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296 Burgan Avenue, Clovis, CA 93611
Office (559) 298-2334; Mobile (559) 970-2875
Fax (559) 322-0769; HalsteadEnv@aol.com

DOCKET
07-AFC-7
DATE OCT 0 3 2008
RECD. OCT 3 0 2008

October 3, 2008

Ms. Susan Jones
Chief, San Joaquin Valley Branch
U. S. Fish and Wildlife Service
Sacramento Fish and Wildlife Office, Endangered Species Division
2800 Cottage Way, Rm W-2605
Sacramento, CA 95814

RE: Addendum to Biological Assessment Report (11/2007)
Kings River Conservation District's Community Power Plant Project
(Near Parlier, Fresno and Tulare Counties, CA)

Dear Sue:

Enclosed is an Addendum to the Biological Assessment Report (BA) that was submitted to the U. S. Fish and Wildlife Service in November 2007 for the Kings River Conservation District's Community Power Plant Project. In February 2008, Mr. Jeff Jorgenson of your staff along with California Energy Commission, California Department of Fish and Game, and H&A staff toured the projeet site and linear facilities to view and better understand the project. The BA proposed preventive avoidance measures for biological resources and sensitive areas (Kings River, intermittent drainages and native land of Cross Creek, and the Manning Recharge Basin) and to conduct protocol surveys for kit fox, burrowing owl, Swainson's hawk, and nesting raptors among three potential areas. The kit fox and raptor surveys have been conducted and their reports were sent to you in September 2008. We concluded that no impacts will occur to raptors or kit fox due to the project.

During the February 2008 tour, Mr. Jorgenson requested additional preventive avoidance measures for the Cross Creek area and for elderberry bush habitat at the Kings River. He asked the KRCD to consider using Horizontal Directional Drilling (HDD) techniques to go completely underneath the Cross Creek native land to avoid all potential impacts. Biological resources in the Cross Creek area include sensitive species and habitats such as intermittent drainages, vernal pool wetlands, sensitive shrimps, California Tiger Salamander, and Critical Habitats.

In spring 2008, the KRCD conducted an in-house evaluation of Jack-and-Bore versus HDD techniques at the Cross Creek area and decided to use HDD to bore completely under the Cross Creek native land (2 areas) to avoid all potential impacts. This HDD work requires four staging/construction sites for the two Cross Creek boring areas. Also in spring 2008, the KRCD modified the proposed project to include a new 60-acre construction staging area catty-corner to the proposed power plant site and a revised portion of the previously proposed transmission line route. These new project features were not evaluated in the BA (November 2007) so this addendum is prepared to evaluate such areas and to incorporate into the BA the additional preventive avoidance measures as recommended by the USFWS.

Our evaluation of the three new project features shows that no significant adverse impacts will occur to sensitive species, sensitive habitats, or biological resources by the project. The project has been designed to avoid impacts to biological resources, a variety of preventive avoidance measures have been incorporated, new project features have no significant impacts, and additional preventive avoidance measures have been incorporated into the project as recommended by the USFWS. Thus, we conclude that a finding of "not likely to adversely effect" is appropriate for the project. We request that the USFWS review this Addendum and provide a concurrence of "not likely to adversely effect" determination as part of an informal consultation process under Section 7 of the ESA.

Sincerely,

Pamela Halstead
Jeff Halstead

Pamela S. and Jeffrey A. Halstead
Owners / Partners / Biologists

cc: Mr. Taylor Matteson (KRCD, Fresno)
Mr. Brian McCollough (CEC, Sacramento)
Mr. Justin Sloan (CDFG, Fresno)
Ms. Amy Cuellar (Navigant Consulting Inc., Rancho Cordova)

ADDENDUM TO THE
BIOLOGICAL ASSESSMENT
FOR THE
KING RIVER CONSERVATION DISTRICT
COMMUNITY POWER PLANT PROJECT
(FRESNO AND TULARE COUNTIES, CALIFORNIA)

KRCD COMMUNITY
POWER PLANT

Energy for our Future

Location

Power Plant Site and Staging Area
(32 and 15 acres respectively, Selma Quad, Fresno County, CA)
Water Pipeline (@ 5 Miles, Selma & Sanger Quads, Fresno County, CA)
Transmission Line (@ 5 Miles, Selma & Conejo Quads, Fresno County, CA)
Natural Gas Pipeline (@ 26 Miles, Selma, Reedley, Traver, & Goshen Quads,
Fresno & Tulare Counties, CA)

Prepared by:
Halstead & Associates
Environmental/Biological Consultants

October 2008

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5.3 VALLEY ELDERBERRY LONGHORN BEETLE AND ELDERBERRY BUSH HABITAT 6

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ATTACHMENTS

A Cover Letter for the KRCD CPP Biological Assessment (November 2007)

B Overview Map of the KRCD CPP

C Aerial Map Showing the New 60-Acre Staging Site and the New Transmission Line Route.

D Aerial Maps Showing the HDD Construction Staging Areas

E Letter to Corps Regarding Additional Information on the HDD Construction Staging Areas

F Biological Resources Section of KRCD CPP AFC Supplement B

G Frac-out Plan for the HDD

H Memo Regarding the VELB Surveys and Elderberry Bush Mapping at the Kings River

1.0 BACKGROUND

A Biological Assessment (BA) for the Kings River Conservation District Community Power Plant (KRCD CPP) was completed and submitted to the U. S. Fish and Wildlife Service (USFWS) in November 2007. The cover letter with the BA briefly explained the project, the KRCD CPP Application for Certification (AFC) permitting process through the California Energy Commission (CEC), the permitting relationship with the U. S. Environmental Protection Agency, and included a request for a finding of "not likely to adversely effect" as part of an informal consultation process under Section 7 of the Endangered Species Act (ESA). This letter is presented in Attachment A to provide background information. A map showing the location of the KRCD CPP, a 565 megawatt power plant proposed to be located east of the City of Parlier (Fresno County) and the routes of the approximately 5 miles of electrical transmission lines, 5 miles of water pipeline, and 26 miles of natural gas pipeline is included as Attachment B. The transmission lines, water pipeline, and natural gas pipeline occur in Fresno County, and the gas pipeline also extends to its interconnection point near the City of Visalia in Tulare County.

On 13 February 2008, Mr. Jeff Jorgenson (USFWS) along with Mr. Brian McCollough of the CEC, Mr. Justin Sloan of the California Department of Fish and Game (CDFG), and Jeff and Pamela Halstead of Halstead & Associates (H&A) toured the project site and linear features so that the USFWS and CDFG could see and better understand the project. The BA proposed a variety of preventive avoidance measures for biological resources and sensitive areas (Kings River, intermittent drainages and native land of Cross Creek, and the Manning Recharge Basin) and to conduct protