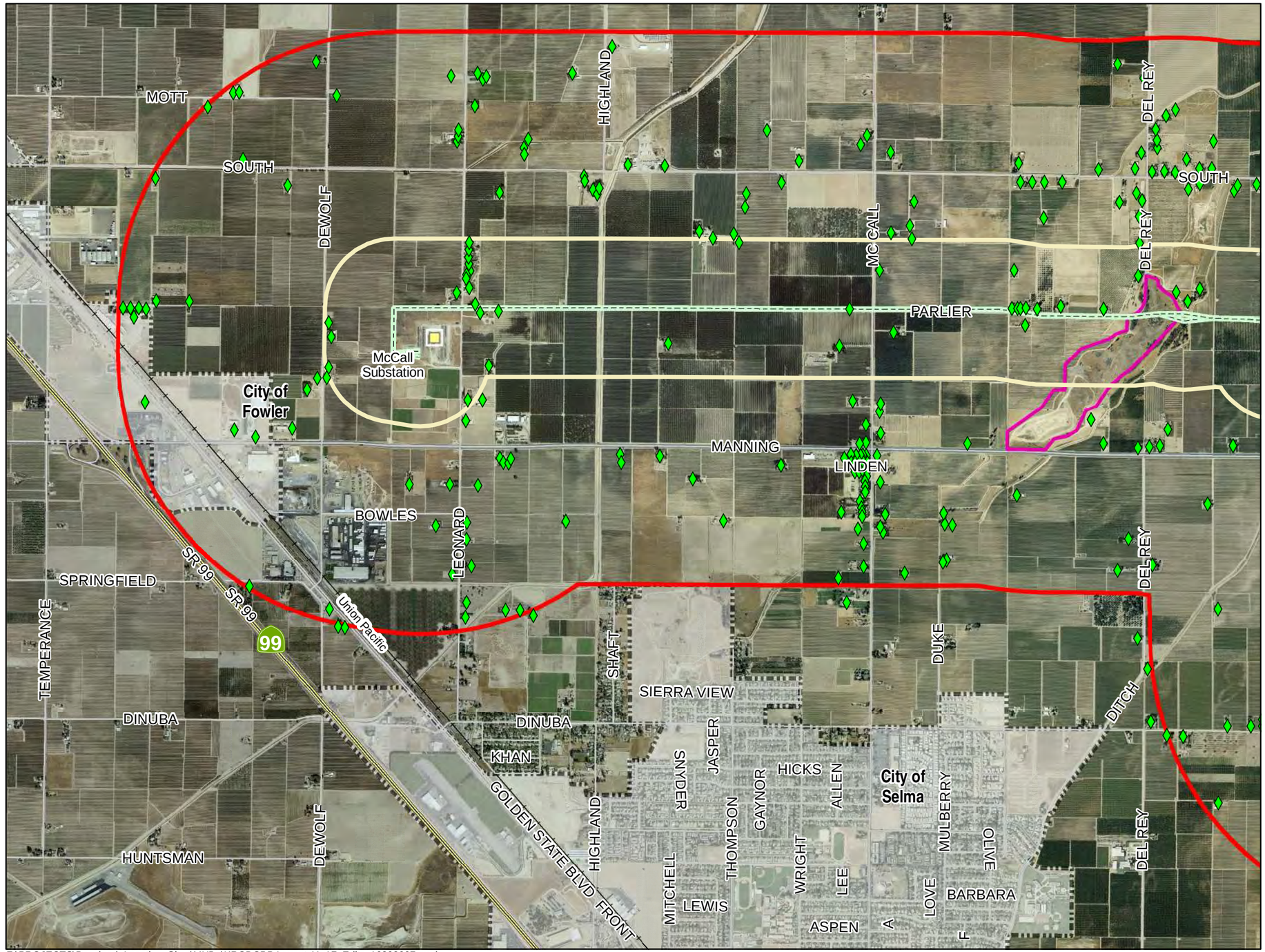
NOTE: There are no designated Recrational or Scenic Areas within proximity of the project site or transmission line.

NOTE: Potable Water and Sewer Connections are on the project site.

N 0 0.25 0.5 0.75 1 Mile

1:24,000 Scale 1 Inch equals 2,000 Feet

Kings River Conservation District Community Power Plant



KRCD COMMUNITY POWER PLANT

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FIGURE: 2-10 **Rev.1**

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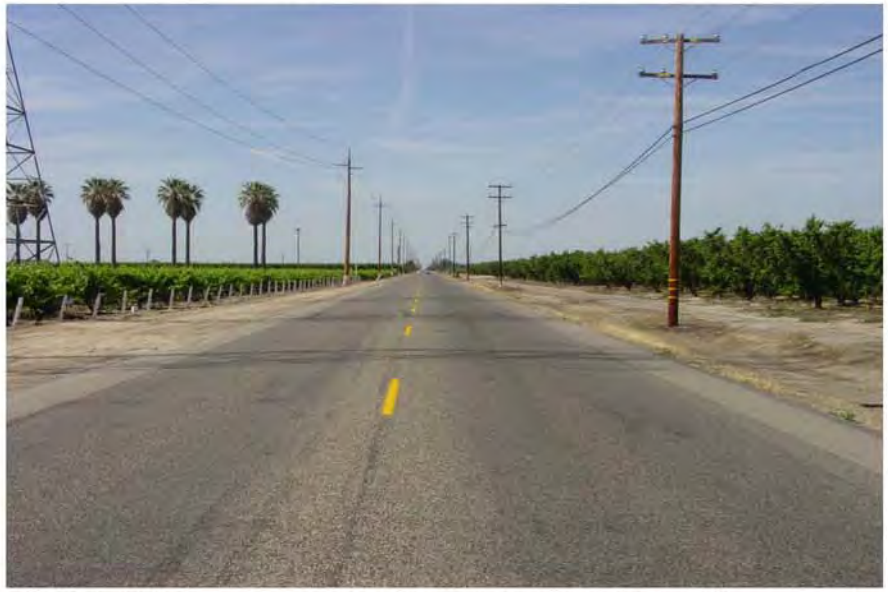
KOP-4. E. Manning Avenue east of S. Bethel Avenue looking west*

T-A. S. Indianola Avenue at E. Parlier Avenue looking west

T-B. E. Parlier Avenue looking west toward S. Del Rey Avenue



T-C. S. McCall Avenue north of E. Manning Avenue looking north

*Key Observation Point (Simulation)

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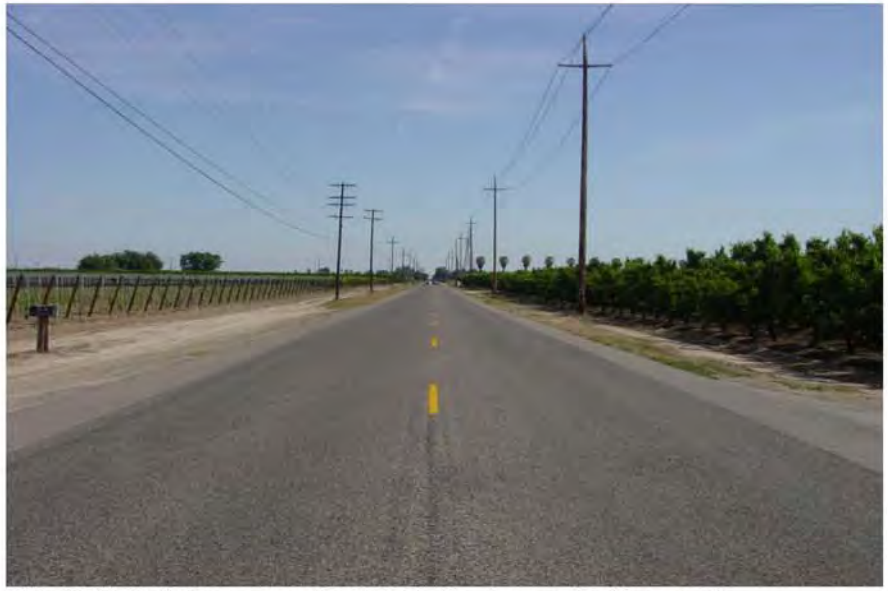
091508

Figure 8.3-4a, Rev. 1 Photos of the Transmission Line Route and Surrounding Area
KRCD Community Power Plant Project

T-D. E. Parlier Avenue at S. McCall Avenue looking east



T-E. S. McCall Avenue north of E. Parlier Avenue looking south

T-F. McCall Substation from S. Leonard Avenue looking southwest

T-G. McCall Substation from E. Manning at De Wolf looking northeast

Figure 8.3-4b, Rev. 1 Photos of the Transmission Line Route and Surrounding Area
KRCD Community Power Plant Project

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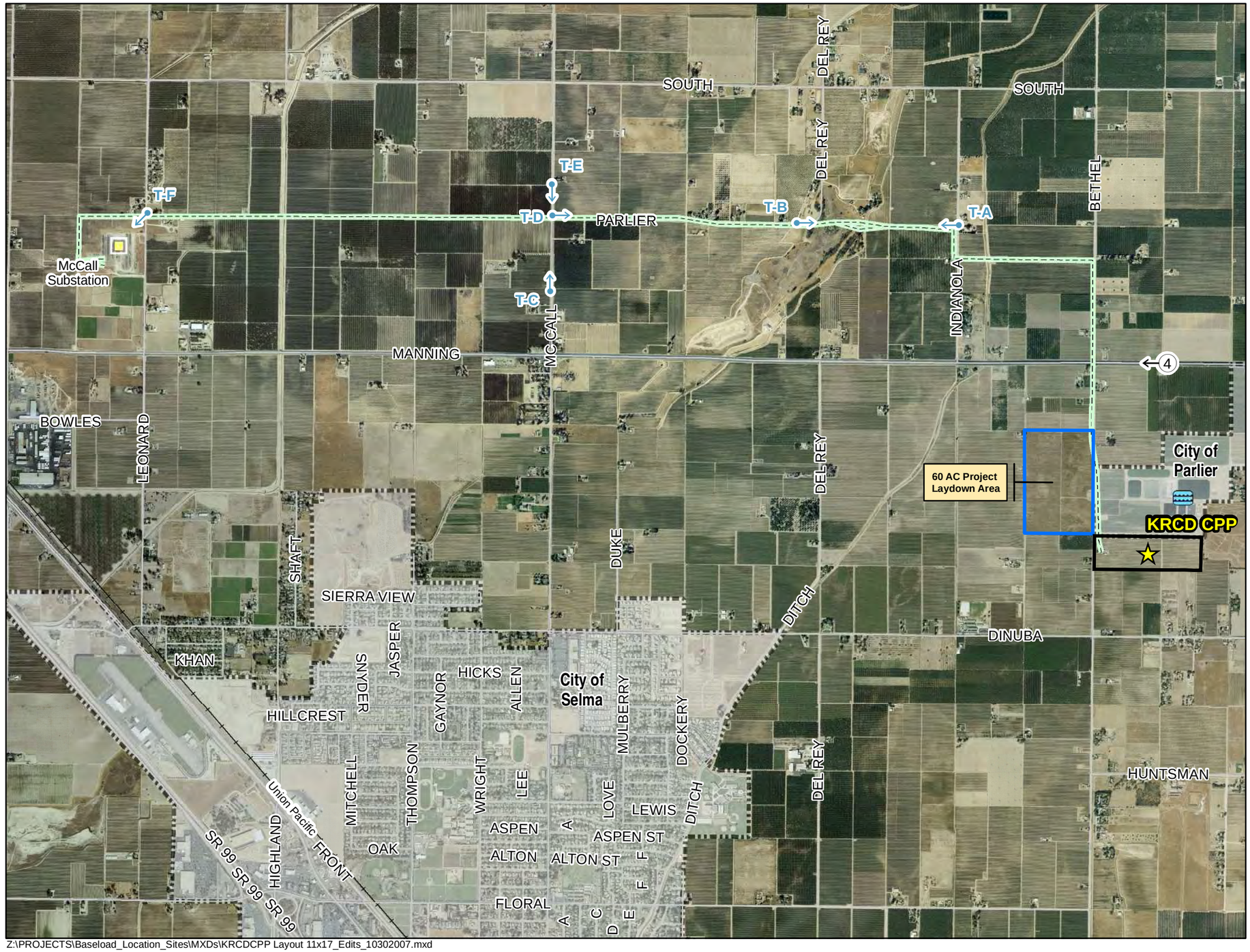
Kings River Conservation District Community Power Plant



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KRCD COMMUNITY POWER PLANT

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FIGURE: 8.3-6 **Rev.1**

Transmission Line Visibility and Photo Viewpoint Locations

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Viewpoint Location

- KOP/Simulation Viewpoint
- Photo Viewpoint

N 0 0.25 0.5 0.75 1 Mile

1:24,000 Scale 1 Inch equals 2,000 Feet

Existing view from S. Bethel Avenue near E. Dinuba Avenue (KOP-1)

Visual simulation of proposed project at 5 years

Visual simulation of proposed project at 10 years

Refer to Figure 8.3-5 for viewpoint location

Figure 8.3-7, Revision 1
Kings River Conservation District Community Power Plant
Parlier, California

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091608

Existing view from S. Bethel Avenue north of the site (KOP-2)

Visual simulation of proposed project at 5 years

Refer to Figure 8.3-5 for viewpoint location

ENVIRONMENTAL VISION
091608

Figure 8.3-8, Revision 1
Kings River Conservation District Community Power Plant
Parlier, California

Existing view from E. Manning Avenue east of S. Bethel Avenue looking west(KOP-4)

Visual simulation of proposed project

Refer to Figure 8.3-6 for viewpoint location

ENVIRONMENTAL VISION
091608

Figure 8.3-10, Revision 1
Kings River Conservation District Community Power Plant
Parlier, California

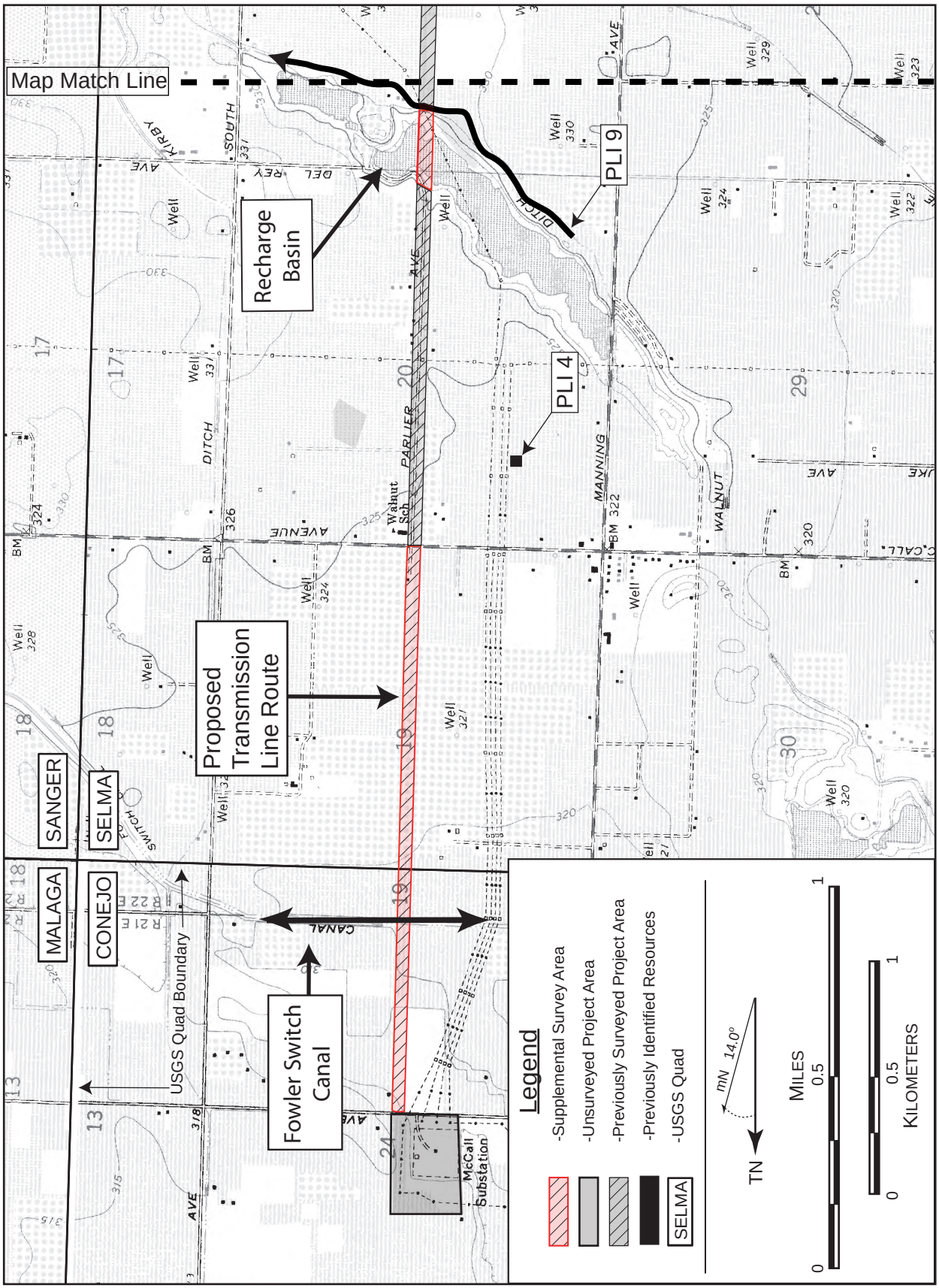


Figure 2. Project Area, Survey Coverage and Resource Location Map. - Revision 1

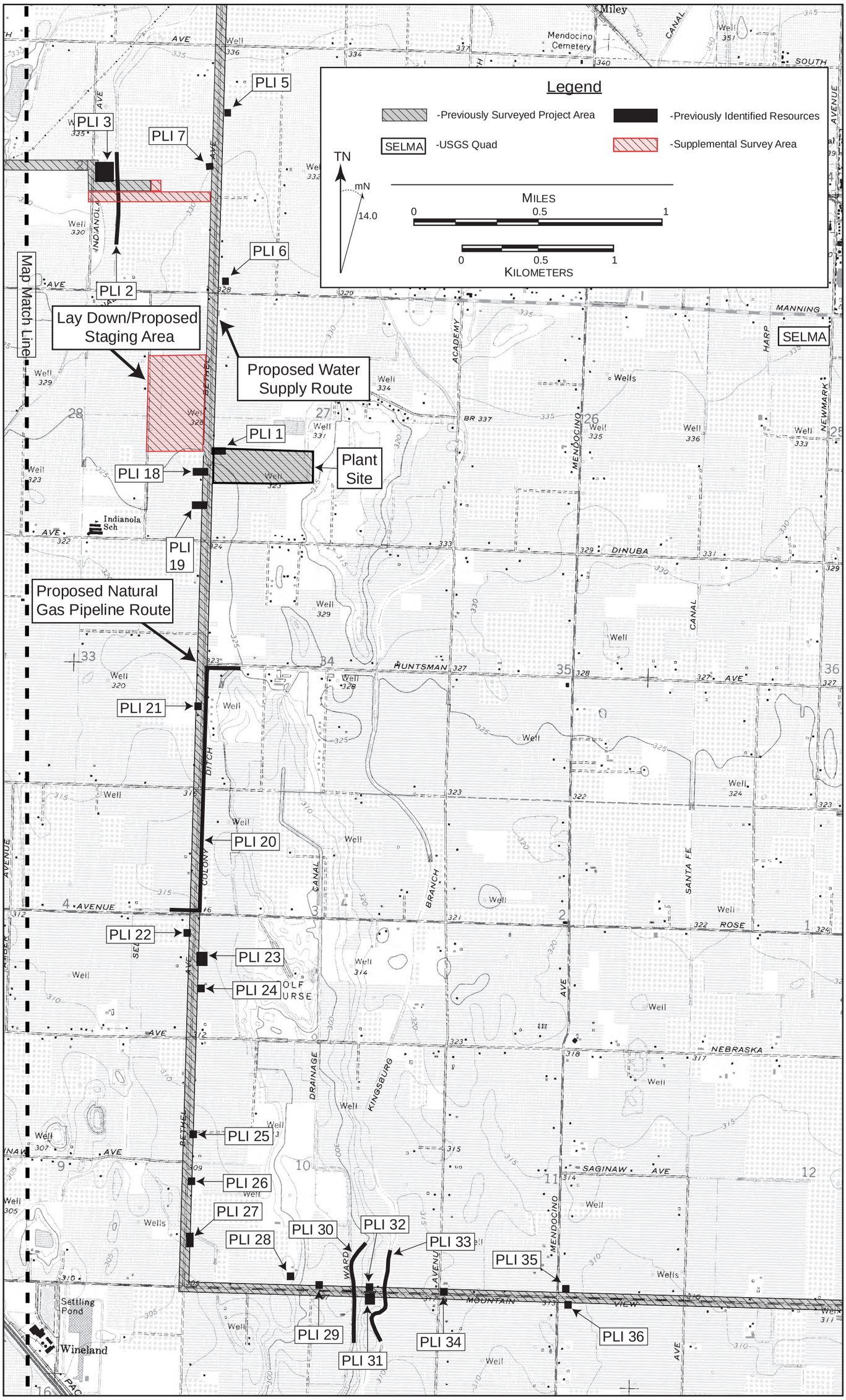


Figure 3. Project Area, Survey Coverage and Resource Location Map. - Revision 1

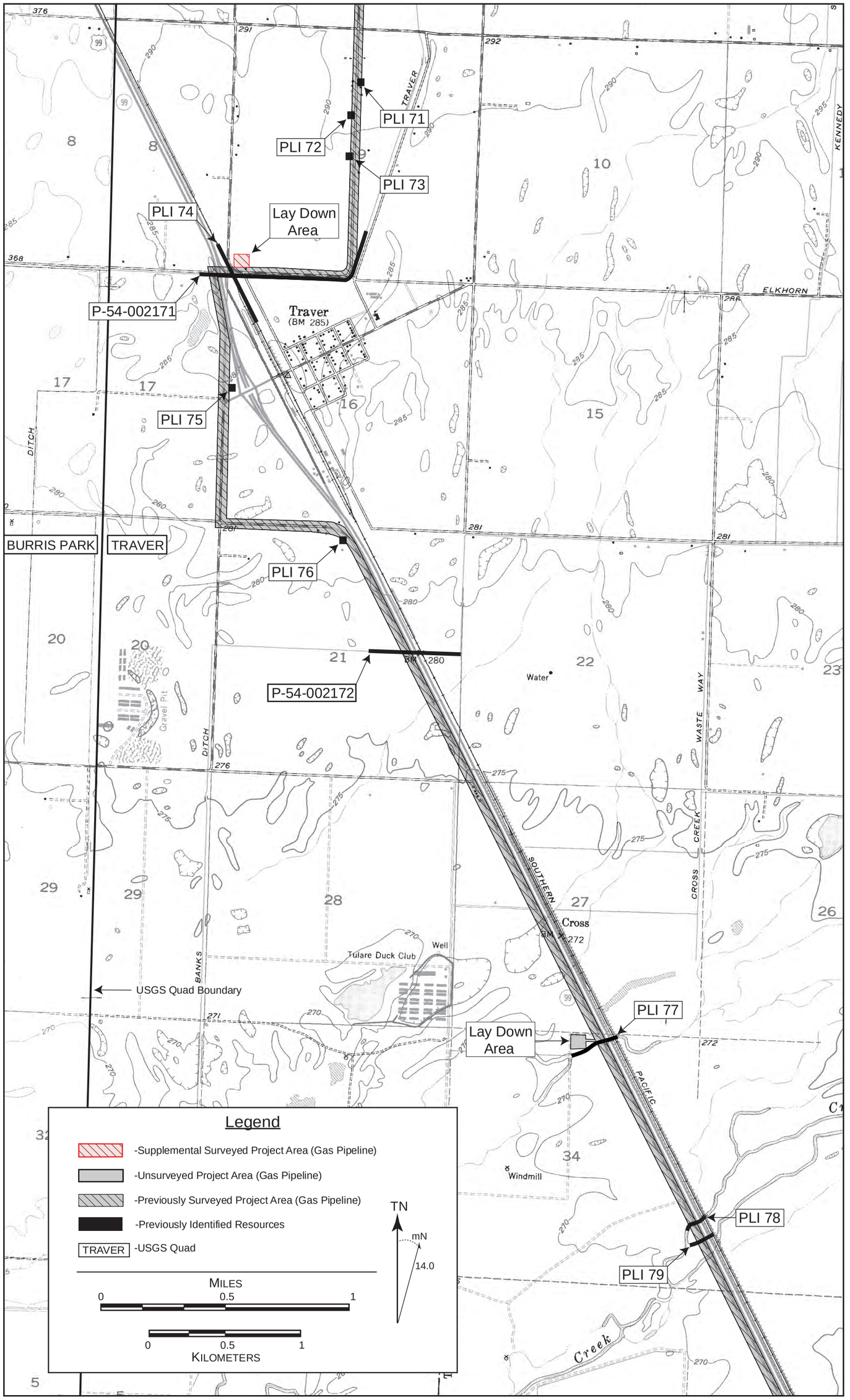
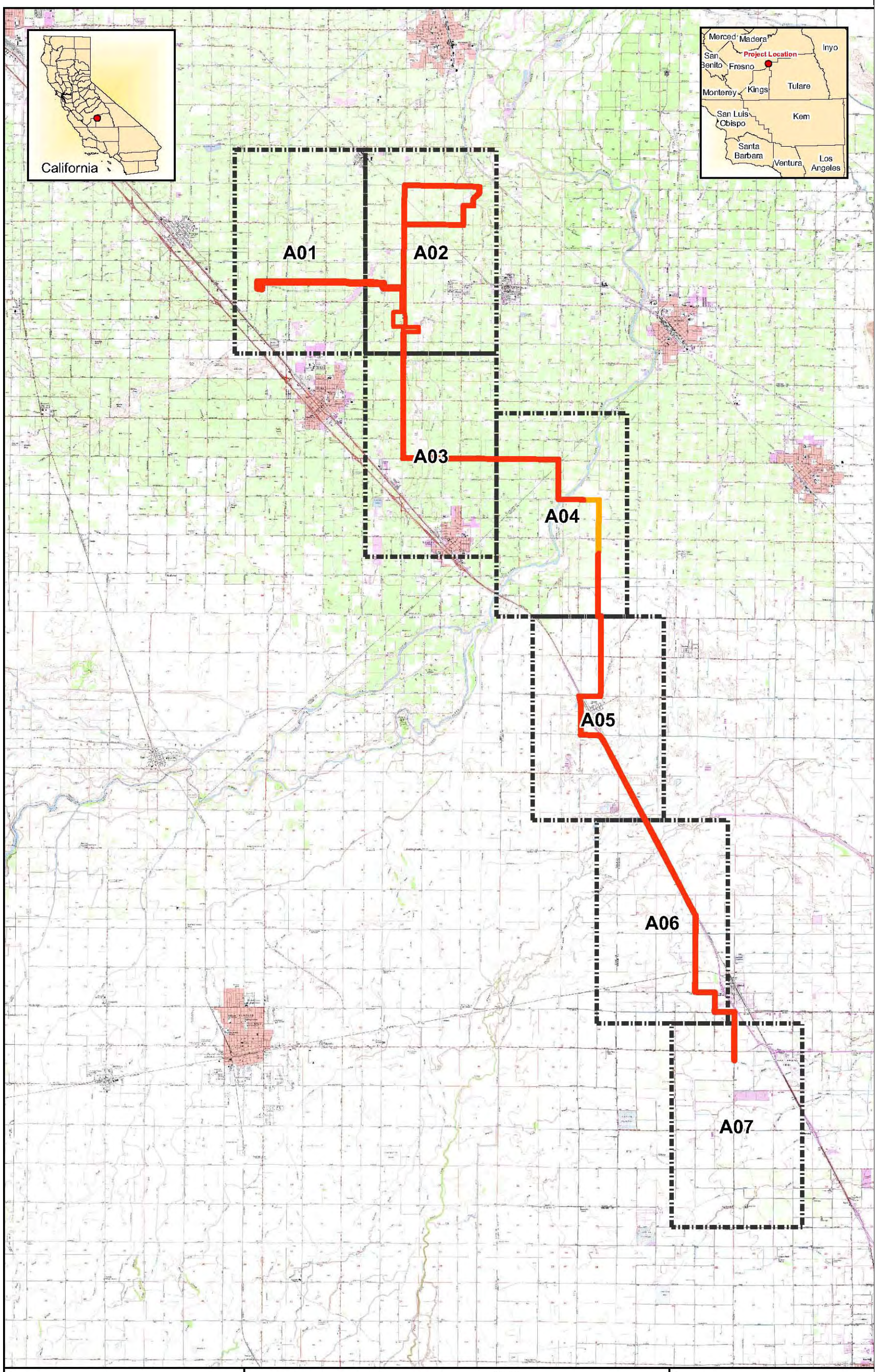


Figure 4. Project Area, Survey Coverage and Resource Location Map. - Revision 1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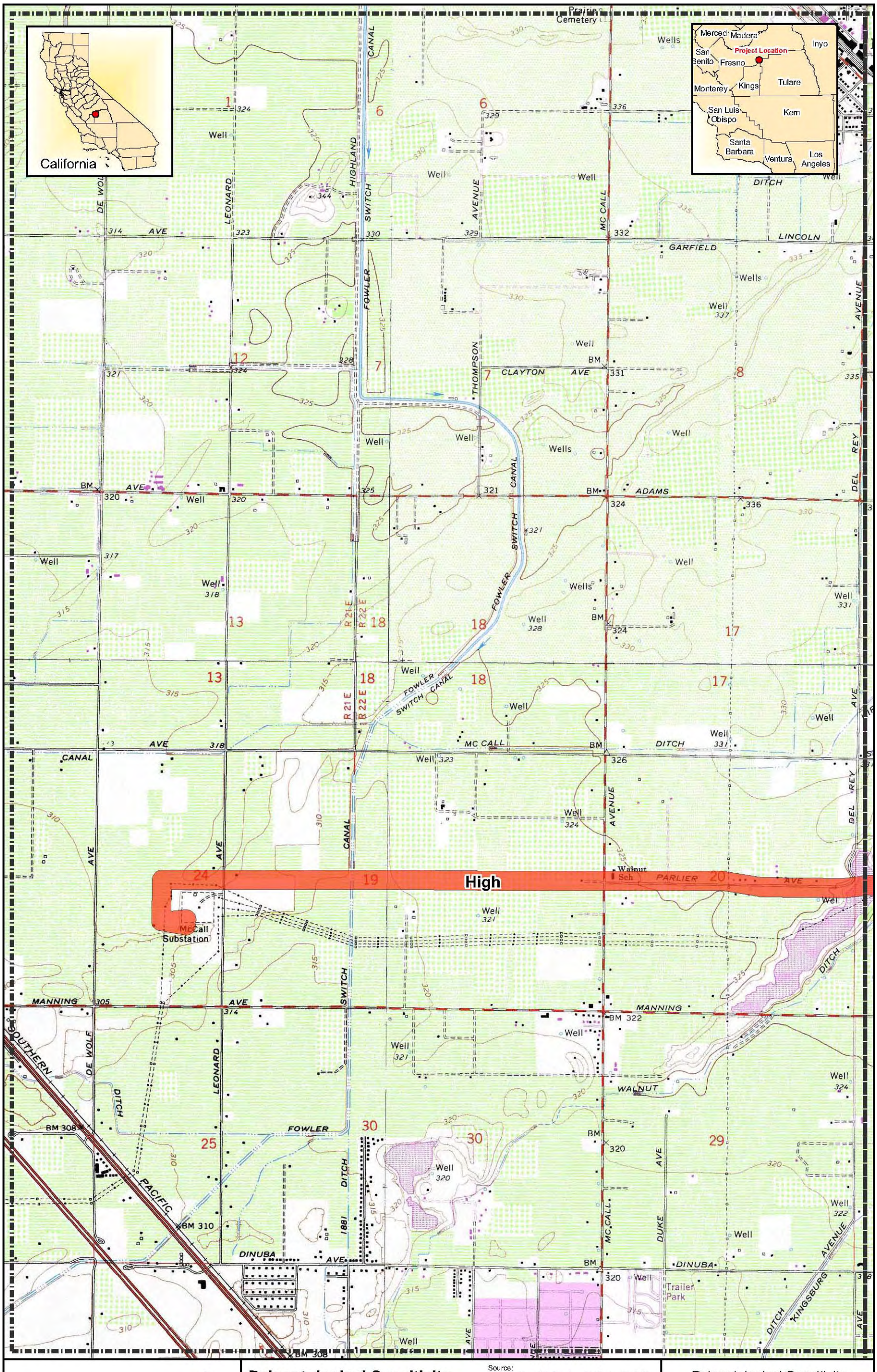
By R.A. Matthews and J.L. Burnett, 1965
SWCA
ENVIRONMENTAL CONSULTANTS
Paleontological Sensitivity
Kings River Conservation District
Community Power Plant Project
Figure 3.4-1 - Index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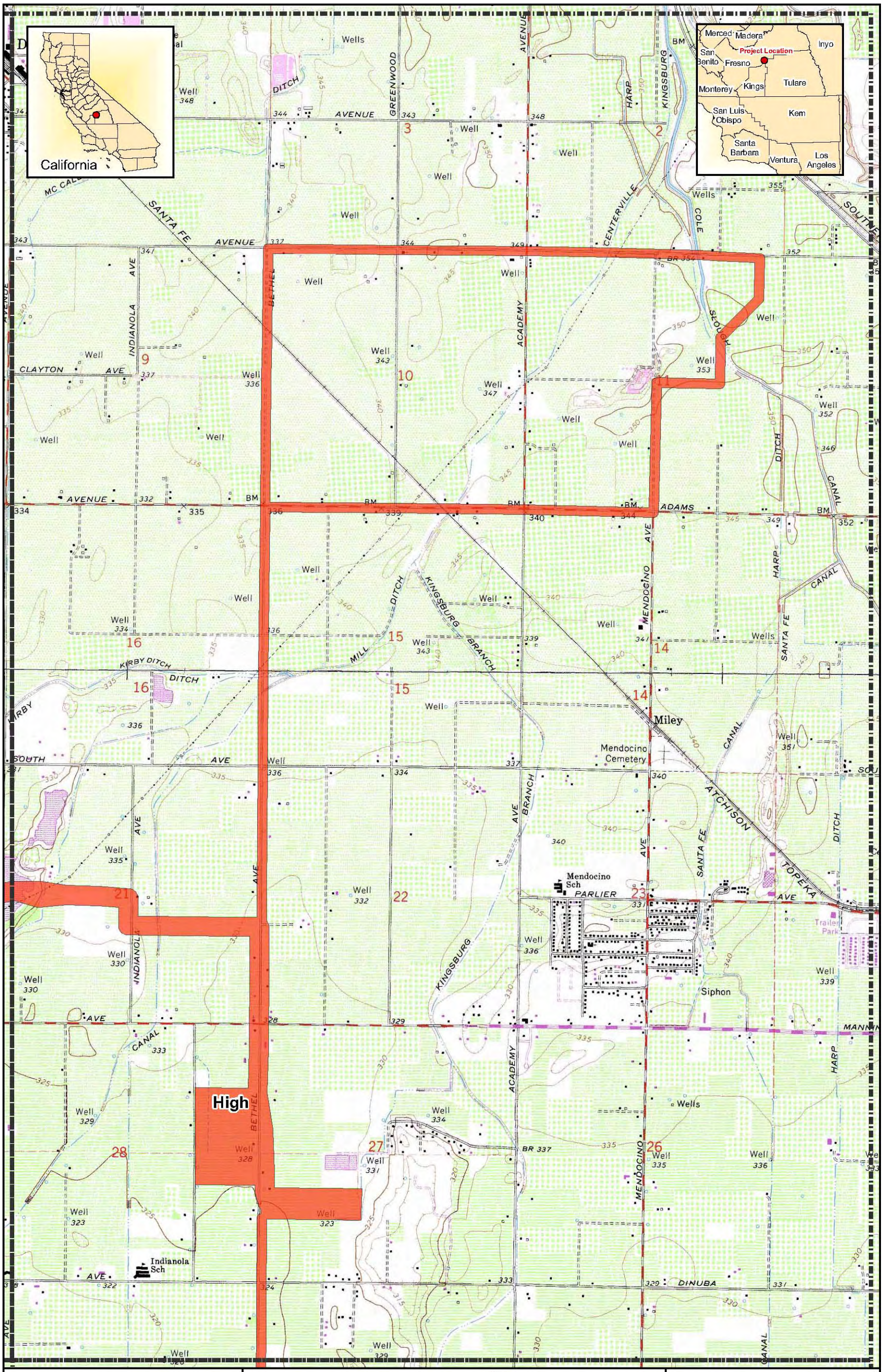
Paleontological Sensitivity
Kings River Conservation District
Community Power Plant Project
Figure 3.4-1, Page 1 of 7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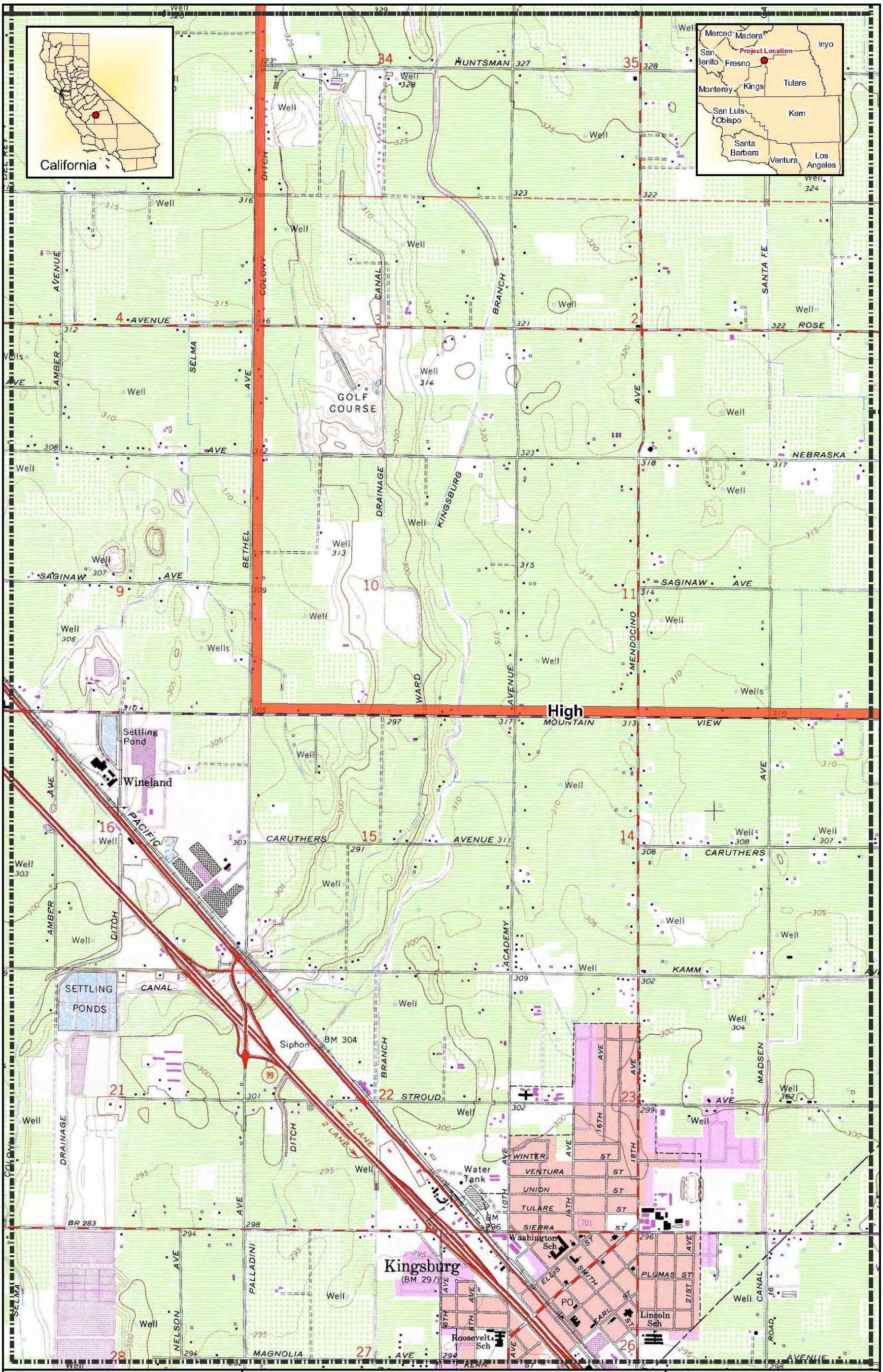
Paleontological Sensitivity
Kings River Conservation District
Community Power Plant Project
Figure 3.4-1, Page 2 of 7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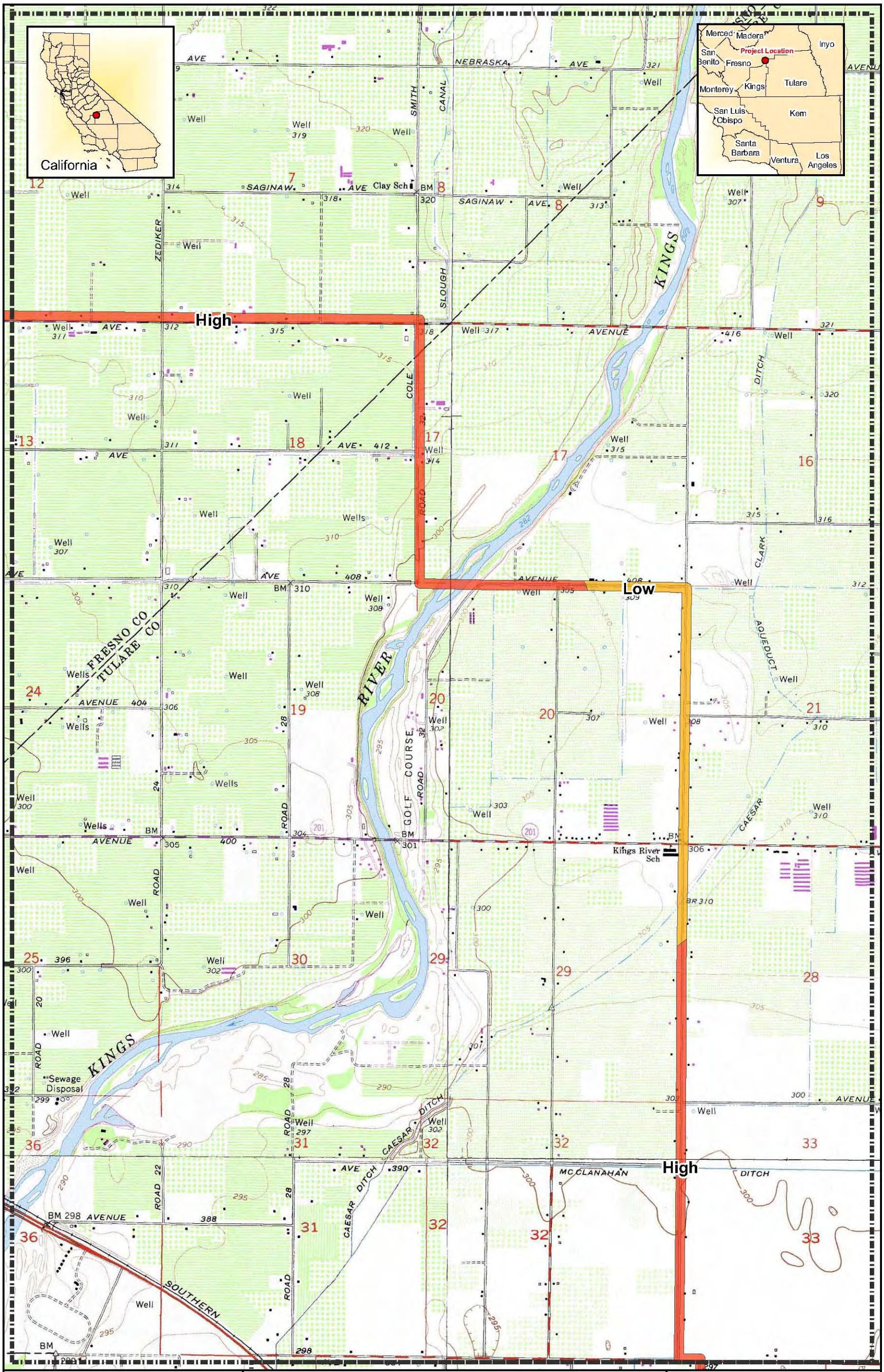
ENVIRONMENTAL CONSULTANTS
Paleontological Sensitivity
Kings River Conservation District
Community Power Plant Project
Figure 3.4-1, Page 3 of 7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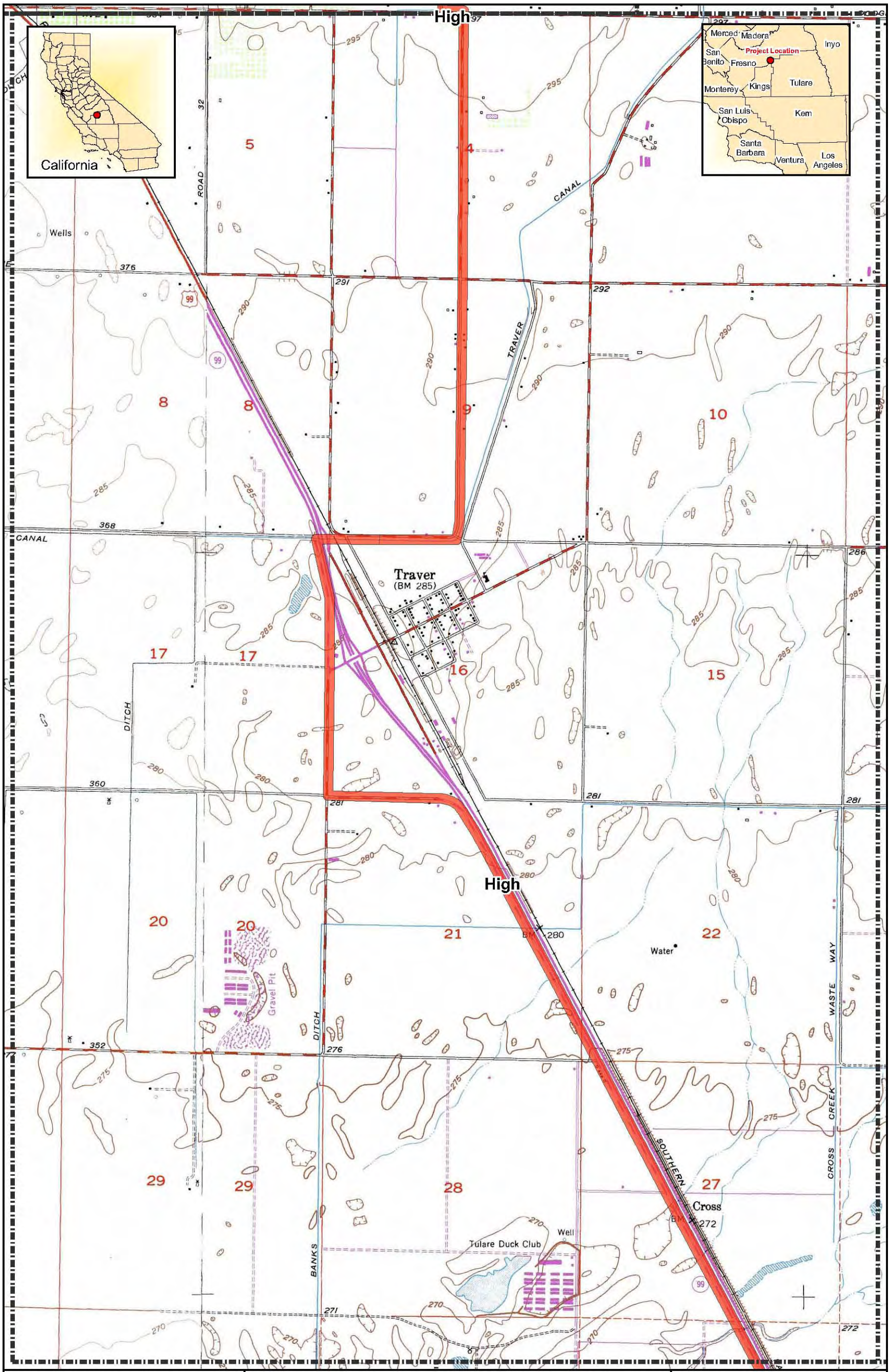
Paleontological Sensitivity
Kings River Conservation District
Community Power Plant Project
Figure 3.4-1, Page 4 of 7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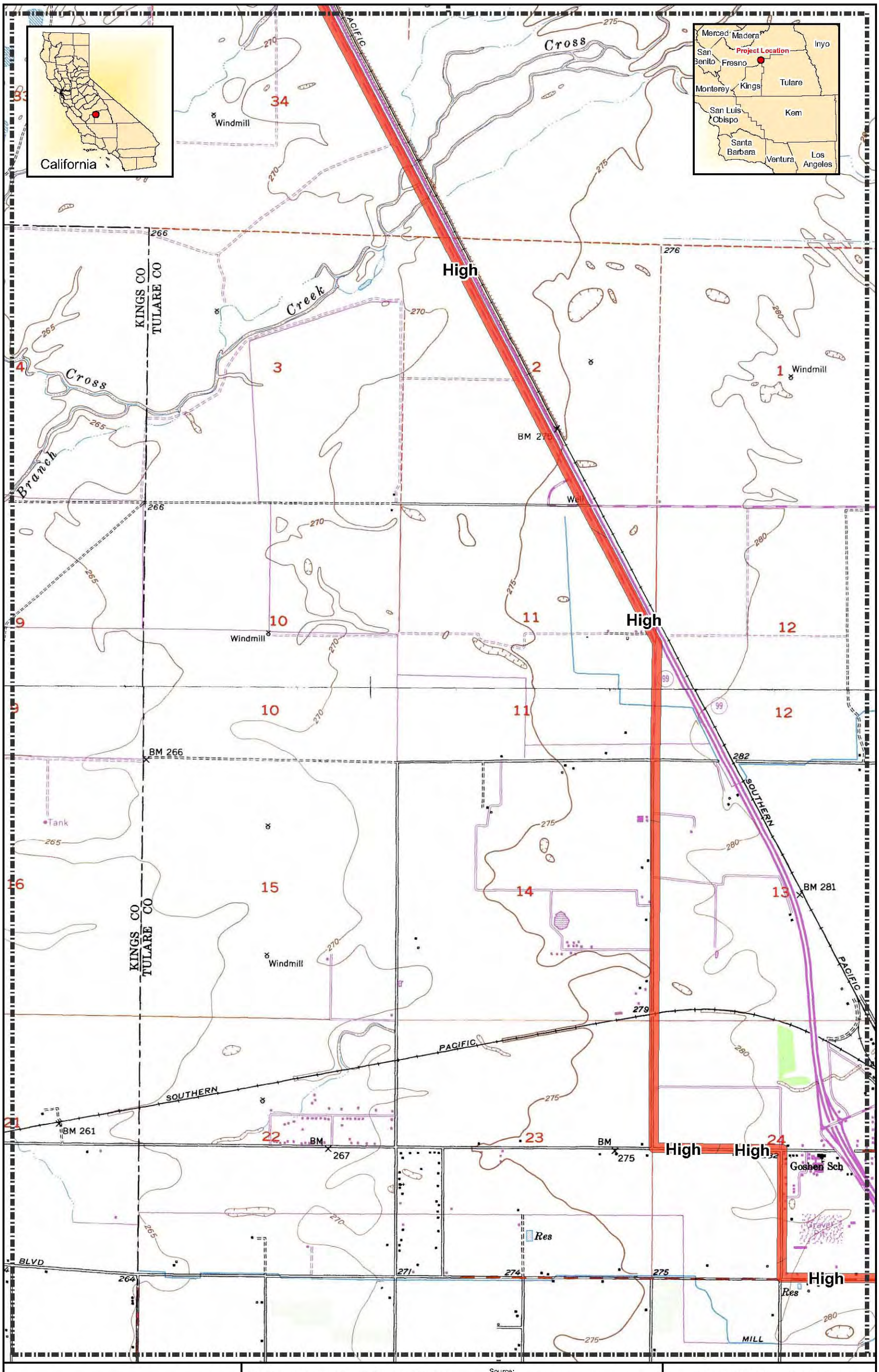
ENVIRONMENTAL CONSULTANTS
Paleontological Sensitivity
Kings River Conservation District
Community Power Plant Project
Figure 3.4-1, Page 5 of 7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By R.A. Matthews and J.L. Burnett, 1965
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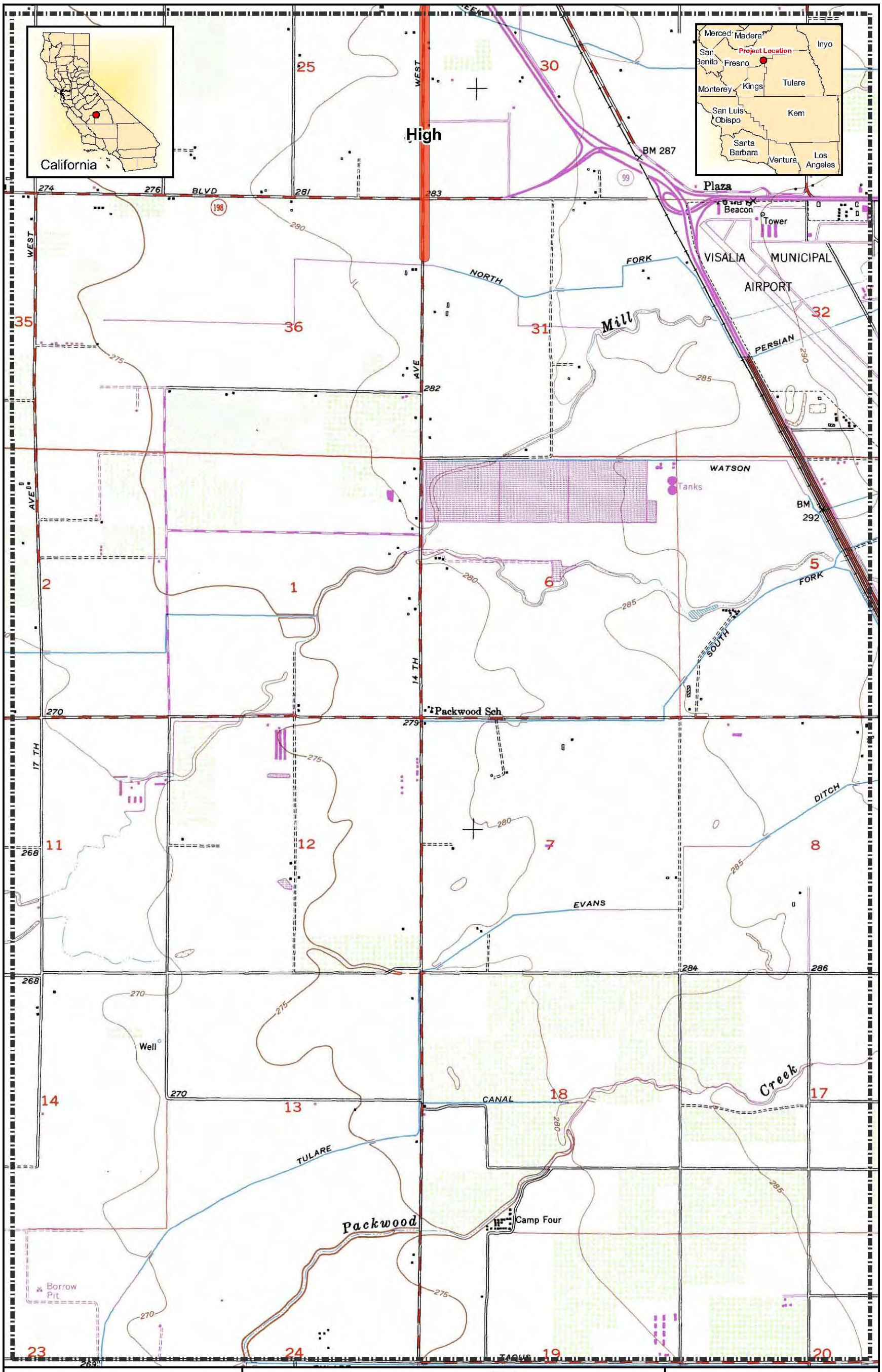
ENVIRONMENTAL CONSULTANTS
Paleontological Sensitivity
Kings River Conservation District
Community Power Plant Project
Figure 3.4-1, Page 6 of 7



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Paleontological Sensitivity

- High
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Source:
Geologic Map of California - Olaf P. Jenkins Edition:
Fresno Sheet:
By R.A. Matthews and J.L. Burnett, 1965

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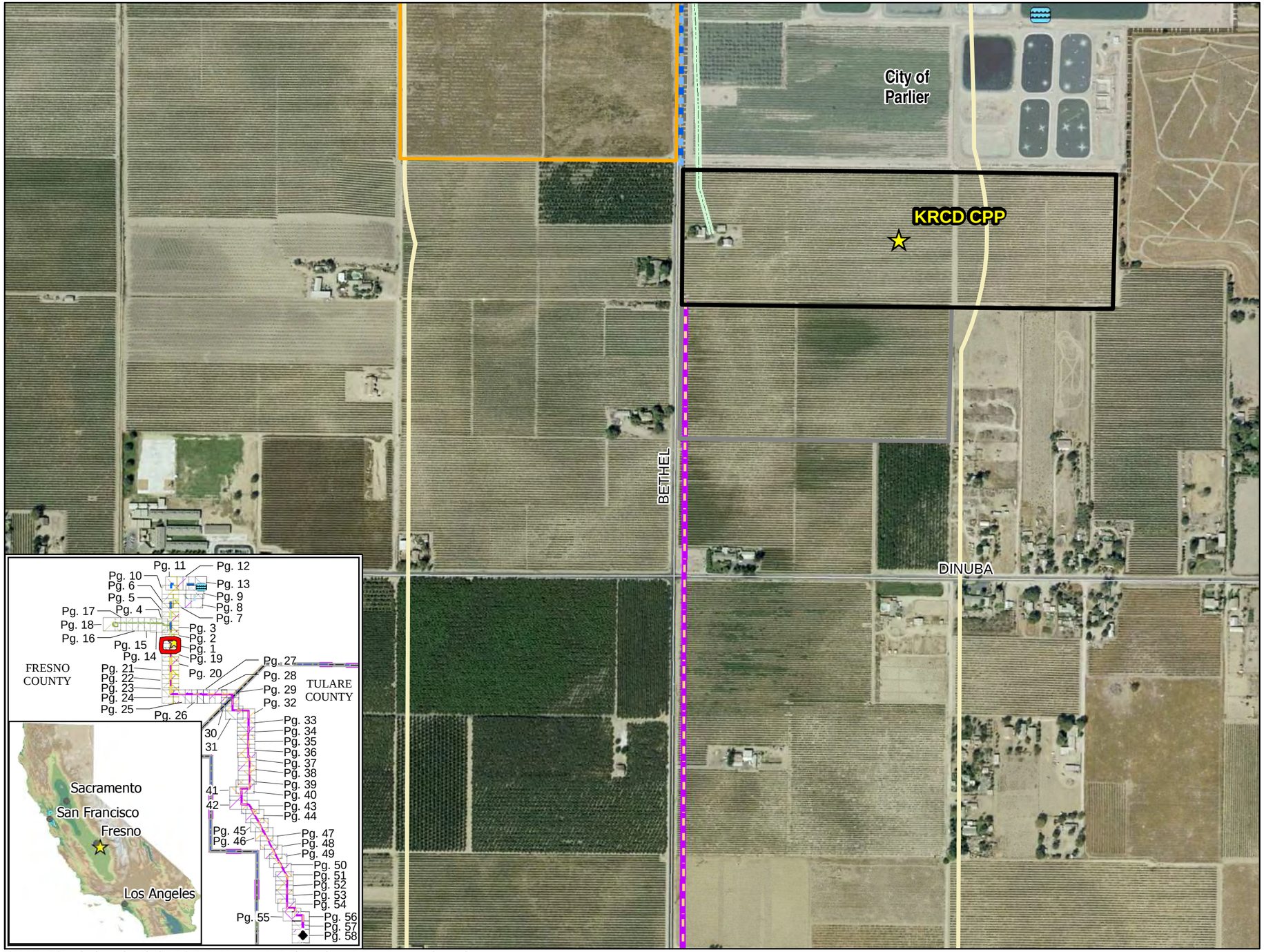
Paleontological Sensitivity

Kings River Conservation District
Community Power Plant Project

Figure 3.4-1, Page 7 of 7

Kings River Conservation District Community Power Plant



KRCD COMMUNITY POWER PLANT

Energy for our Future

Figure: 8.16-2 **Rev. 1**

Biological Resources

Page: 1 of 58

- KRCD Community Power Plant
- KRCD CPP Project Site
- KRCD CPP Project Laydown (New)
- KRCD CPP Project Laydown (Originally Proposed)
- KRCD CPP Site 1 Mile Buffer
- Linears 1/4 Mile Buffer
- Substation
- Proposed 230KV Transmission Line (New)
- Waste Water Percolation Ponds
- Proposed Water Supply Pipeline - Option 1
- Proposed Water Supply Pipeline - Option 2
- Manning Recharge Basin
- HDD Bore / Laydown Area
- HDD Bore Span
- Proposed Natural Gas Laydown Area
- Natural Gas Connection Point
- Proposed Natural Gas Pipeline
- SoCal Gas 7000 Line
- Freeway
- Street
- Railroad
- Parcel
- Waterway
- County Boundary
- City Boundary
- California Tiger Salamander

California Natural Diversity Database

- San Joaquin Kit Fox
- Western Mastiff Bat
- Vernal Pool Fairy Shrimp
- Northern Claypan Vernal Pool
- Heartscale
- Subtle Orache

NOTE: Potable Water and Sewer Connections are on the project site.

N 0 250 500 750 1,000 Feet

1:6,000 Scale 1 Inch equals 500 Feet

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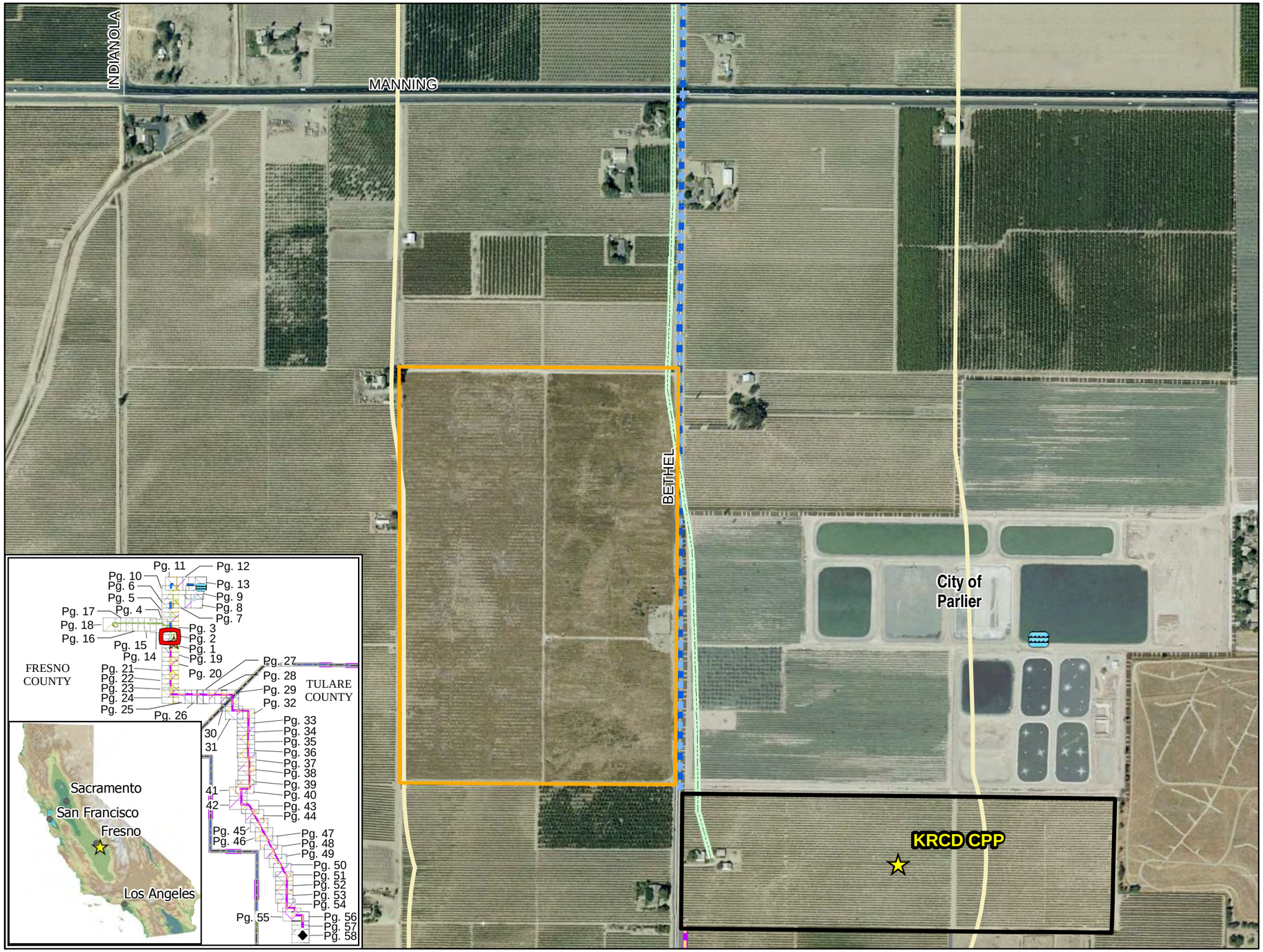
Kings River Conservation District Community Power Plant



KRCD COMMUNITY POWER PLANT

Energy for our Future

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Biological Resources

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N 0 250 500 750 1,000 Feet

1:6,000 Scale 1 Inch equals 500 Feet

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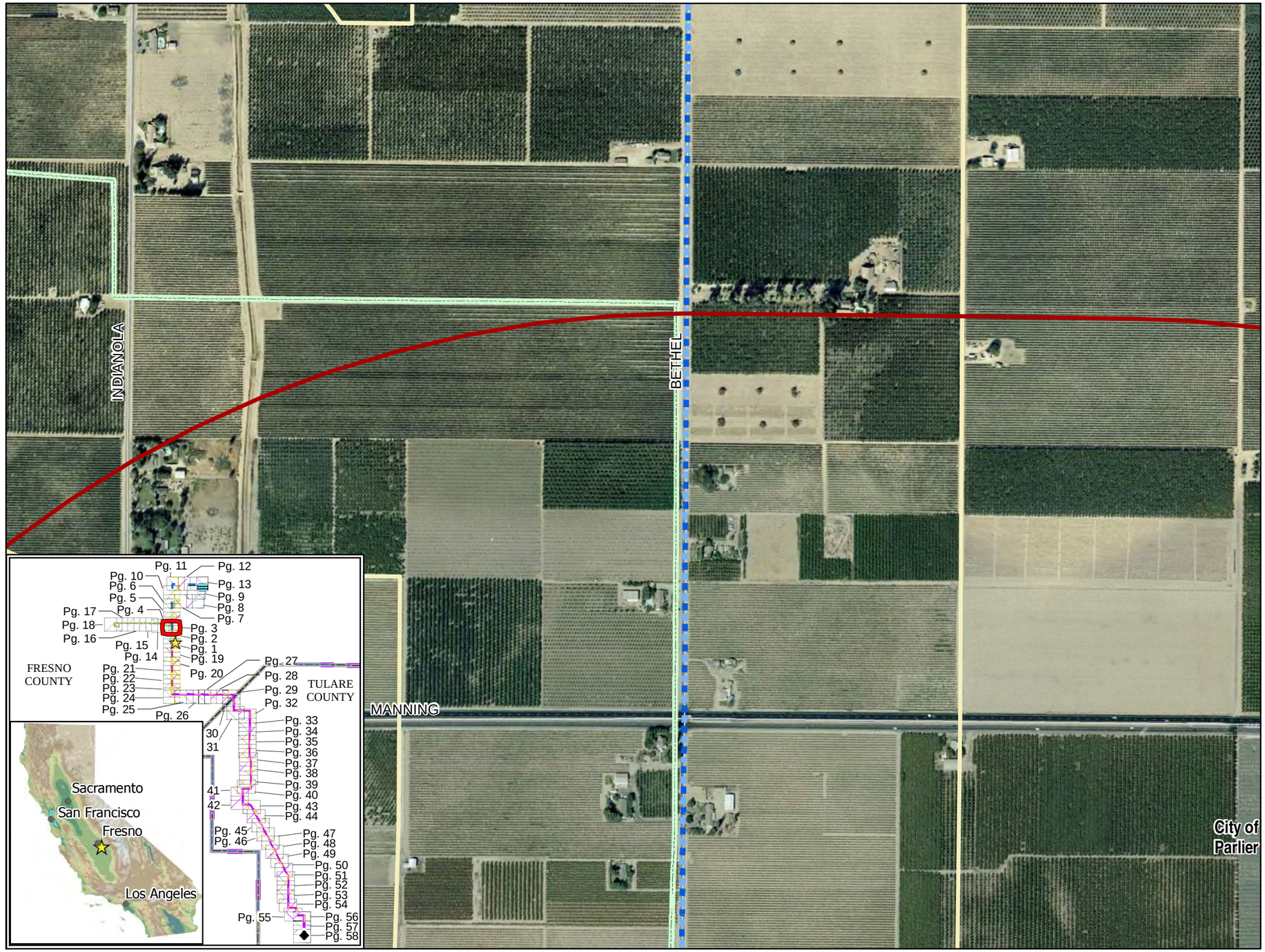
Kings River Conservation District Community Power Plant



KRCD COMMUNITY POWER PLANT

Energy for our Future

Figure: 8.16-2 **Rev.1**

Biological Resources

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- KRCD Community Power Plant
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N 0 250 500 750 1,000 Feet

1:6,000 Scale 1 Inch equals 500 Feet

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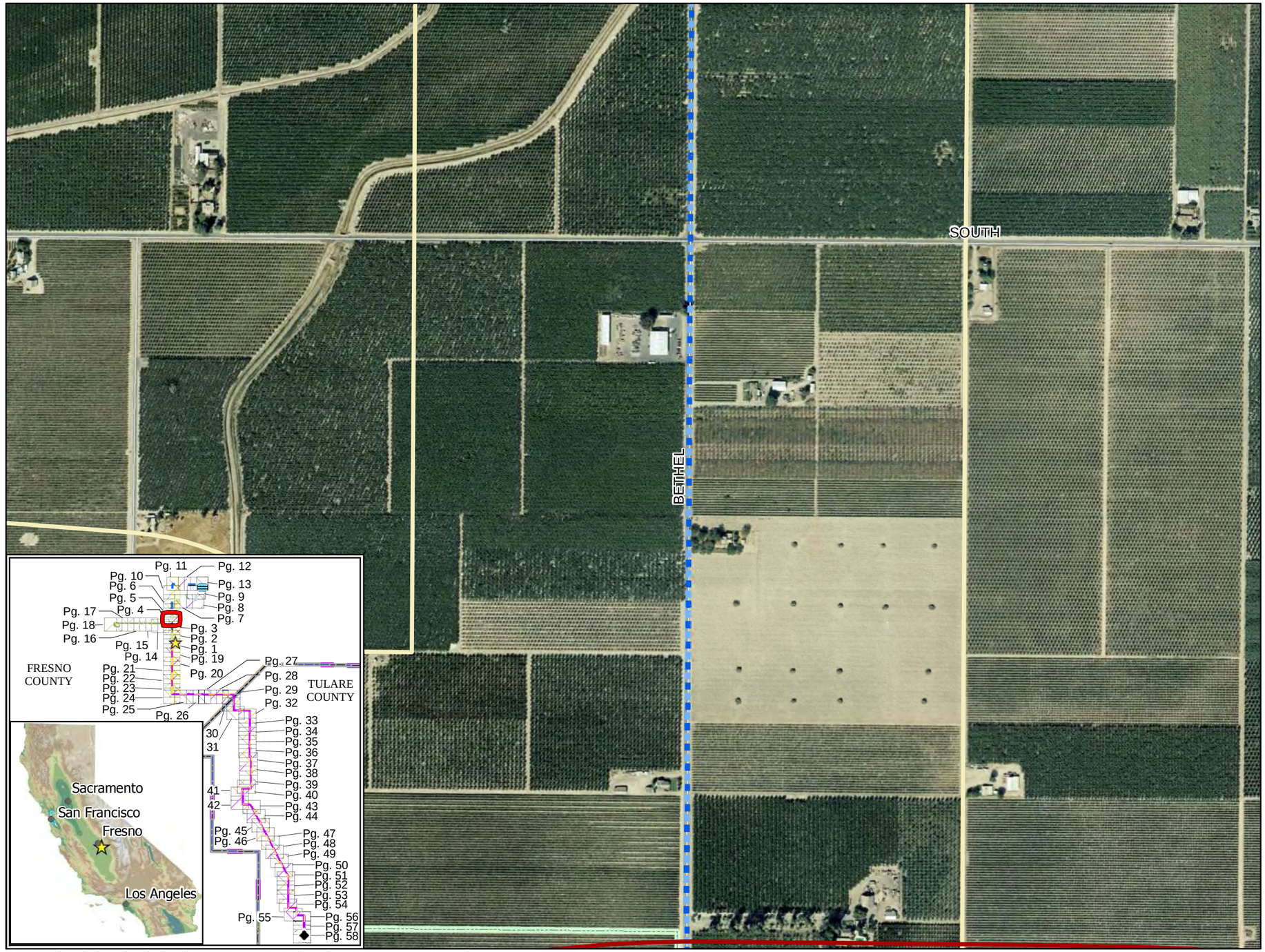
Kings River Conservation District Community Power Plant



KRCD COMMUNITY POWER PLANT

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Figure: 8.16-2 **Rev.1**

Biological Resources

Page: 4 of 58

- KRCD Community Power Plant
- KRCD CPP Project Site
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N 0 250 500 750 1,000 Feet

1:6,000 Scale 1 Inch equals 500 Feet

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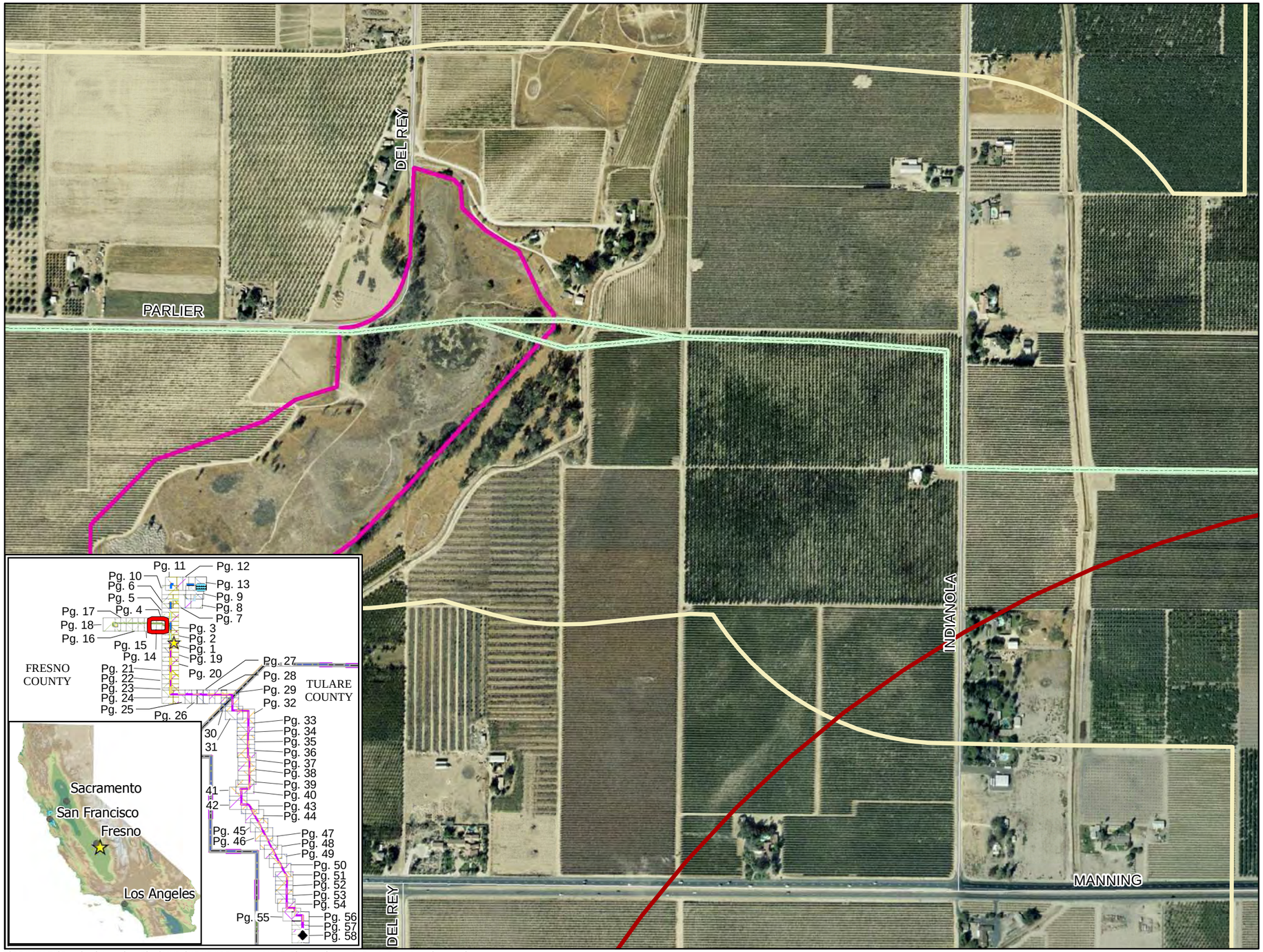

KRCD COMMUNITY POWER PLANT

Energy for our Future

Figure: 8.16-2 **Rev.1**

Biological Resources

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N 0 250 500 750 1,000 Feet

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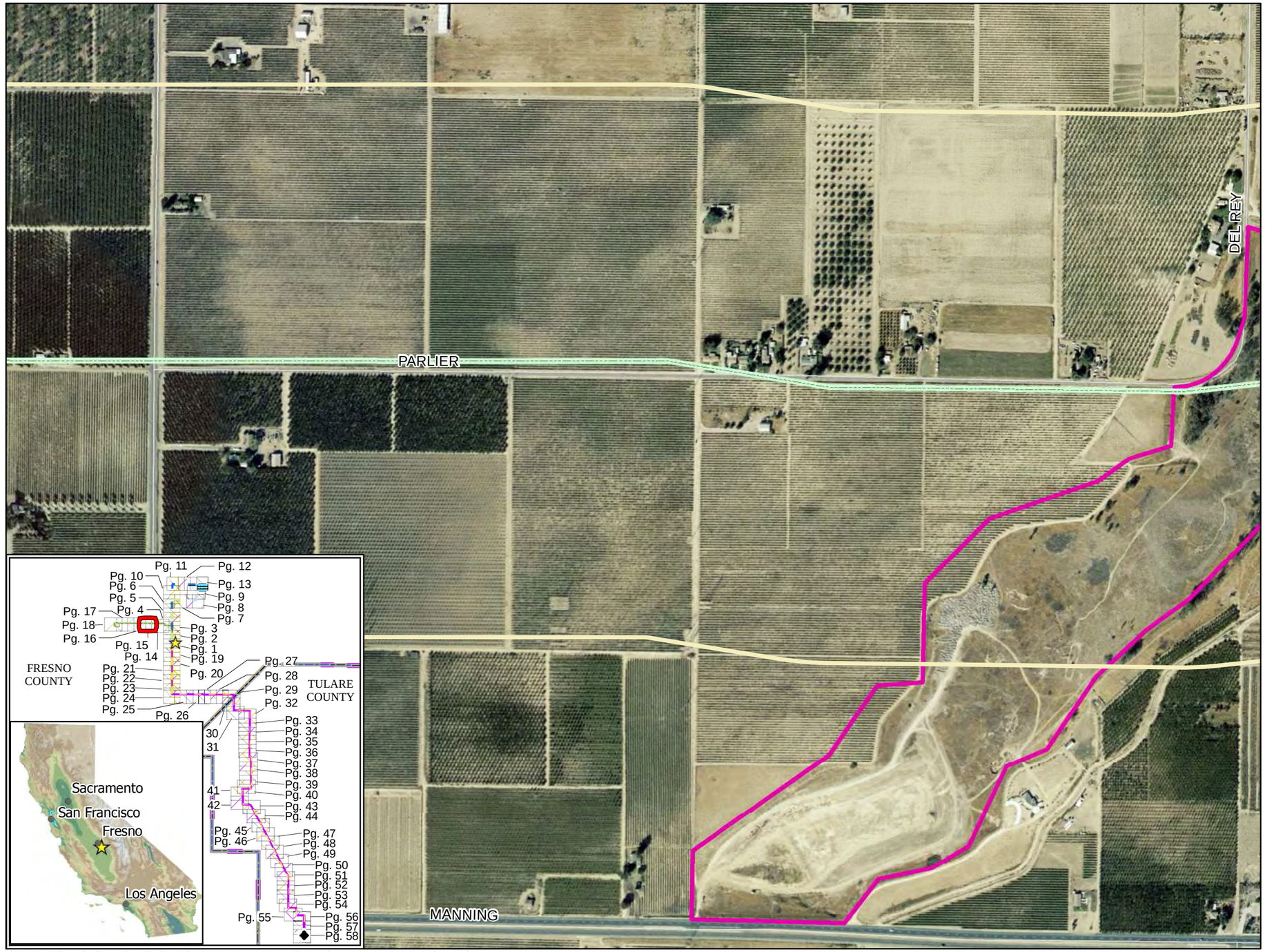
Kings River Conservation District Community Power Plant



KRCD COMMUNITY POWER PLANT

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1:6,000 Scale 1 Inch equals 500 Feet

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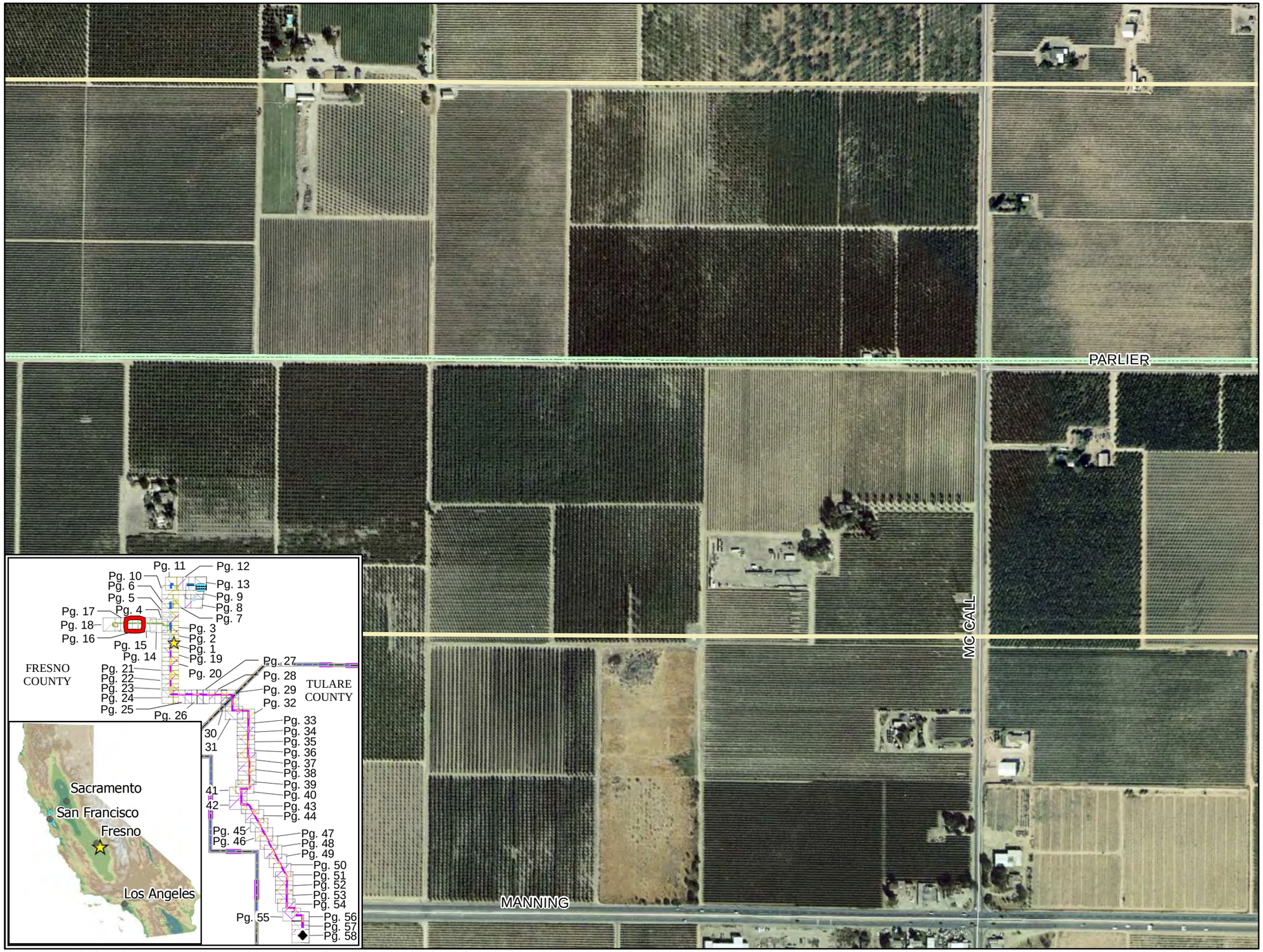
Kings River Conservation District Community Power Plant



KRCD COMMUNITY POWER PLANT

Energy for our Future

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Kings River Conservation District Community Power Plant

KRCD COMMUNITY POWER PLANT

Energy for our Future

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Biological Resources

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- Natural Gas Connection Point
- Proposed Natural Gas Pipeline
- SoCal Gas 7000 Line
- Freeway
- Street
- Railroad
- Parcel
- Waterway
- County Boundary
- City Boundary
- California Tiger Salamander

California Natural Diversity Database

- San Joaquin Kit Fox
- Western Mastiff Bat
- Vernal Pool Fairy Shrimp
- Northern Claypan Vernal Pool
- Heartscale
- Subtle Orache

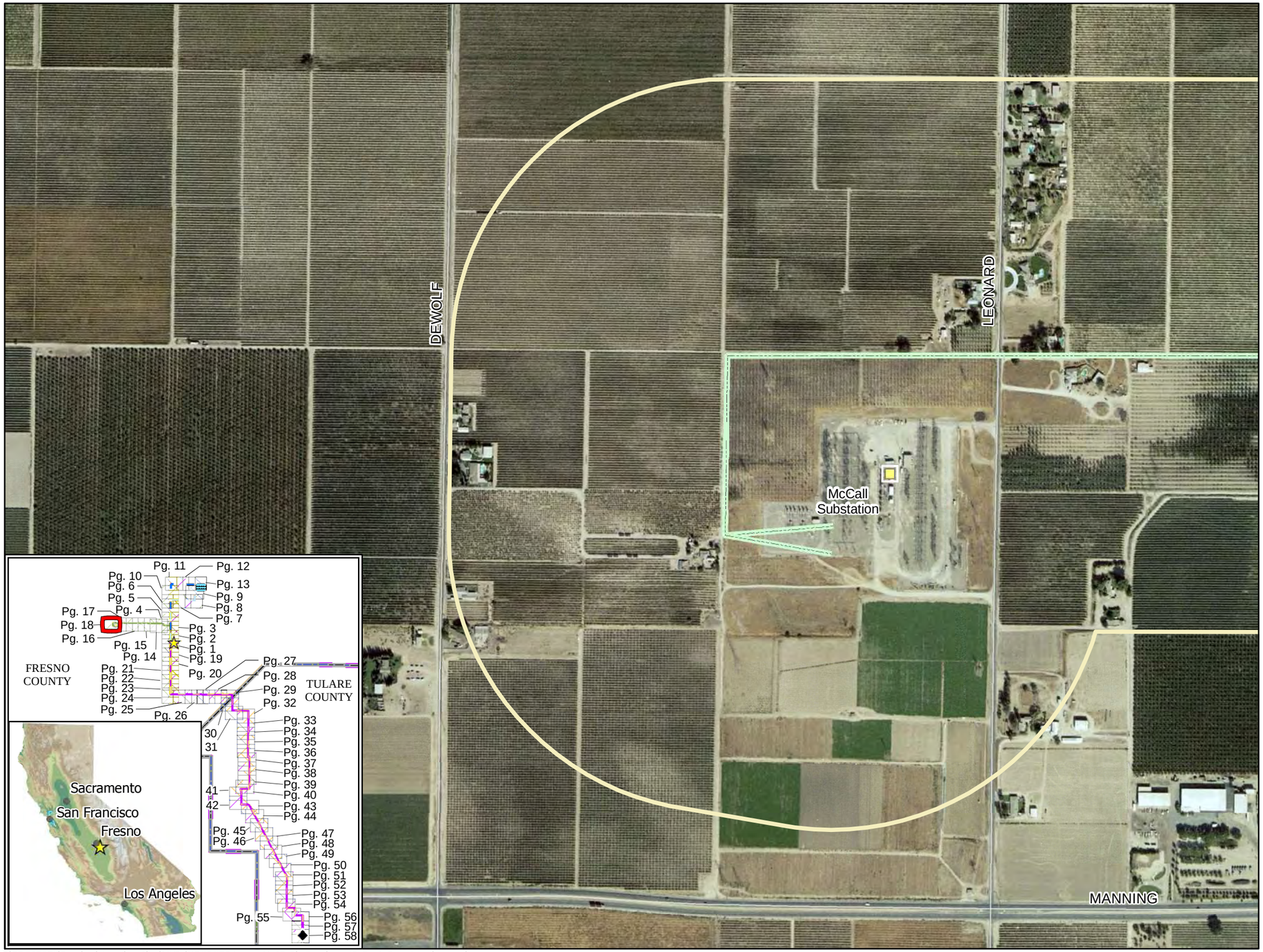
NOTE: Potable Water and Sewer Connections are on the project site.

N 0 250 500 750 1,000 Feet

1:6,000 Scale 1 Inch equals 500 Feet

Z:\PROJECTS\Baseload_Location_Sites\MXDs\KRCDCPP Layout 11x17_Bio-SupplementB_Rev1_Bore_Locations.mxd

Kings River Conservation District Community Power Plant



KRCD COMMUNITY POWER PLANT

Energy for our Future

Figure: 8.16-2 **Rev.1**

Biological Resources

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- KRCD Community Power Plant
- KRCD CPP Project Site
- KRCD CPP Project Laydown (New)
- KRCD CPP Project Laydown (Originally Proposed)
- KRCD CPP Site 1 Mile Buffer
- Linears 1/4 Mile Buffer
- Substation
- Proposed 230KV Transmission Line (New)
- Waste Water Percolation Ponds
- Proposed Water Supply Pipeline - Option 1
- Proposed Water Supply Pipeline - Option 2
- Manning Recharge Basin
- HDD Bore / Laydown Area
- HDD Bore Span
- Proposed Natural Gas Laydown Area
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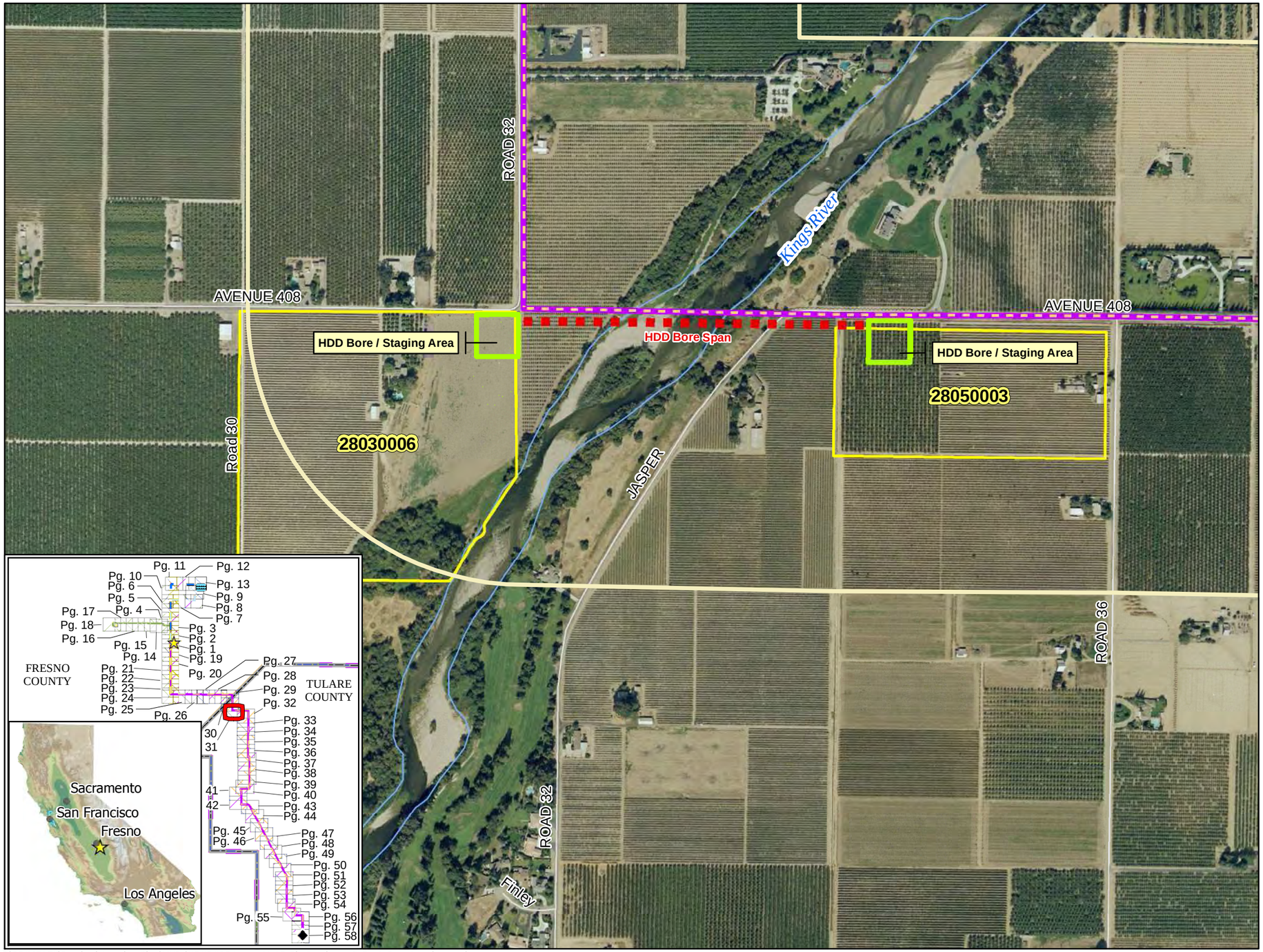
Kings River Conservation District Community Power Plant



KRCD COMMUNITY POWER PLANT

Energy for our Future

Figure: 8.16-2 **Rev.1**

Biological Resources

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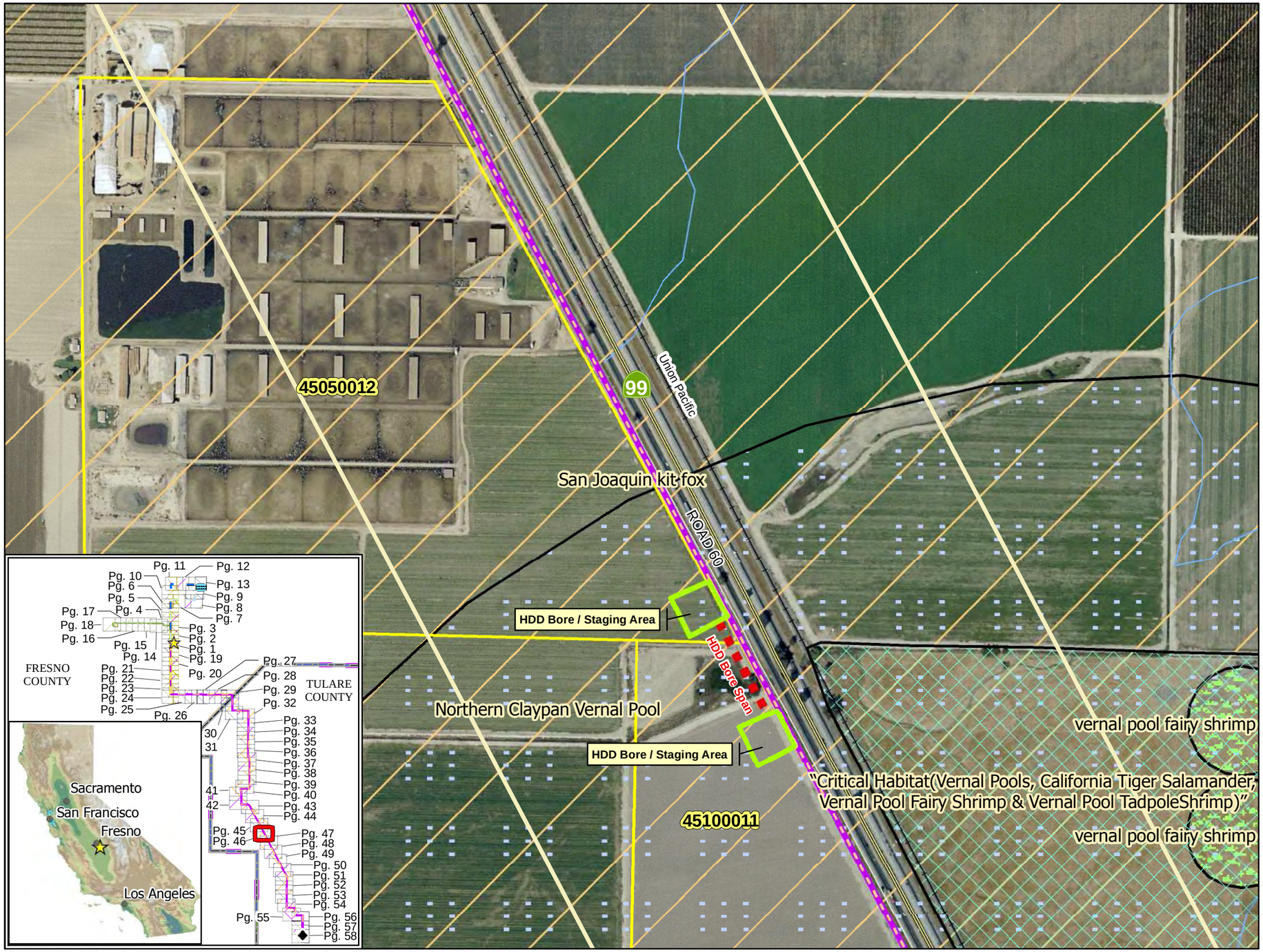
Kings River Conservation District Community Power Plant



KRCD COMMUNITY POWER PLANT

Energy for our Future

Figure: 8.16-2 **Rev.1**

Biological Resources

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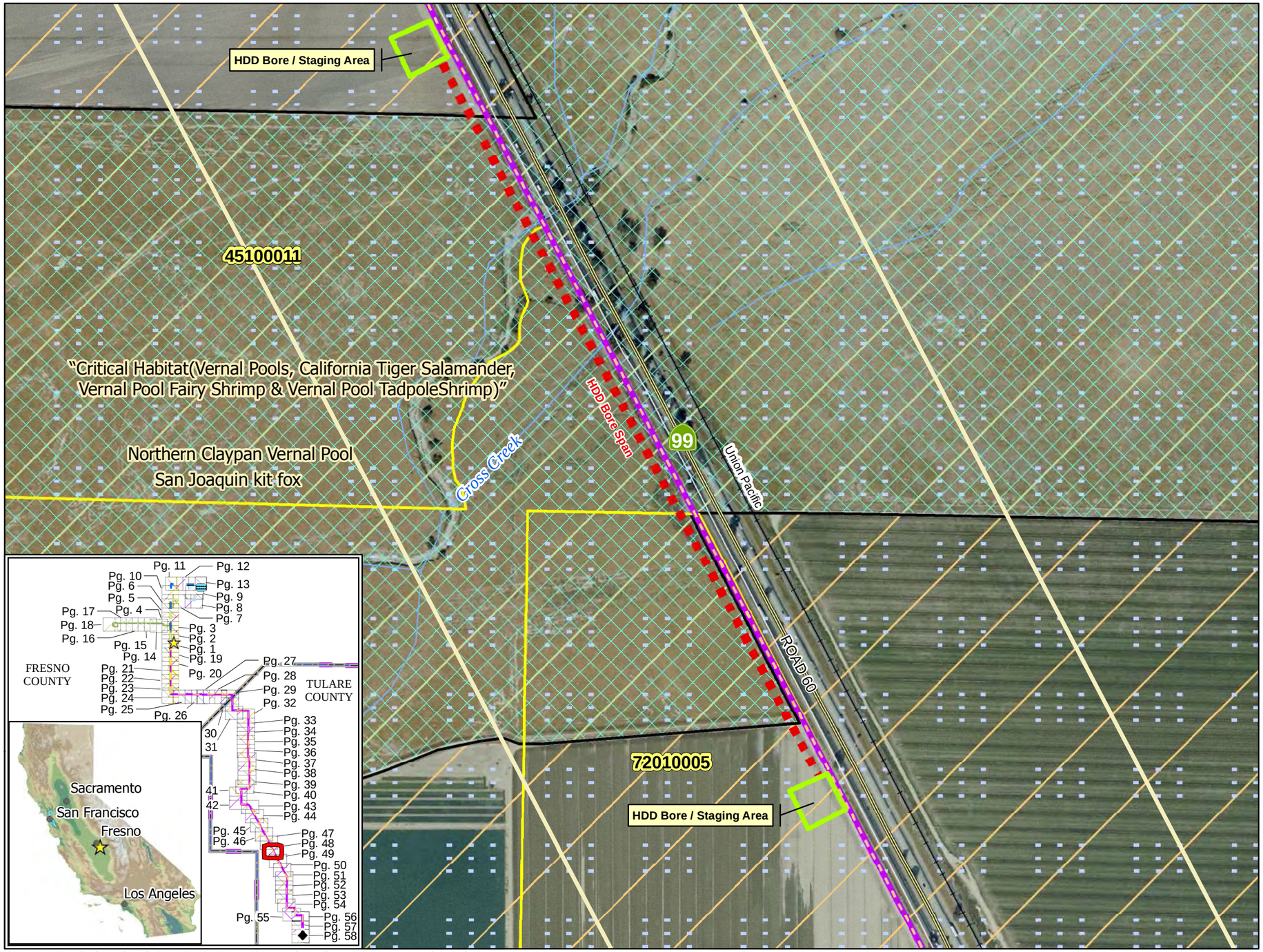
Kings River Conservation District Community Power Plant



KRCD COMMUNITY POWER PLANT

Energy for our Future

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Biological Resources

Page: 48 of 58

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Appendix 8.1-3 (Revised)

Construction Phase Emissions and Impacts

This appendix has been revised to reflect the new location of the construction lay down and temporary parking area. The relatively small number of changes in the body of the text, i.e., Sections 1.0 through 6.0, has been highlighted in yellow. Other portions of this appendix, e.g., revised isopleths figures, modeling results, have been completely revised and are so noted. Some items, which have not changed from those provided in the KRCD CPP AFC (including most of the construction emissions tables) are not included in the attached and are so noted. While the impacts associated with the new laydown area are slightly different from those of the laydown area that was previously selected, the overall change is not significant.

1.0 On-Site Construction

As shown in Table 1, construction of the KRCD CPP is expected to require approximately 24 months. On-site construction will include of the following five main phases:

- Site preparation - clearing, grading, excavation of footings and foundations, and backfilling operations;
- Foundation work - construction of the foundations and structures;
- Installation of major equipment;
- Construction/installation of major structures; and
- Start up and commissioning.

Air emissions resulting from on-site construction will consist of fugitive dust and tailpipe emissions from construction and associated equipment. Fugitive dust emissions will include dust created as a result of:

- Site preparation, grading, excavation, soil/aggregate loading & unloading and backfilling;
- On-site vehicle travel on unpaved and gravel surfaces; and
- Wind erosion of areas disturbed during construction activities.

Combustion emissions will include exhaust from:

- On-site diesel and gasoline powered construction equipment used for site preparation, grading, excavation, and construction of onsite structures;
- Diesel and gasoline powered delivery vehicles bringing materials to the site; and
- Automobiles and trucks used by workers to commute to the construction site.

Combustion exhaust and fugitive dust (particulate matter ten micrograms (µm) diameter and smaller or PM10) emission rates have been estimated for each source of emissions to determine the potential worst-case daily construction impacts. Worst-case daily emissions are expected to occur during the third month of the construction schedule. Annual emissions are based on the average equipment mix and use during the 24-month construction period. Anticipated staffing levels for on-site construction are shown in Table 2.

Table 1
Site Construction Equipment Schedule

	Month																							
Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**Totals**
Scaper		2	2																						4
Bulldozer D6		1	1	1	1	1	1																		6
Bulldozer D9		1	1	1	1	1	1																		6
Grader		1	1	1	1															1	1				6
Loader Backhoe		1	2	2	1	1	1	1	1										1	1					12
Loader Rubber Tire		1	2	2	2	2	1	1	1																12
Vib Roller			1	1	1	1	1	1																	6
Dump Truck		4	4	2	2	1	1	1														1	1	1	18
5000 GLN Wagon Cat 613(water)		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						18
Cat 312B Excavator		2	2	2	2	2	2	2	2	2	2	2	1	1											24
Cat 345B Excavator		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						18
Kom PC1000 Excavator		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						18
Forklift	1	3	3	3	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	2	2	122
Concrete Truck			2	5	5	5	5	5	5	5	3	1	1	1	1	1	1	1	1						48
PU Truck	2	4	10	10	15	15	15	15	15	15	15	15	15	15	15	15	15	10	10	5	5	5	2	2	260
Concrete Pump				1	1	1	1	1	1	1	1														8
4x2 Agr. Tractor		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	45
Skid Steer 1700#		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		44
80' Manlift				2	2	2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	2	2	2	72
60' Manlift			2	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	3	105
Crane 28-32 Ton Swinger			1	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	1	58
Crane 40-45 Ton Swinger				1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	38
Crane 60-62 Ton Swinger											1	2	3	3	2	1									12
Crane 230T										1	1	1	1	1	1										6
Crane 150T								2	2	2	2	2	2	2	2	2	2								20
600 Ton Hyd E-Z Lift								1	1	1	1	1	1	1	1	1	1	1	1						12
Air Compressor		1	1	2	2	2	4	4	4	4	4	4	4	4	4	4	4	4	4	2	2	2			66
Welders		1	1	1	1																				4
Portable compaction-vibratory		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	3		108
Concrete vibrators				2	4	4	4	4	4	4	4	4	4	2											40
Concrete trowel machine				1	1	1	1	1	1																6
Portable power generators	1	1	1																						3

Table 2
Site Construction Staffing Plan

	Month																							Total Person Months
Job Category - Craft	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	
Boilermakers						4	10	10	20	30	40	50	50	60	60	60	40	40	20	10	5	5			514
Brick Layers / Masons			2	4	6	6	4	2	2	2	2	2	2	2	1						2	2			41
Carpenters	2	8	20	30	30	30	24	24	24	24	10	10	10	6	6										258
Electricians	4	4	4	6	6	6	10	20	30	40	60	60	60	60	50	50	40	40	30	30	20	10	10	5	655
Equipment Operators	4	8	10	10	10	20	20	20	20	25	25	30	30	20	20	20	15	10	2	2	2	2	2	2	329
Insulators												4	4	10	10	10	10	20	20	10	4	4			106
Iron Workers		5	20	20	30	30	30	30	24	20	10	10	10	5	5	5									254
Laborers	4	10	10	20	20	20	30	30	30	30	30	30	30	30	20	20	20	15	10	10	5	5			429
Millwrights						4	4	4	10	20	30	30	30	30	30	30	30	20	10	10	6	4	2	2	306
Painters													2	4	4	4	4	6	6	2	2	2			36
Pipefitters		4	15	20	25	40	40	40	40	60	60	60	70	70	70	70	60	60	40	20	4	4	4	2	878
Sheetmetal Workers											4	4	6	6	6	6	6	6	4						48
Surveyors	2	4	4	4	4	4	4	4	2	2	2	1	1	1	1	1	1	1							43
Teamsters	2	4	4	4	8	8	8	10	10	10	10	10	8	8	6	4	4	4	2	2	1	1	1	1	130
Total Craft Labor	**18**	**47**	**89**	**118**	**139**	**172**	**184**	**194**	**212**	**263**	**283**	**301**	**313**	**312**	**289**	**280**	**230**	**222**	**144**	**96**	**51**	**39**	**19**	**12**	**4,027**
EPC Contractor Staff	6	20	40	40	50	50	50	50	50	50	50	60	60	60	50	50	40	40	40	30	20	20	10	5	941
Total Construction Manpower	**24**	**67**	**129**	**158**	**189**	**222**	**234**	**244**	**262**	**313**	**333**	**361**	**373**	**372**	**339**	**330**	**270**	**262**	**184**	**126**	**71**	**59**	**29**	**17**	**4,968**

2.0 Water/Natural Gas Pipelines and Transmission Line

The KRCD CPP includes the installation of three off-site interconnections:

- Reclaimed water supply pipelines run for an off-site distance of approximately five miles;
- Natural gas fuel supply pipeline run for an off-site distance of approximately 26 miles; and
- Electrical transmission line run for a distance of approximately five miles.

These off-site interconnection facilities will generate short-term construction impacts, including fugitive dust and construction equipment combustion emissions, from the same types of sources as those causing on-site construction impacts. However, the duration and magnitude of these off-site impacts will be considerably less than those resulting from on-site construction activities.

For the water pipelines, construction activities take approximately three months, anticipated as months 13 through 15 of the overall 24-month construction schedule, and will be performed in 500-foot long sections to minimize fugitive dust and construction equipment combustion emissions. For the natural gas pipeline, construction activities take approximately 12 months, anticipated as months 8 through 19 of the overall 24-month construction schedule, and will also be performed in 500-foot long sections to minimize fugitive dust and construction equipment combustion emissions. The electrical transmission line installation will take approximately three months (months 11 through 13 of the construction schedule) and will not disturb significant square footage.

Tables 3 through 5 show the staffing plans for these three facilities. The equipment used for construction of each of these facilities is identified in the applicable construction emissions (CE) tables at the end of the end of this appendix.

Table 3 Water Pipeline Staffing Plan																							
	Month																						Total Person Months
Job Category - Craft	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	
Electricians														2	2								4
Equipment Operators													8	8	8								24
Laborers													10	10	10								30
Pipefitters													10	10	10								30
Surveyors													4	2	2								8
Teamsters													6	6	6								18
Total Craft Labor	0	0	0	0	0	0	0	0	0	0	0	0	38	38	38	0	0	0	0	0	0	0	114
Contractor Staff													6	6	6								18
Total Construction Manpower	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**44**	**44**	**44**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**132**

Table 4 Gas Pipeline Staffing Plan																							
	Month																						Total Person Months
Job Category - Craft	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	
Electricians													2	4	4	4	2	2	2				20
Equipment Operators								30	30	30	30	30	30	30	30	30	30	30	30				360
Laborers								30	40	40	40	40	40	40	40	40	40	40	30				460
Pipefitters								20	50	50	50	50	50	50	50	50	50	50	20				540
Surveyors								2	6	6	6	6	6	4	4	4	2	6	2				54
Teamsters								2	8	8	8	8	8	8	8	8	8	8	2				84
Total Craft Labor	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**84**	**134**	**134**	**134**	**134**	**136**	**136**	**136**	**136**	**132**	**136**	**86**	**0**	**0**	**0**	**1,518**
Contractor Staff								4	10	10	10	10	10	10	10	10	10	10	6				110
Total Pipeline Construction Manpower	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**88**	**144**	**144**	**144**	**144**	**146**	**146**	**146**	**146**	**142**	**146**	**92**	**0**	**0**	**0**	**1,628**

Table 5
Electric Transmission Line Staffing Plan

	Month																						Total Person Months
Job Category - Craft	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	
Electricians											10	10	10										30
Equipment Operators											8	8	8										24
Laborers											10	10	10										30
Surveyors											2	2	2										6
Structural											8	8	4										
Civil											4	4	4										12
Total Craft Labor	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**42**	**42**	**38**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**102**
Contractor Staff											4	4	4										12
Total Construction Manpower	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**46**	**46**	**42**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**134**

3.0 Available Mitigation Measures

The following mitigation measures are proposed to control combustion exhaust emissions from the diesel heavy duty equipment used during construction of the KRCD CPP:

- Operational measures, such as limiting engine idling time and shutting down equipment when not in use;
- Regular preventive maintenance to prevent emission increases due to engine problems;
- Use of ultra-low sulfur and low aromatic fuel meeting California standards for motor vehicle diesel fuel, if available; and
- Use of low-emitting diesel engines meeting federal emissions standards for construction equipment, if available.

The following mitigation measures are proposed to control fugitive dust emissions during construction of the KRCD CPP:

- Use either water application or chemical dust suppressant application to control dust emissions from unpaved surface travel and unpaved parking areas;
- Use vacuum sweeping and/or water flushing of paved road surface to remove buildup of loose material to control dust emissions from travel on paved access roads (including adjacent public streets impacted by construction activities) and paved parking areas;
- Cover all trucks hauling soil, sand, and other loose materials, or require all trucks to maintain at least two feet of freeboard;
- Limit traffic speeds on unpaved surfaces;
- Install sandbags or other erosion control measures to prevent silt runoff to roadways;
- Re-plant vegetation in disturbed areas as quickly as practicable;
- As needed, use gravel pads along with wheel washers or wash tires of all trucks exiting construction site that carry track-out dirt from unpaved surfaces; and
- Mitigate fugitive dust emissions from wind erosion of areas disturbed from construction activities (including storage piles) by application of either water or chemical dust suppressant and/or use of wind-breaks.

4.0 Construction Emissions (with Mitigation Measures)

4.1 On-Site Construction

Tables 6 and 7 show the estimated maximum daily and annual equipment exhaust and fugitive dust emissions with recommended mitigation measures for on-site construction activities. Detailed emission calculations are included in Tables CE1 – CE9 at the end of this appendix.

4.2 Off-Site (Pipeline/Transmission Line) Construction

Table 8 shows the estimated maximum daily equipment exhaust and fugitive dust emissions with recommended mitigation measures for the water and natural gas pipelines and the transmission line interconnect construction activities. The following are the expected construction periods for each pipeline/transmission line route:

- Water pipeline – 3 months;
- Natural gas pipeline – 12 months; and
- Transmission line interconnection – 3 months.

Because of the temporary nature of these off-site construction activities, annual emissions are not included in Table 8. Detailed emission calculations are included in Tables CE10 - CE21 at the end of this appendix.

Table 6
Maximum Daily Emissions On-Site During Construction With Maximum Fugitive Dust Emissions From Month 3 (in lbs/day)

	NO_x	**CO**	**VOCs**	**SOx**	**PM10**	**PM2.5[6]**
Construction Equipment	188.0[1]	72.8[2]	25.6[3]	0.24[4]	8.0[5]	7.2
Fugitive Dust	--	--	--	--	21.58	2.84
Truck Deliveries	35.6	5.5	1.2	0.05	0.64	0.58
Worker Travel	23.52	215.04	23.52	0.15	1.34	1.21
Total Emissions						
Total	**247.12**	**293.34**	**50.32**	**0.44**	**31.56**	**11.83**

Notes:
1. Based on 23.5 lbs/hr x 8 hrs.
2. Based on 9.1 lbs/hr x 8 hrs.
3. Based on 3.2 lbs/hr x 8 hrs.
4. Based on 0.03 lbs/hr x 8 hrs.
5. Based on 1.0 lbs/hr x 8 hrs.
6. PM2.5 vehicle emissions assumed as 90% of PM10 vehicle emissions.

Acronyms: Pounds per hour = lbs/day
Pounds per hour =lbs/hr
Hour – hr

Table 7 Annual Emissions On-Site During Construction (tons/yr)						
	NOx	**CO**	**VOCs**	**SOx**	**PM10**	**PM2.5[1]**
Construction Equipment	12.73	5.41	1.88	0.01	0.60	0.54
Fugitive Dust	--	--	--	--	1.71	0.17
Truck Deliveries	4.63	0.72	0.16	0.006	0.08	0.07
Worker Travel	1.70	15.54	1.70	0.011	0.01	0.01
Total Emissions						
Total	19.06	21.67	3.74	0.027	2.40	0.79
Notes: 1. PM2.5 vehicle emissions assumed as 90% of PM10 vehicle emissions.						

Table 8 Maximum Daily Emissions During Pipeline/Transmission Line Interconnect Construction (lbs/day)						
	NOx	**CO**	**VOCs**	**SOx**	**PM10**	**PM2.5[1]**
Water Supply Pipeline						
Construction Equipment	29.07	17.00	5.44	0.03	2.06	1.85
Fugitive Dust	--	--	--	--	1.34	0.07
Truck Deliveries	14.24	2.2	0.48	0.02	0.26	0.23
Worker Travel	2.77	25.34	2.77	0.018	0.16	0.14
Total Emissions	46.08	44.54	8.69	0.068	3.82	2.29
Natural Gas Fuel Pipeline						
Construction Equipment	40.44	20.48	6.70	0.04	2.52	2.27
Fugitive Dust	--	--	--	--	1.31	0.06
Truck Deliveries	14.24	2.2	0.48	0.02	0.26	0.23
Worker Travel	9.24	84.48	9.24	0.06	0.53	0.48
Total Emissions	63.92	107.16	16.42	0.12	4.62	3.04
Transmission Line Interconnect						
Construction Equipment	30.29	16.48	5.33	0.03	1.80	1.62
Fugitive Dust	--	--	--	--	0.07	0.01
Truck Deliveries	17.8	2.75	0.6	0.023	0.32	0.29
Worker Travel	2.94	26.88	2.94	0.02	0.17	0.15

Table 8 Maximum Daily Emissions During Pipeline/Transmission Line Interconnect Construction (lbs/day)						
	NOx	**CO**	**VOCs**	**SOx**	**PM10**	**PM2.5[1]**
Total Emissions	51.03	46.11	8.87	0.073	2.36	2.07
Notes: 1. PM2.5 vehicle emissions assumed as 90% of PM10 vehicle emissions.						

5.0 Potential Air Quality Impacts Resulting from Construction

5.1 On-Site Construction

Ambient air quality impacts from emissions during construction of the KRCD CPP were estimated using an air quality dispersion modeling analysis. The modeling analysis considers the construction site location, the surrounding topography, and the sources of emissions during construction, including on-site vehicle and equipment exhaust emissions and fugitive dust.

5.1.1 Dispersion Modeling Methodology

As in the analysis of potential air quality impacts from KRCD CPP operations, the United States Environmental Protection Agency (USEPA) Industrial Source Complex Short Term (ISCST3) model was used to estimate ambient impacts from construction activities. A more detailed discussion of the inputs to the ISCST3 dispersion model is included in the Section 8.1 - Air Quality.

For the purpose of estimating potential impacts, the emission sources for the construction site were grouped into three categories: exhaust emissions, construction (wheel) dust emissions, and wind blown dust emissions. The exhaust and construction dust emissions were modeled as volume sources. The wind blown dust emissions were modeled as an area source. For the volume sources, the vertical dimension was set to six meters. An effective plume height of 0.5 meters was used in the modeling analysis for the area sources. The KRCD CPP project area was further divided into two areas, the temporary construction laydown area and the project site. Fugitive dust generated from construction equipment and exhaust emissions were divided between these two construction areas. Ninety percent of the construction activities were assumed to occur within the project site. The remaining ten percent of construction activities plus worker travel were assigned to the laydown area. For short-term impacts (24-hours and less), the maximum emissions could occur during a one-month period out of the 24-month overall construction period. For annual impacts, KRCD CPP annual emissions over the 24-month construction period were used. To determine the construction impacts on short-term ambient standards (24 hours and less), the worst-case daily onsite construction emission levels shown in Table 6 were used. For pollutants with annual average ambient standards, the annual onsite emission levels shown in Table 7 were used. Table 9 lists the parameters input to the ISCST3 model for short-term and annual average construction emissions calculations.

Table 9 Construction – ISCST3 Source Parameters						
Source name	**Purpose**	**Type**	**Release Height meters**	**Initial Lateral Dimension meters**	**Initial Vertical Dimension meters**	**Length of Side Meters**
TEMPWND	Wind-blown dust, temporary laydown area	AREA	.5	n/a	n/a	199.5 short-term 126.1 annual
PROJWND	Wind-blown dust, project site	AREA	.5	n/a	n/a	247.8 short-term 156.7 annual
TEMPFUG	Equipment fugitive dust, temporary laydown area	VOLUME	0	46.4 short-term 29.3 annual	6	n/a
PROJFUG	Equipment fugitive dust, project site	VOLUME	0	57.6 short-term 36.4 annual	6	n/a
TEMPEX	Exhaust emissions, temporary laydown area	VOLUME	0	46.4 short-term 29.3 annual	6	n/a
PROJEX	Exhaust emissions, project site	VOLUME	0	57.6 short-term 36.4 annual	6	n/a

The construction impacts modeling analysis used the same receptor locations as used for the KRCD CPP operating impact analysis. A detailed discussion of the receptor locations is included in the AFC Section 8.1 - Air Quality.

The same meteorological data set (1989 Fresno data) and background ambient levels, which were used for the modeling analysis of KRCD CPP operational emissions (see AFC Section 8.1 - Air Quality), were used for the construction emissions impact analysis.

The one-hour and annual average concentrations of NO2 were computed following the revised USEPA guidance for computing these concentrations (August 9, 1995 *Federal Register*, 60 FR 40465). The ISC_ OLM model was used to calculate the one-hour and annual average NO2 impacts. Concurrent ozone (O3) data (from 1989) were provided by the SJVAPCD from the Fresno Drummond Street monitoring station (SJVAPCD, 2003).

5.1.2 Modeling Results

Based on the emission rates of nitrous oxide (NOx), sulfur dioxide (SO2), carbon monoxide (CO), particulate matter ten micrograms (µm) diameter and smaller (PM10), and particulate matter 2.5 µm diameter and smaller, as well as the meteorological data, the ISCST3 model calculates ambient impacts for each pollutant. The modeled 1-hour, 3-hour, 8-hour, and 24-hour ambient impacts are based on the worst-case daily emission rates of NOx, SO2, CO, PM10, and PM2.5 as applicable. The annual impacts are based on the annual emission rates of these pollutants.

The modeling analysis results are shown in Table 10. Also included in this table are the maximum background levels that have occurred during the past three years and the resulting total ambient impacts. As shown in Table 10, with the exception of PM10 and PM2.5 impacts, construction impacts for all modeled pollutants are expected to be below the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS). The

PM10 impacts from KRCD CPP construction activities will not exceed the 24-hour NAAQS. The state PM10 and PM2.5 standards and federal PM2.5 standards are exceeded by ambient background levels in the absence of KRCD CPP construction emissions.

The total impacts shown in Table 10 assume that the maximum background levels occur simultaneously with the maximum KRCD CPP impacts. This conservative assumption, while useful for estimating the worst-case total impact that is possible, is not realistic and the actual total impacts will almost certainly be considerably less than those shown. PM10 impacts resulting from construction will be relatively short in duration, e.g., the maximum KRCD CPP impacts are anticipated to occur in the third month of the construction schedule.

Figures 1 & 2 show the extent of the modeled impacts from construction PM10 for the 24-hour and annual averaging periods. As shown on these isopleths, while maximum impacts occur along the southern construction fence line, concentrations decrease rapidly at locations only a few hundred meters away from the Project site. For example, as shown on Figure 1 the maximum 24-hr average PM10 impact along the southern fence line is approximately 35 micrograms per cubic meter ($\mu g/m^3$). However, at locations 250 to 500 meters way from the fence line PM10 impact decreases to approximately 10 $\mu g/m^3$.

Table 10
KRCD CPP
Modeled Maximum Construction Impacts

Pollutant	Averaging Time	Maximum Construction Impacts ($\mu g/m^3$)	Background ($\mu g/m^3$)	Total Impact ($\mu g/m^3$)	State Standard ($\mu g/m^3$)	Federal Standard ($\mu g/m^3$)
NO_2[a]	1-Hour	174	118	292	339c	--
	Annual	23	23	46	57c	100
SO_2	1-Hour	1.5	78	80	650	--
	3-Hour	0.6	78	79	--	1300
	24-Hour	0.4	16	16	105	365
	Annual	0.04	8	8	--	80
CO	1-Hour	1457	4114	5571	23,000	40,000
	8-Hour	587	3086	3673	10,000	10,000
PM_{10}	24-Hour	34.7	106	141	50	150
	Annual	5.8	44	50	20	--b
$PM_{2.5}$	24-Hour	12.9	86	99	--	35
	Annual	2	20	22	12	15

Notes:
a. OLM_ISC used to calculate 1-hr and annual average impacts.
b. Revoked December 16, 2006.
c. From ARB 6/26/08.

Emissions impacts due to fugitive dust and equipment tailpipe emissions during KRCD CPP construction are similar to those for the construction of other power projects, and presumably significantly less than those associated with larger scale (i.e., both land area and duration) land development activities. While fugitive dust and other PM10 emissions impacts from KRCD CPP construction activities are unavoidable, PM10 mitigation measures proposed for the KRCD CPP have been included to minimize fugitive dust emissions during construction.

Given their size, the input and output modeling files for construction impacts are being provided electronically rather than as hardcopy.

5.1.3 Health Risk from Diesel Exhaust

The diesel combustion portion of annual PM10 emissions from Table 7 was modeled in the CAPCOA Hotspots Analysis and Reporting Program (HARP) to assess the excess cancer risk associated with diesel PM_{10} exhaust. The risk calculated within HARP assumes a 70-year exposure. The exposure was adjusted by a factor of 2 /70, or 0.0286 to correct for the 24-month (two year) exposure during the construction period.

The maximum predicted off-site cancer risk from diesel exhaust was 19.3 x 10^{-6} (19.3 in one million). This impact was located along the southern project site fenceline. The risk would decrease rapidly with distance from the fenceline. As Figure 3 shows, the projected risk drops to 10 in one million, approximately 70 meters south of the fenceline. No sensitive receptors were found within that area. The greatest risk at a census block receptor (Block 6802019) was predicted to be 2.8 x 10^{-6} (2.8 in one million). The impacts at all sensitive receptors were predicted to fall below the 10 in one million level considered to be significant under the SJVAPCD's California Environmental Quality Act (CEQA) guidelines. Figure 3 shows the location of some nearby sensitive receptors and the projected risks. Using census block data within HARP, for cancer risks over one in one million, the HARP model predicted cancer burdens of 7.14 x10^{-4} (0.000714). A cancer burden value of "1" means that one excess cancer might occur. Construction of the KRCD CPP would expect far less than one excess cancer. These calculations may be found as Attachments 1 & 2 to this appendix.

5.2 Impacts from Pipeline/Transmission Line Interconnect Construction

Construction of the water and natural gas pipelines and the transmission line will be of short duration at any one location and require minimal equipment. This construction will generally occur along public roads and utility rights-of-way. Therefore, the potential ambient air quality impacts associated with these construction activities are expected to be minimal.

6.0 References

SJVAPCD. 2003. E-mail from Leland Villalvazo, Supervising Air Quality Specialist. November 13.

CONSTRUCTION EMISSIONS FIGURES & TABLES

- **Figures 1 – 3**
  (Figures 1 through 3 have been revised due to the new location of the construction lay down area.)

- **Tables CE1 through CE21**
  (Table CE5 has been revised and is included. All other CE tables, i.e., CE1 through CE4 and CE6 through CE21, are not included as these tables remain the same as before. Refer to KRCD CPP AFC Appendix 8.1-3 for these tables.)

- **Notes for Construction Emissions Tables**
  (This section has not changed and therefore it is not included. Refer to KRCD CPP AFC Appendix 8.1-3 for this information.)

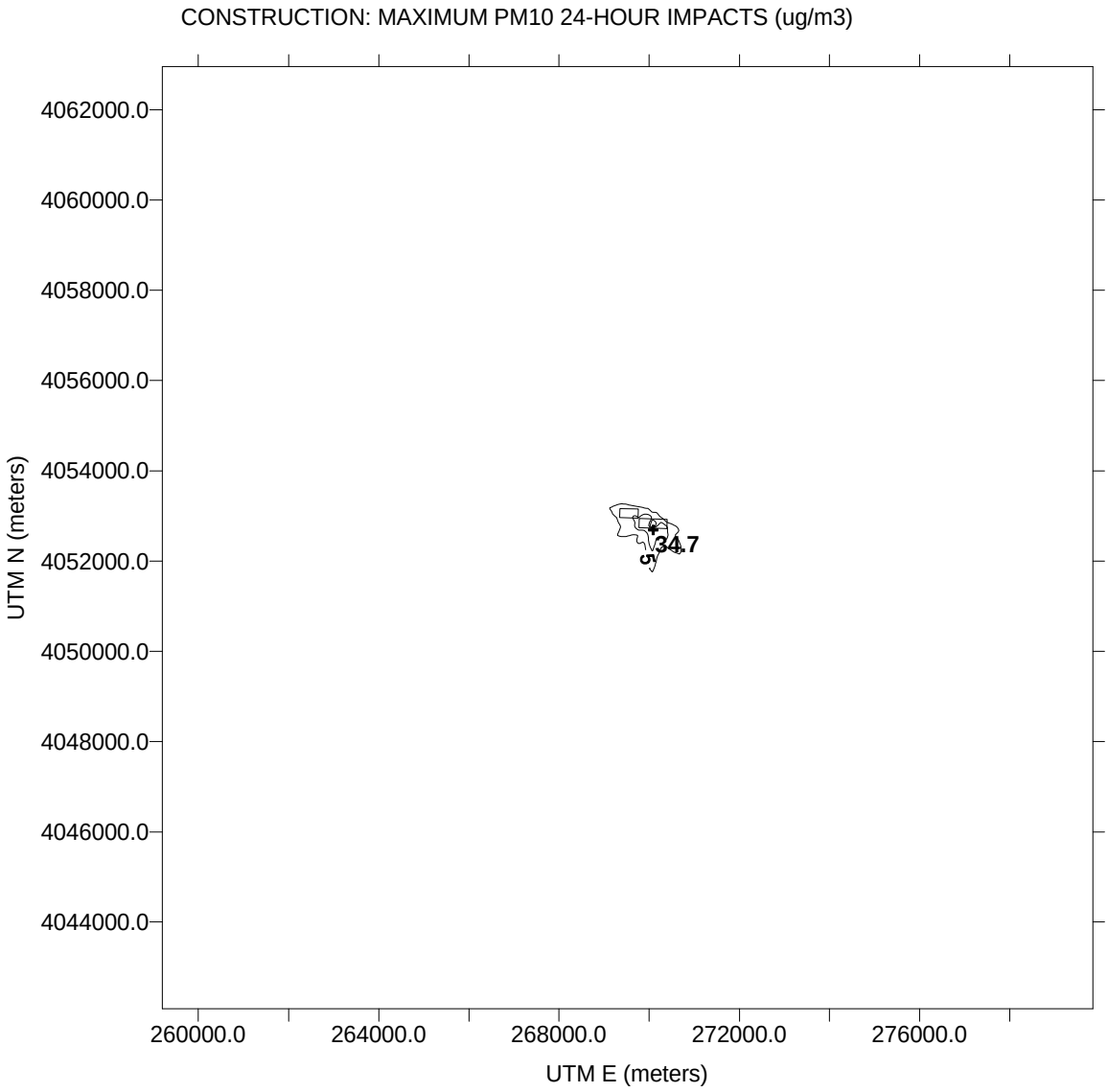

CONSTRUCTION: MAXIMUM PM10 24-HOUR IMPACTS (ug/m3)
4062000.0
4060000.0
4058000.0
4056000.0
4054000.0
4052000.0
4050000.0
4048000.0
4046000.0
4044000.0
UTM N (meters)
260000.0
264000.0
268000.0
272000.0
276000.0
UTM E (meters)
34.7

FIGURE 1

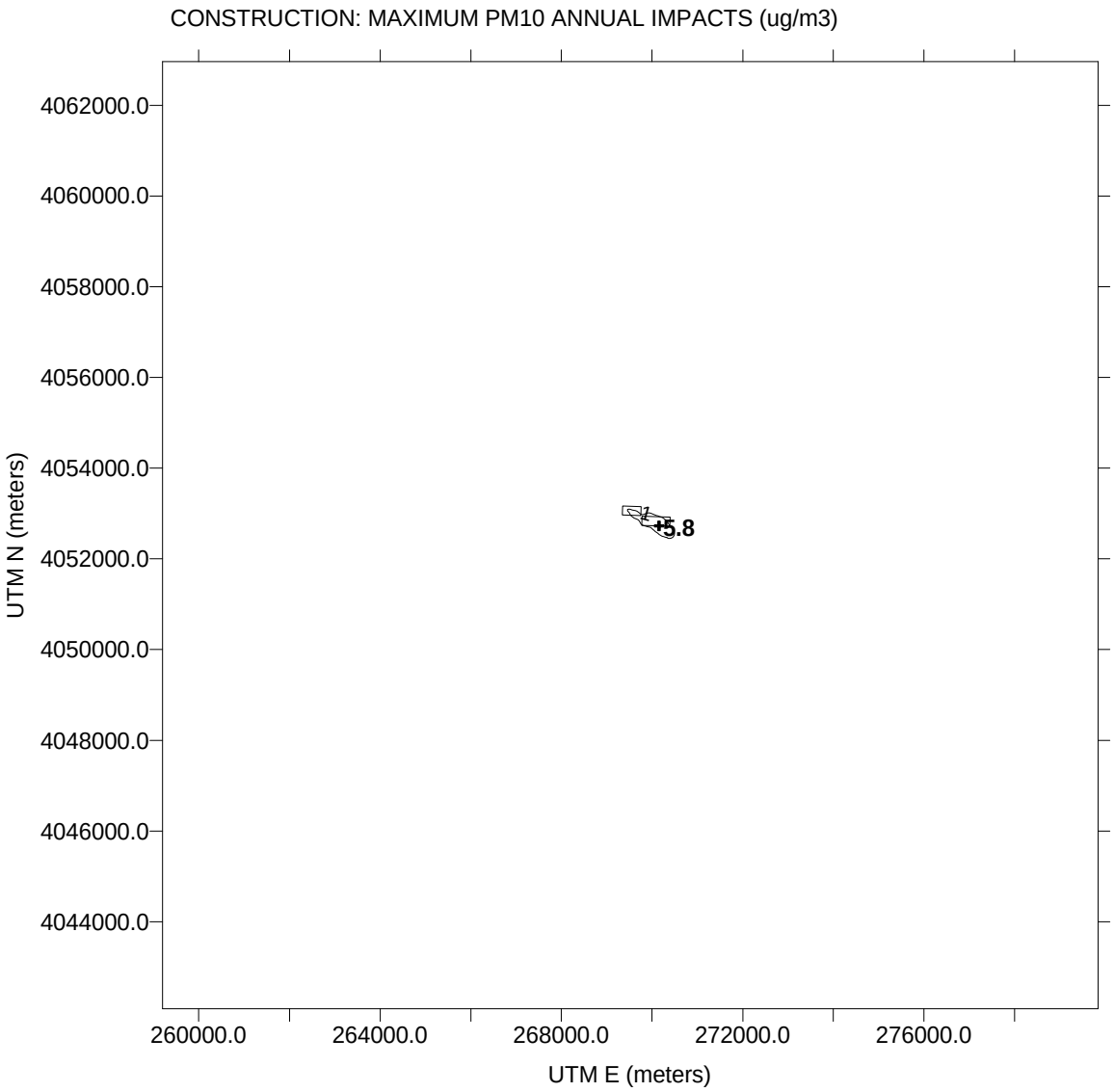

CONSTRUCTION: MAXIMUM PM10 ANNUAL IMPACTS (ug/m3)
4062000.0
4060000.0
4058000.0
4056000.0
4054000.0
4052000.0
4050000.0
4048000.0
4046000.0
4044000.0
UTM N (meters)
+5.8
260000.0
264000.0
268000.0
272000.0
276000.0
UTM E (meters)

FIGURE 2

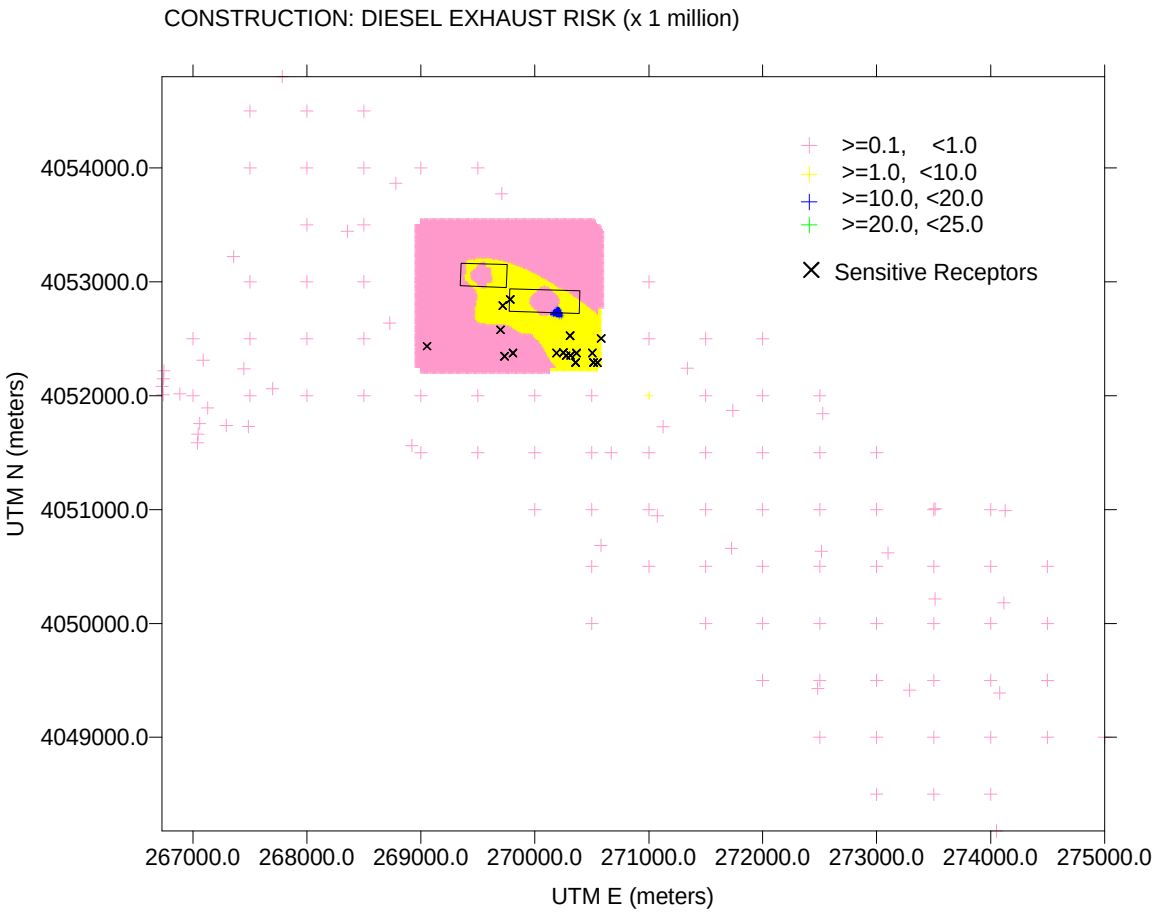

CONSTRUCTION: DIESEL EXHAUST RISK (x 1 million)
>=0.1, <1.0
>=1.0, <10.0
>=10.0, <20.0
>=20.0, <25.0
Sensitive Receptors
UTM N (meters)
4054000.0
4053000.0
4052000.0
4051000.0
4050000.0
4049000.0
267000.0
268000.0
269000.0
270000.0
271000.0
272000.0
273000.0
274000.0
275000.0
UTM E (meters)

FIGURE 3

Table CE5
Construction Site Fugitive Dust Emissions
Annualized Emissions

Equipment	Ave. # of Vehicles over the 12 Month Period (Note 1)	Daily Process Rate per Vehicle	Total Process Rate (Note 1)	Process Rate Units	PM10 Emissions Rate (lbs/unit) (Note 2)	PM2.5 Emissions Rate (lbs/unit) (Note 2)	Control Factor (5) (Note 2)	PM10 Emissions (lbs/yr)	PM2.5 Emissions (lbs/yr)
Scraper	0.167	8.00	347.36	hours	0.42	0.23	90.00	14.57	8.02
Bulldozers	0.500	8.00	1040.00	hours	0.42	0.23	90.00	43.62	24.01
Grader	0.250	24.00	1560.00	VMT	0.28	0.02	90.00	42.96	3.01
Loader Backhoe	0.500	177.00	23010.00	tons	9.20E-05	1.40E-05	0.00	2.12	0.32
Rubber Tire Loader	0.500	177.00	23010.00	tons	9.20E-05	1.40E-05	0.00	2.12	0.32
Dump Truck Loading/Unloading	0.750	300.00	58500.00	tons	9.20E-05	1.40E-05	0.00	5.38	0.82
Excavators	2.500	8.00	5200.00	hours	0.30	0.01	0.00	1570.40	57.20
Unpaved Road travel									
Scraper	0.167	1.60	69.47	VMT	0.35	0.035	90.00	2.43	0.24
Loaders (Note 3)	2.875	3.64	2720.90	VMT	0.63	0.063	90.00	171.42	17.14
Forklifts (Note 4)	5.083	4.00	5286.32	VMT	0.71	0.071	90.00	375.33	37.53
Dump Truck	0.750	4.55	887.25	VMT	0.41	0.041	90.00	36.38	3.64
Water Truck	0.750	15.00	2925.00	VMT	0.43	0.043	90.00	125.78	12.58
Concrete Truck	2.000	4.55	2366.00	VMT	0.41	0.041	90.00	97.01	9.70
PU Truck	10.833	0.95	2675.75	VMT	1.22	0.122	90.00	326.44	32.64
Delivery Truck	10.000	0.28	728.00	VMT	0.41	0.041	90.00	29.85	2.98
Gravel Road Travel									
Worker Travel	156.000	0.10	4056.00	VMT	0.73	0.073	90.00	296.09	29.61
Delivery Truck Travel	10.000	0.19	494.00	VMT	0.24	0.024	90.00	11.86	1.19
Windblown Dust (Active Const Area) (Note 5)	NA	4.356E+05	4.356E+05	sq. ft.-day	6.13E-03	2.46E-03	90.00	267.11	107.00
TOTALS								**3420.84**	**347.97**
							Tons/yr =	1.71	0.17

Notes:
1. Based on 260 days of construction during months 3 - 14 of the construction schedule.
2. Refer to the fugitive dust emissions calculations located at the end of the construction emissions tables.
3. Agr. Tractor is included with loaders.
4. Skid steer is included with forklifts.
5. The average exposed soil area over the 24-month construction schedule is estimated as 10.0 acres.

ATTACHMENTS TO

CONSTRUCTION EMISSIONS & IMPACTS APPENDIX

Attachment 1 – Excess Cancer Risk & Burden (Population Exposure Estimate Report): partial hardcopy attached.

Attachment 2 – Excess Cancer Risk (Grided Receptors): partial hardcopy attached.

(Note: The two attachments listed above, which have been revised due to the new location of the construction lay down area, relate to excess cancer risk and burden results. Due to the relatively large size of the modeling files involved, only partial hardcopies are attached. Complete versions of the construction impacts modeling is provided on the compact disk entitled "Full Air Quality Modeling Input/Output Files", which is provided under separate cover.

Attachment 1
Population Exposure Estimate Report – Cancer Risk

COUNT	REC	DESCRIPTION	UNADJUSTED CANCER RISK	POP	UNADJUSTED CANCER BURDEN	CUM. POP	UNADJUSTED CUM. BURDEN	UTME	UTMN	ADJUSTED		
										CANCER RISK	CANCER BURDEN	CUM. BURDEN
										0.02857		
1	500	BLK6802019	9.69E-05	183	1.77E-02	183	1.77E-02	270552	4052433	2.77E-06	5.07E-04	5.07E-04
2	1056	BLK7005000	5.03E-05	13	6.53E-04	196	1.84E-02	269561	4053150	1.44E-06	1.87E-05	5.25E-04
3	501	BLK6802021	4.74E-05	132	6.25E-03	328	2.46E-02	270462	4052176	1.35E-06	1.79E-04	7.04E-04
4	502	BLK6802022	2.56E-05	13	3.32E-04	341	2.50E-02	271126	4051727	7.30E-07	9.49E-06	7.14E-04
5	504	BLK6802024	2.01E-05	0	0.00E+00	341	2.50E-02	271339	4052240	5.75E-07	0.00E+00	7.14E-04
6	503	BLK6802023	1.50E-05	19	2.85E-04	360	2.53E-02	271737	4051870	4.29E-07	8.15E-06	7.22E-04
7	517	BLK6802040	1.27E-05	0	0.00E+00	360	2.53E-02	270671	4051499	3.62E-07	0.00E+00	7.22E-04
8	1063	BLK7005007	1.22E-05	21	2.57E-04	381	2.55E-02	268726	4052637	3.49E-07	7.34E-06	7.29E-04
9	514	BLK6802037	9.25E-06	15	1.39E-04	396	2.57E-02	271726	4050660	2.64E-07	3.97E-06	7.33E-04
10	515	BLK6802038	8.74E-06	7	6.12E-05	403	2.57E-02	271075	4050946	2.50E-07	1.75E-06	7.35E-04
11	1058	BLK7005002	8.73E-06	2	1.75E-05	405	2.57E-02	268779	4053864	2.49E-07	4.99E-07	7.35E-04
12	513	BLK6802036	8.57E-06	17	1.46E-04	422	2.59E-02	272514	4050634	2.45E-07	4.16E-06	7.39E-04
13	519	BLK6802042	6.79E-06	24	1.63E-04	446	2.60E-02	273098	4050619	1.94E-07	4.65E-06	7.44E-04
14	1059	BLK7005003	6.28E-06	11	6.91E-05	457	2.61E-02	268356	4053443	1.79E-07	1.97E-06	7.46E-04
15	523	BLK6802046	5.78E-06	11	6.36E-05	468	2.62E-02	273511	4050215	1.65E-07	1.82E-06	7.48E-04
16	512	BLK6802035	5.69E-06	23	1.31E-04	491	2.63E-02	272528	4051844	1.63E-07	3.74E-06	7.52E-04
17	1057	BLK7005001	5.43E-06	2	1.09E-05	493	2.63E-02	269709	4053773	1.55E-07	3.10E-07	7.52E-04
18	516	BLK6802039	5.28E-06	94	4.97E-04	587	2.68E-02	270580	4050685	1.51E-07	1.42E-05	7.66E-04
19	520	BLK6802043	5.22E-06	10	5.22E-05	597	2.69E-02	273513	4051007	1.49E-07	1.49E-06	7.68E-04
20	282	BLK7202003	4.96E-06	4	1.98E-05	601	2.69E-02	273289	4049414	1.42E-07	5.67E-07	7.68E-04
21	382	BLK6802020	4.87E-06	7	3.41E-05	608	2.69E-02	270158	4052836	1.39E-07	9.74E-07	7.69E-04
22	1061	BLK7005005	4.86E-06	6	2.91E-05	614	2.70E-02	267699	4052061	1.39E-07	8.33E-07	7.70E-04
23	1080	BLK7006000	4.80E-06	21	1.01E-04	635	2.71E-02	267447	4052237	1.37E-07	2.88E-06	7.73E-04
24	283	BLK7202004	4.76E-06	19	9.04E-05	654	2.71E-02	272483	4049430	1.36E-07	2.58E-06	7.75E-04
25	281	BLK7202002	4.45E-06	21	9.35E-05	675	2.72E-02	274079	4049389	1.27E-07	2.67E-06	7.78E-04
26	522	BLK6802045	4.10E-06	8	3.28E-05	683	2.73E-02	274115	4050181	1.17E-07	9.38E-07	7.79E-04
27	880	BLK7005017	4.00E-06	0	0.00E+00	683	2.73E-02	267486	4051728	1.14E-07	0.00E+00	7.79E-04
28	891	BLK7006001	3.95E-06	19	7.51E-05	702	2.73E-02	267089	4052312	1.13E-07	2.15E-06	7.81E-04
29	904	BLK7006015	3.90E-06	182	7.10E-04	884	2.81E-02	267292	4051739	1.11E-07	2.03E-05	8.01E-04
30	905	BLK7006016	3.60E-06	146	5.26E-04	1030	2.86E-02	267128	4051892	1.03E-07	1.50E-05	8.16E-04

Attachment 1 Population Exposure Estimate Report – Cancer Risk												
COUNT	REC	DESCRIPTION	UNADJUSTED CANCER RISK	POP	UNADJUSTED CANCER BURDEN	CUM. POP	UNADJUSTED CUM. BURDEN	UTME	UTMN	ADJUSTED		
										CANCER RISK	CANCER BURDEN	CUM. BURDEN
31	1064	BLK7005008	3.54E-06	90	3.18E-04	1120	2.89E-02	268920	4051563	1.01E-07	9.09E-06	8.26E-04
32	892	BLK7006002	3.52E-06	386	1.36E-03	1506	3.03E-02	266884	4052015	1.01E-07	3.89E-05	8.64E-04
33	907	BLK7006018	3.48E-06	51	1.78E-04	1557	3.04E-02	267044	4051663	9.94E-08	5.07E-06	8.70E-04
34	294	BLK7202015	3.47E-06	17	5.90E-05	1574	3.05E-02	274052	4048178	9.91E-08	1.68E-06	8.71E-04
35	906	BLK7006017	3.46E-06	67	2.32E-04	1641	3.07E-02	267058	4051756	9.89E-08	6.63E-06	8.78E-04
36	896	BLK7006007	3.43E-06	0	0.00E+00	1641	3.07E-02	266741	4052150	9.81E-08	0.00E+00	8.78E-04
37	895	BLK7006006	3.42E-06	0	0.00E+00	1641	3.07E-02	266743	4052218	9.77E-08	0.00E+00	8.78E-04
38	521	BLK6802044	3.40E-06	11	3.74E-05	1652	3.08E-02	274129	4050991	9.71E-08	1.07E-06	8.79E-04
39	897	BLK7006008	3.38E-06	0	0.00E+00	1652	3.08E-02	266728	4052082	9.66E-08	0.00E+00	8.79E-04
40	1060	BLK7005004	3.38E-06	102	3.45E-04	1754	3.11E-02	267356	4053220	9.66E-08	9.85E-06	8.89E-04
41	908	BLK7006019	3.38E-06	70	2.36E-04	1824	3.13E-02	267039	4051588	9.64E-08	6.75E-06	8.95E-04
42	613	BLK6902026	3.36E-06	80	2.69E-04	1904	3.16E-02	267783	4054802	9.59E-08	7.67E-06	9.03E-04
43	898	BLK7006009	3.33E-06	0	0.00E+00	1904	3.16E-02	266737	4052009	9.52E-08	0.00E+00	9.03E-04
44	284	BLK7202005	3.30E-06	36	1.19E-04	1940	3.17E-02	271690	4049434	9.43E-08	3.39E-06	9.07E-04
45	893	BLK7006003	3.27E-06	0	0.00E+00	1940	3.17E-02	266746	4052315	9.35E-08	0.00E+00	9.07E-04
46	899	BLK7006010	3.27E-06	0	0.00E+00	1940	3.17E-02	266736	4051945	9.33E-08	0.00E+00	9.07E-04
47	894	BLK7006004	3.23E-06	202	6.52E-04	2142	3.24E-02	266592	4052125	9.22E-08	1.86E-05	9.25E-04
48	295	BLK7202016	3.22E-06	23	7.42E-05	2165	3.25E-02	275242	4048547	9.21E-08	2.12E-06	9.27E-04
49	900	BLK7006011	3.20E-06	0	0.00E+00	2165	3.25E-02	266734	4051894	9.15E-08	0.00E+00	9.27E-04
50	580	BLK6804034	3.18E-06	19	6.04E-05	2184	3.25E-02	274945	4050157	9.07E-08	1.72E-06	9.29E-04
51	902	BLK7006013	3.07E-06	40	1.23E-04	2224	3.26E-02	266789	4051508	8.77E-08	3.51E-06	9.33E-04
52	903	BLK7006014	3.07E-06	119	3.65E-04	2343	3.30E-02	267035	4051505	8.77E-08	1.04E-05	9.43E-04
53	293	BLK7202014	3.06E-06	15	4.59E-05	2358	3.31E-02	273259	4048194	8.75E-08	1.31E-06	9.44E-04
54	844	BLK7006007	3.02E-06	25	7.56E-05	2383	3.31E-02	266433	4052152	8.63E-08	2.16E-06	9.46E-04
55	511	BLK6802034	3.01E-06	15	4.51E-05	2398	3.32E-02	273344	4051806	8.59E-08	1.29E-06	9.48E-04
56	845	BLK7006008	3.01E-06	39	1.17E-04	2437	3.33E-02	266430	4052052	8.59E-08	3.35E-06	9.51E-04
57	901	BLK7006012	2.98E-06	760	2.27E-03	3197	3.56E-02	266720	4051623	8.52E-08	6.47E-05	1.02E-03
58	856	BLK7006019	2.94E-06	54	1.59E-04	3251	3.57E-02	266406	4051983	8.40E-08	4.53E-06	1.02E-03
59	280	BLK7202001	2.93E-06	41	1.20E-04	3292	3.58E-02	275268	4049340	8.36E-08	3.43E-06	1.02E-03
60	518	BLK6802041	2.92E-06	61	1.78E-04	3353	3.60E-02	270113	4050163	8.33E-08	5.08E-06	1.03E-03
61	292	BLK7202013	2.88E-06	34	9.79E-05	3387	3.61E-02	272454	4048615	8.23E-08	2.80E-06	1.03E-03
62	1081	BLK7006005	2.85E-06	0	0.00E+00	3387	3.61E-02	266555	4052373	8.13E-08	0.00E+00	1.03E-03

Attachment 2 Excess Cancer Risk (Grided Receptors)						
Receptor	**Type**	**Unadjusted Cancer Risk**	**UTME**	**UTMN**	**Adjusted Cancer Risk**	**Adjusted Cancer Risk**
					0.028571	**x 1E6**
			Within project fenceline:			
11660	GRID	8.70E-04	270150	4052760	2.49E-05	24.86
11504	GRID	8.66E-04	270150	4052770	2.47E-05	24.74
11505	GRID	8.64E-04	270160	4052770	2.47E-05	24.69
11661	GRID	8.47E-04	270160	4052760	2.42E-05	24.20
11349	GRID	8.38E-04	270160	4052780	2.39E-05	23.94
11659	GRID	8.36E-04	270140	4052760	2.39E-05	23.89
11816	GRID	8.25E-04	270150	4052750	2.36E-05	23.57
11506	GRID	8.18E-04	270170	4052770	2.34E-05	23.37
11815	GRID	8.13E-04	270140	4052750	2.32E-05	23.23
11817	GRID	8.06E-04	270160	4052750	2.30E-05	23.03
11662	GRID	8.04E-04	270170	4052760	2.30E-05	22.97
11350	GRID	8.04E-04	270170	4052780	2.30E-05	22.97
11818	GRID	7.73E-04	270170	4052750	2.21E-05	22.09
11972	GRID	7.59E-04	270150	4052740	2.17E-05	21.69
11348	GRID	7.59E-04	270150	4052780	2.17E-05	21.69
11194	GRID	7.55E-04	270170	4052790	2.16E-05	21.57
11507	GRID	7.55E-04	270180	4052770	2.16E-05	21.57
11971	GRID	7.52E-04	270140	4052740	2.15E-05	21.49
11663	GRID	7.51E-04	270180	4052760	2.15E-05	21.46
11973	GRID	7.49E-04	270160	4052740	2.14E-05	21.40
11814	GRID	7.47E-04	270130	4052750	2.13E-05	21.34
11351	GRID	7.39E-04	270180	4052780	2.11E-05	21.11
11819	GRID	7.30E-04	270180	4052750	2.09E-05	20.86
11974	GRID	7.27E-04	270170	4052740	2.08E-05	20.77
11193	GRID	7.26E-04	270160	4052790	2.07E-05	20.74
11970	GRID	7.19E-04	270130	4052740	2.05E-05	20.54
11195	GRID	7.04E-04	270180	4052790	2.01E-05	20.11
11503	GRID	7.01E-04	270140	4052770	2.00E-05	20.03
11975	GRID	6.96E-04	270180	4052740	1.99E-05	19.89
11664	GRID	6.91E-04	270190	4052760	1.97E-05	19.74
11508	GRID	6.88E-04	270190	4052770	1.97E-05	19.66
12128	GRID	6.86E-04	270150	4052730	1.96E-05	19.60
12129	GRID	6.85E-04	270160	4052730	1.96E-05	19.57
11820	GRID	6.81E-04	270190	4052750	1.95E-05	19.46
First Receptor on Fenceline or Outside of Property						
19674	BOUNDARY	6.74E-04	270164.26	4052728.77	1.93E-05	19.26
12130	GRID	6.74E-04	270170	4052730	1.93E-05	19.26
12127	GRID	6.73E-04	270140	4052730	1.92E-05	19.23
19675	BOUNDARY	6.68E-04	270139.27	4052729.52	1.91E-05	19.09
11352	GRID	6.67E-04	270190	4052780	1.91E-05	19.06
11658	GRID	6.65E-04	270130	4052760	1.90E-05	19.00
11976	GRID	6.59E-04	270190	4052740	1.88E-05	18.83
12131	GRID	6.55E-04	270180	4052730	1.87E-05	18.71
11038	GRID	6.54E-04	270170	4052800	1.87E-05	18.69
12126	GRID	6.43E-04	270130	4052730	1.84E-05	18.37

Attachment 2 Excess Cancer Risk (Grided Receptors)						
Receptor	**Type**	**Unadjusted Cancer Risk**	**UTME**	**UTMN**	**Adjusted Cancer Risk**	**Adjusted Cancer Risk**
					0.028571	**x 1E6**
11039	GRID	6.39E-04	270180	4052800	1.83E-05	18.26
11969	GRID	6.37E-04	270120	4052740	1.82E-05	18.20
11196	GRID	6.32E-04	270190	4052790	1.81E-05	18.06
11665	GRID	6.30E-04	270200	4052760	1.80E-05	18.00
11821	GRID	6.30E-04	270200	4052750	1.80E-05	18.00
12132	GRID	6.29E-04	270190	4052730	1.80E-05	17.97
19673	BOUNDARY	6.24E-04	270189.25	4052728.01	1.78E-05	17.83
12285	GRID	6.19E-04	270160	4052720	1.77E-05	17.69
11509	GRID	6.18E-04	270200	4052770	1.77E-05	17.66
12286	GRID	6.18E-04	270170	4052720	1.77E-05	17.66
11977	GRID	6.18E-04	270200	4052740	1.77E-05	17.66
11813	GRID	6.13E-04	270120	4052750	1.75E-05	17.51
12284	GRID	6.12E-04	270150	4052720	1.75E-05	17.49
12287	GRID	6.08E-04	270180	4052720	1.74E-05	17.37
12133	GRID	5.98E-04	270200	4052730	1.71E-05	17.09
12283	GRID	5.95E-04	270140	4052720	1.70E-05	17.00
11353	GRID	5.95E-04	270200	4052780	1.70E-05	17.00
12288	GRID	5.92E-04	270190	4052720	1.69E-05	16.91
12125	GRID	5.92E-04	270120	4052730	1.69E-05	16.91
11040	GRID	5.80E-04	270190	4052800	1.66E-05	16.57
11822	GRID	5.78E-04	270210	4052750	1.65E-05	16.51
11978	GRID	5.76E-04	270210	4052740	1.65E-05	16.46
12289	GRID	5.71E-04	270200	4052720	1.63E-05	16.31
11666	GRID	5.71E-04	270210	4052760	1.63E-05	16.31
12282	GRID	5.67E-04	270130	4052720	1.62E-05	16.20
12134	GRID	5.64E-04	270210	4052730	1.61E-05	16.11
12442	GRID	5.62E-04	270170	4052710	1.61E-05	16.06
12443	GRID	5.60E-04	270180	4052710	1.60E-05	16.00
19676	BOUNDARY	5.59E-04	270114.29	4052730.28	1.60E-05	15.97
11197	GRID	5.59E-04	270200	4052790	1.60E-05	15.97
12441	GRID	5.56E-04	270160	4052710	1.59E-05	15.89
11510	GRID	5.54E-04	270210	4052770	1.58E-05	15.83
10883	GRID	5.53E-04	270180	4052810	1.58E-05	15.80
12444	GRID	5.52E-04	270190	4052710	1.58E-05	15.77
19672	BOUNDARY	5.45E-04	270214.24	4052727.25	1.56E-05	15.57
12290	GRID	5.45E-04	270210	4052720	1.56E-05	15.57
12440	GRID	5.43E-04	270150	4052710	1.55E-05	15.51
12445	GRID	5.39E-04	270200	4052710	1.54E-05	15.40
11979	GRID	5.32E-04	270220	4052740	1.52E-05	15.20
11968	GRID	5.30E-04	270110	4052740	1.51E-05	15.14
12281	GRID	5.29E-04	270120	4052720	1.51E-05	15.11
11823	GRID	5.29E-04	270220	4052750	1.51E-05	15.11
12135	GRID	5.28E-04	270220	4052730	1.51E-05	15.09
12124	GRID	5.27E-04	270110	4052730	1.51E-05	15.06
11354	GRID	5.26E-04	270210	4052780	1.50E-05	15.03
12439	GRID	5.23E-04	270140	4052710	1.49E-05	14.94
12446	GRID	5.21E-04	270210	4052710	1.49E-05	14.89

Attachment 2 Excess Cancer Risk (Grided Receptors)						
Receptor	**Type**	**Unadjusted Cancer Risk**	**UTME**	**UTMN**	**Adjusted Cancer Risk**	**Adjusted Cancer Risk**
					0.028571	**x 1E6**
12291	GRID	5.17E-04	270220	4052720	1.48E-05	14.77
11667	GRID	5.16E-04	270220	4052760	1.47E-05	14.74
10884	GRID	5.13E-04	270190	4052810	1.47E-05	14.66
11041	GRID	5.13E-04	270200	4052800	1.47E-05	14.66
12599	GRID	5.12E-04	270180	4052700	1.46E-05	14.63
12600	GRID	5.10E-04	270190	4052700	1.46E-05	14.57
12598	GRID	5.08E-04	270170	4052700	1.45E-05	14.51
12601	GRID	5.04E-04	270200	4052700	1.44E-05	14.40
12447	GRID	4.99E-04	270220	4052710	1.43E-05	14.26
12597	GRID	4.97E-04	270160	4052700	1.42E-05	14.20
12438	GRID	4.95E-04	270130	4052710	1.41E-05	14.14
11511	GRID	4.95E-04	270220	4052770	1.41E-05	14.14
12602	GRID	4.92E-04	270210	4052700	1.41E-05	14.06
12136	GRID	4.92E-04	270230	4052730	1.41E-05	14.06
11198	GRID	4.90E-04	270210	4052790	1.40E-05	14.00
11980	GRID	4.90E-04	270230	4052740	1.40E-05	14.00
10882	GRID	4.87E-04	270170	4052810	1.39E-05	13.91
12292	GRID	4.86E-04	270230	4052720	1.39E-05	13.89
12596	GRID	4.81E-04	270150	4052700	1.37E-05	13.74
11824	GRID	4.81E-04	270230	4052750	1.37E-05	13.74
12280	GRID	4.77E-04	270110	4052720	1.36E-05	13.63
12603	GRID	4.77E-04	270220	4052700	1.36E-05	13.63
12448	GRID	4.75E-04	270230	4052710	1.36E-05	13.57
12756	GRID	4.69E-04	270190	4052690	1.34E-05	13.40
12757	GRID	4.67E-04	270200	4052690	1.33E-05	13.34
12755	GRID	4.65E-04	270180	4052690	1.33E-05	13.29
11668	GRID	4.65E-04	270230	4052760	1.33E-05	13.29
11355	GRID	4.65E-04	270220	4052780	1.33E-05	13.29
12758	GRID	4.62E-04	270210	4052690	1.32E-05	13.20
12437	GRID	4.61E-04	270120	4052710	1.32E-05	13.17
19671	BOUNDARY	4.59E-04	270239.23	4052726.5	1.31E-05	13.11
12604	GRID	4.59E-04	270230	4052700	1.31E-05	13.11
12595	GRID	4.59E-04	270140	4052700	1.31E-05	13.11
10885	GRID	4.57E-04	270200	4052810	1.31E-05	13.06
12754	GRID	4.57E-04	270170	4052690	1.31E-05	13.06
12137	GRID	4.55E-04	270240	4052730	1.30E-05	13.00
12293	GRID	4.55E-04	270240	4052720	1.30E-05	13.00
12759	GRID	4.52E-04	270220	4052690	1.29E-05	12.91
11981	GRID	4.49E-04	270240	4052740	1.28E-05	12.83
12449	GRID	4.49E-04	270240	4052710	1.28E-05	12.83
11042	GRID	4.46E-04	270210	4052800	1.27E-05	12.74
11037	GRID	4.46E-04	270160	4052800	1.27E-05	12.74
12123	GRID	4.45E-04	270100	4052730	1.27E-05	12.71
12753	GRID	4.44E-04	270160	4052690	1.27E-05	12.69
11512	GRID	4.41E-04	270230	4052770	1.26E-05	12.60
12760	GRID	4.39E-04	270230	4052690	1.25E-05	12.54
10728	GRID	4.38E-04	270190	4052820	1.25E-05	12.51

Attachment 2 Excess Cancer Risk (Grided Receptors)						
Receptor	**Type**	**Unadjusted Cancer Risk**	**UTME**	**UTMN**	**Adjusted Cancer Risk**	**Adjusted Cancer Risk**
					0.028571	**x 1E6**
12605	GRID	4.38E-04	270240	4052700	1.25E-05	12.51
11825	GRID	4.37E-04	270240	4052750	1.25E-05	12.49
10727	GRID	4.35E-04	270180	4052820	1.24E-05	12.43
12594	GRID	4.32E-04	270130	4052700	1.23E-05	12.34
12913	GRID	4.31E-04	270200	4052680	1.23E-05	12.31
12914	GRID	4.30E-04	270210	4052680	1.23E-05	12.29
11199	GRID	4.29E-04	270220	4052790	1.23E-05	12.26
12912	GRID	4.28E-04	270190	4052680	1.22E-05	12.23
12752	GRID	4.26E-04	270150	4052690	1.22E-05	12.17
12915	GRID	4.25E-04	270220	4052680	1.21E-05	12.14
12294	GRID	4.24E-04	270250	4052720	1.21E-05	12.11
11812	GRID	4.24E-04	270110	4052750	1.21E-05	12.11
12761	GRID	4.23E-04	270240	4052690	1.21E-05	12.09
12911	GRID	4.22E-04	270180	4052680	1.21E-05	12.06
12450	GRID	4.22E-04	270250	4052710	1.21E-05	12.06
12279	GRID	4.21E-04	270100	4052720	1.20E-05	12.03
12138	GRID	4.20E-04	270250	4052730	1.20E-05	12.00
12436	GRID	4.20E-04	270110	4052710	1.20E-05	12.00
11669	GRID	4.18E-04	270240	4052760	1.19E-05	11.94
12916	GRID	4.17E-04	270230	4052680	1.19E-05	11.91
11967	GRID	4.16E-04	270100	4052740	1.19E-05	11.89
12606	GRID	4.16E-04	270250	4052700	1.19E-05	11.89
11982	GRID	4.11E-04	270250	4052740	1.17E-05	11.74
11356	GRID	4.11E-04	270230	4052780	1.17E-05	11.74
12910	GRID	4.11E-04	270170	4052680	1.17E-05	11.74
12762	GRID	4.06E-04	270250	4052690	1.16E-05	11.60
12917	GRID	4.05E-04	270240	4052680	1.16E-05	11.57
12751	GRID	4.04E-04	270140	4052690	1.15E-05	11.54
12593	GRID	4.01E-04	270120	4052700	1.15E-05	11.46
13070	GRID	3.98E-04	270210	4052670	1.14E-05	11.37
13071	GRID	3.97E-04	270220	4052670	1.13E-05	11.34
10886	GRID	3.97E-04	270210	4052810	1.13E-05	11.34
12451	GRID	3.96E-04	270260	4052710	1.13E-05	11.31
11826	GRID	3.96E-04	270250	4052750	1.13E-05	11.31
12909	GRID	3.96E-04	270160	4052680	1.13E-05	11.31
13069	GRID	3.96E-04	270200	4052670	1.13E-05	11.31
10729	GRID	3.95E-04	270200	4052820	1.13E-05	11.29
12295	GRID	3.94E-04	270260	4052720	1.13E-05	11.26
13072	GRID	3.93E-04	270230	4052670	1.12E-05	11.23
11513	GRID	3.93E-04	270240	4052770	1.12E-05	11.23
12607	GRID	3.93E-04	270260	4052700	1.12E-05	11.23
12918	GRID	3.92E-04	270250	4052680	1.12E-05	11.20
10240	GRID	3.91E-04	269990	4052850	1.12E-05	11.17
13068	GRID	3.90E-04	270190	4052670	1.11E-05	11.14
11043	GRID	3.88E-04	270220	4052800	1.11E-05	11.09
12139	GRID	3.87E-04	270260	4052730	1.11E-05	11.06
10084	GRID	3.87E-04	269990	4052860	1.11E-05	11.06

Attachment 2 Excess Cancer Risk (Grided Receptors)						
Receptor	**Type**	**Unadjusted Cancer Risk**	**UTME**	**UTMN**	**Adjusted Cancer Risk**	**Adjusted Cancer Risk**
					0.028571	**x 1E6**
12763	GRID	3.86E-04	270260	4052690	1.10E-05	11.03
13073	GRID	3.85E-04	270240	4052670	1.10E-05	11.00
10396	GRID	3.82E-04	269990	4052840	1.09E-05	10.91
13067	GRID	3.81E-04	270180	4052670	1.09E-05	10.89
9928	GRID	3.80E-04	269990	4052870	1.09E-05	10.86
12750	GRID	3.79E-04	270130	4052690	1.08E-05	10.83
10239	GRID	3.78E-04	269980	4052850	1.08E-05	10.80
12435	GRID	3.78E-04	270100	4052710	1.08E-05	10.80
19670	BOUNDARY	3.77E-04	270264.22	4052725.74	1.08E-05	10.77
12908	GRID	3.77E-04	270150	4052680	1.08E-05	10.77
11200	GRID	3.76E-04	270230	4052790	1.07E-05	10.74
12919	GRID	3.76E-04	270260	4052680	1.07E-05	10.74
13074	GRID	3.76E-04	270250	4052670	1.07E-05	10.74
9929	GRID	3.76E-04	270000	4052870	1.07E-05	10.74
11983	GRID	3.75E-04	270260	4052740	1.07E-05	10.71
10395	GRID	3.75E-04	269980	4052840	1.07E-05	10.71
11670	GRID	3.75E-04	270250	4052760	1.07E-05	10.71
12122	GRID	3.73E-04	270090	4052730	1.07E-05	10.66
10083	GRID	3.73E-04	269980	4052860	1.07E-05	10.66
12608	GRID	3.70E-04	270270	4052700	1.06E-05	10.57
9773	GRID	3.70E-04	270000	4052880	1.06E-05	10.57
13227	GRID	3.69E-04	270220	4052660	1.05E-05	10.54
13066	GRID	3.69E-04	270170	4052670	1.05E-05	10.54
12452	GRID	3.69E-04	270270	4052710	1.05E-05	10.54
19677	BOUNDARY	3.68E-04	270089.3	4052731.04	1.05E-05	10.51
13228	GRID	3.68E-04	270230	4052660	1.05E-05	10.51
10551	GRID	3.68E-04	269980	4052830	1.05E-05	10.51
9772	GRID	3.67E-04	269990	4052880	1.05E-05	10.49
13226	GRID	3.67E-04	270210	4052660	1.05E-05	10.49
12764	GRID	3.66E-04	270270	4052690	1.05E-05	10.46
12592	GRID	3.65E-04	270110	4052700	1.04E-05	10.43
12278	GRID	3.65E-04	270090	4052720	1.04E-05	10.43
13075	GRID	3.64E-04	270260	4052670	1.04E-05	10.40
10552	GRID	3.64E-04	269990	4052830	1.04E-05	10.40
13229	GRID	3.64E-04	270240	4052660	1.04E-05	10.40
12296	GRID	3.64E-04	270270	4052720	1.04E-05	10.40
11357	GRID	3.64E-04	270240	4052780	1.04E-05	10.40
10085	GRID	3.63E-04	270000	4052860	1.04E-05	10.37
9927	GRID	3.63E-04	269980	4052870	1.04E-05	10.37
13225	GRID	3.63E-04	270200	4052660	1.04E-05	10.37
12920	GRID	3.60E-04	270270	4052680	1.03E-05	10.29
13230	GRID	3.58E-04	270250	4052660	1.02E-05	10.23
11827	GRID	3.58E-04	270260	4052750	1.02E-05	10.23
12907	GRID	3.57E-04	270140	4052680	1.02E-05	10.20
10572	GRID	3.57E-04	270190	4052830	1.02E-05	10.20
9617	GRID	3.57E-04	270000	4052890	1.02E-05	10.20
13224	GRID	3.55E-04	270190	4052660	1.01E-05	10.14

Attachment 2 Excess Cancer Risk (Grided Receptors)						
Receptor	**Type**	**Unadjusted Cancer Risk**	**UTME**	**UTMN**	**Adjusted Cancer Risk**	**Adjusted Cancer Risk**
					0.028571	**x 1E6**
12140	GRID	3.55E-04	270270	4052730	1.01E-05	10.14
13065	GRID	3.54E-04	270160	4052670	1.01E-05	10.11
10708	GRID	3.53E-04	269990	4052820	1.01E-05	10.09
10707	GRID	3.53E-04	269980	4052820	1.01E-05	10.09
9618	GRID	3.52E-04	270010	4052890	1.01E-05	10.06
11514	GRID	3.51E-04	270250	4052770	1.00E-05	10.03
12749	GRID	3.51E-04	270120	4052690	1.00E-05	10.03
10238	GRID	3.50E-04	269970	4052850	1.00E-05	10.00
10394	GRID	3.50E-04	269970	4052840	1.00E-05	10.00
13076	GRID	3.50E-04	270270	4052670	1.00E-05	10.00
9774	GRID	3.49E-04	270010	4052880	9.97E-06	9.97
13231	GRID	3.49E-04	270260	4052660	9.97E-06	9.97
9771	GRID	3.48E-04	269980	4052880	9.94E-06	9.94
9616	GRID	3.48E-04	269990	4052890	9.94E-06	9.94
12609	GRID	3.46E-04	270280	4052700	9.89E-06	9.89
12765	GRID	3.46E-04	270280	4052690	9.89E-06	9.89
10730	GRID	3.46E-04	270210	4052820	9.89E-06	9.89
10550	GRID	3.46E-04	269970	4052830	9.89E-06	9.89
13223	GRID	3.44E-04	270180	4052660	9.83E-06	9.83
10082	GRID	3.44E-04	269970	4052860	9.83E-06	9.83

Appendix 3.3-1

Resume for Mr. Mike Elliot

MICHAEL THOMAS ELLIOTT

ARCHAEOLOGIST

320 B California Street Santa Cruz CA, 95060
(831) 419-3403 legacymte@yahoo.com

EDUCATION

M.A. Anthropology, California State University East Bay, Hayward, 2004-2006
B.A. Anthropology, B.A. History, University of California at Santa Cruz, 2000
Archaeological Field School, California State University, Sacramento, 1999

SUMMARY OF EXPERIENCE:

Mr. Elliott has six years of experience in cultural resource management and has participated in numerous projects throughout twenty-eight California counties (59+ sites excavated/200+ surveyed). Professional responsibilities have included: archaeological survey and site documentation, excavation of prehistoric and historic sites, monitoring subsurface construction activities, project planning and supervision, report writing and technical illustration. Mr. Elliott's current efforts involve organizing and teaching graduate-undergraduate archaeological programs at CSUEB, Hayward, California.

EMPLOYMENT HISTORY

2005 - 2006 Archaeologist, Pacific Legacy Inc, Santa Cruz, CA
2004 Archaeologist, Archeo-Tec, Oakland, CA
2000 - 2003 Archaeologist, Pacific Legacy Inc, Santa Cruz, CA

FIELDWORK

Shasta, Siskiyou, Colusa, and Modoc Counties, California. Pacific Legacy, Inc. Project Assistant for transmission line survey and CATX resource evaluation for Western Area Power Administration Vegetation Management Program (June-September 2005)

University of California, Santa Cruz. Pacific Legacy, Inc. Project Member for the UCSC Long Range Development Plan (May-July 2005)

Valencia Gardens, San Francisco, California. Archeo-Tec. Crew Member and Leader for data recovery at a 19th century Chinese residence engaged in urban agricultural production in the Mission District of San Francisco (August-September 2004)

Elk Hills, Western Kern County, California. Pacific Legacy, Inc. Crew Member and Leader for data recovery at six prehistoric sites in the Elk Hills Naval Petroleum Reserve, Department of Energy (DOE) (January-October 2003)

Los Banos, Western Merced County, California. Pacific Legacy, Inc. Project Leader for the Monument 3-D Seismic Project. Cultural resource inventory of approximately 150 square miles of private, state and federal land in western Merced County (February-August 2002)

Jose Basin, Shaver Lake, Pine Flat Reservoir, California. Pacific Legacy, Inc. Crew Leader and Project Field Supervisor of cultural resources inventory for Southern California Edison (SCE) Hydro-Separation Transmission Line Network Corridor Project, Sierra National Forest, Madera and Fresno Counties, CA (January-March 2002)

Shaver Lake, Big Creek, California. Pacific Legacy, Inc. Crew Member and Leader for cultural resources inventory for the FERC/Southern California Edison Big Creek Hydroelectric Alternative Licensing Program (SCE/BC-ALP), Sierra National Forest, Fresno County, CA (September-January 2001-2002)

Stanford University, California. Pacific Legacy, Inc. Crew Member for data recovery excavation at CA-SCL-623/H. Santa Clara County, CA (November-December 2001)

Lake Thomas A. Edison. Pacific Legacy, Inc. Crew Member for cultural resources inventory (SCE/BC-ALP), Sierra National Forest, Fresno County, CA (September 2001)
Susanville, California. Pacific Legacy, Inc. Crew Member for CALTRANS test excavations and data recovery at three prehistoric sites along CSR 44, Lassen County, CA (September 2001)
Rio Vista, California. Pacific Legacy, Inc. Crew Member for survey of properties scheduled for subsurface seismic investigation by CGI, Inc. Sacramento and Solano County (August 2001)
Clear Lake, California. Pacific Legacy, Inc. Crew Member for CALTRANS data recovery at CA-LAK-1961, south of Lakeport, Lake County, CA (July 2001)
Stanford University, California. Pacific Legacy, Inc. Crew Member for data recovery excavation and construction monitoring at CA-SCL-287, Sand Hill Road Corridor, Santa Clara County, CA (May-June 2001)
Clear Lake, California. Pacific Legacy, Inc. Crew Member for test excavations and data recovery at thirteen prehistoric sites along Highway 20 from Clearlake Oaks to Nice, Lake County, CA (February-April 2001)
Moss Landing, California. Pacific Legacy, Inc. Crew Member for data recovery excavations at CA-MNT-229. Monterey County, CA (January 2001)
Springville, California. Pacific Legacy, Inc. Crew Member for cultural resources survey of SCE transmission line network corridors (SCE Pole Replacement Program), Tulare County, CA (December 2000)
Huntington Lake, California. Pacific Legacy, Inc. Crew Member for cultural resources inventory for FERC/Southern California Edison Big Creek Hydroelectric Alternative Licensing Program (SCE/BC-ALP). Sierra National Forest, Fresno County, CA (November 2000)
Portal Forbay and Florence Lake, California. Pacific Legacy, Inc. Crew Member for cultural resources inventory for the FERC/Southern California Edison Big Creek Hydroelectric Alternative Licensing Program (SCE/BC-ALP). Sierra National Forest, Fresno County, CA (October 2000)
Watsonville, California. Pacific Legacy, Inc. Crew Member for data recovery excavations and construction monitoring at CA-SCR-60/130, Santa Cruz County, CA (September-October 2000).
Gonzales, California. Pacific Legacy, Inc. Crew Member for cultural resources survey of the Handley Ranch, Monterey County, CA (September 2000)
Clear Lake, California. Pacific Legacy, Inc. Crew Member for data recovery at CA-LAK-266, north of Lakeport. Lake County, CA (August 2000)
Stanford University, California. Pacific Legacy, Inc. Crew Member for data recovery excavation at CA-SCL-287, Sand Hill Road Corridor. Santa Clara County, CA (June-July 2000)

TECHNICAL SPECIALIZATION

Lithic Analysis and Stone Tool Research. Mr. Elliott has cultivated a professional understanding and interest regarding current methodological and theoretical advancements in the field of lithic studies, including; debitage analysis and the organization of stone tool and core technologies.

PROFESSIONAL MEMBERSHIPS

Society for California Archaeology (SCA) 1998-Present
Society for American Archaeology (SAA) 1999-Present

REPORTS

Elliott, M. T. and T. L. Jackson. *Cultural Resources Inventory for the Monument 3-D Seismic Project, Merced County, California* (November 2002). Report on file with Central California Information Center, Turlock, CA.

PAPERS PRESENTED

Elliott, M. T. *Archaeological Survey in Surviving Riparian Habitats*, *Middle San Joaquin River Near Los Banos*, *California*. (October, 2002) Paper presented at the Society for California Archaeology Northern California Data Sharing Meeting, Cabrillo College, Aptos, CA.

REFERENCES

Christopher Morgan, PhC
Archaeologist, Project Leader, Pacific Legacy, Inc. Sierra Division
(530) 677-9713 x19 3081 Alhambra Drive, Suite 208, Cameron Park, CA 95682
morgan@pacificlegacy.com

Robert Jackson, MA
Archaeologist, Principle Investigator, Pacific Legacy, Inc. Sierra Division
(530) 677-9713 x11 3081 Alhambra Drive, Suite 208, Cameron Park, CA 95682
jacksonrob@pacificlegacy.com

John Holson, MA
Project Manager, Pacific Legacy, Inc. Bay Area Division
(510) 524-3991 1027 San Pablo Avenue, Albany, CA 94706
holson@pacificlegacy.com

Tom Jackson, PhD
Senior Archaeologist, Principle Investigator, Pacific Legacy, Inc. Central Coast
(831) 423-0588x15 1525 Seabright Avenue, Santa Cruz, CA 95062
jacksontom@pacificlegacy.com

Michael Bever, PhD
Archaeologist, Pacific Legacy, Inc. Sierra Division
Assistant Professor, University of Texas, Austin.
mbever@mail.utexas.edu

William Shapiro, MA
Archaeologist, Pacific Legacy, Inc. Sierra Division
(530) 677-9713 x15 3081 Alhambra Drive, Suite 208, Cameron Park, CA 95682
shapirowill@pacificlegacy.com

Laura Jones, PhD
Campus Archaeologist, Historic Preservation Officer, Stanford University
ljones@stanford.edu

Appendix 3.3-2

Photos of Supplemental Survey Area

Figure 1. Overview South of the 60 acre staging area with Bethel Avenue at left.

Figure 2. Overview North of the two acre natural gas pipeline staging area from the intersection of Road 36 (at left) and Avenue 368.

Figure 3. **Overview Southwest of the Walnut Ditch (PLI-9) within the proposed transmission line route with the recharge basin in background.**

Figure 4. **View South of the Centerville and Kingsburg Canal at the proposed transmission line crossing.**

Figure 5. **View South of the Fowler Switch Canal at the proposed transmission line.**

Figure 6. **View South of Accident Marker / Memorial at the intersection of Del Rey Avenue and Parlier Avenue within the transmission line route.**

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION for the *KINGS RIVER CONSERVATION DISTRICT COMMUNITY POWER PROJECT*	Docket No. 07-AFC-7 PROOF OF SERVICE (Revised 10/24/2008)

INSTRUCTIONS: All parties shall either (1) send an original signed document plus 12 copies or (2) mail one original signed copy AND e-mail the document to the address for the Docket as shown below, AND (3) all parties shall also send a printed or electronic copy of the document, which includes a proof of service declaration to each of the individuals on the proof of service list shown below:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 07-AFC-7
1516 Ninth Street, MS-15
Sacramento, CA 95814-5512
docket@energy.state.ca.us

APPLICANT

David Orth
Kings River Conservation District
4886 East Jensen Ave
Fresno, CA 93725-1899
dorth@krcd.org

APPLICANT CONSULTANT

Amy Cuellar, Project Manager
Navigant Consulting
3100 Zinfandel Dr
Rancho Cordova, CA 95670
acuellar@navigantconsulting.com

COUNSEL FOR APPLICANT

Scott Galati
Galati/Blek, LLP
Plaza Towers
555 Capitol Mall, Suite 600
Sacramento, CA 95814
sgalati@gb-llp.com

INTERESTED AGENCIES

California ISO
P.O. Box 639014
Folsom, CA 95763-9014
e-recipient@caiso.com

INTERVENORS

ENERGY COMMISSION

Jackalyne Pfannenstiel
Chairman and Presiding Member
jpfannen@energy.state.ca.us

Karen Douglas
Commissioner and Associate Member
kldougla@energy.state.ca.us

Ken Celli
Hearing Officer
kcelli@energy.state.ca.us

Shaelyn Strattan
Project Manager
sstratten@energy.state.ca.us

Kerry Willis
Staff Counsel
kwillis@energy.state.ca.us

* **Elena Miller**
Public Adviser
publicadviser@energy.state.ca.us

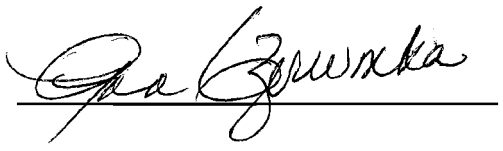
DECLARATION OF SERVICE

I, Ann Czerwonka, declare that on October 30, 2008, I deposited copies of the attached Supplement B, Addendum to BA, in the United States mail at Sacramento CA with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

OR

Transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

I declare under penalty of perjury that the foregoing is true and correct.



*indicates change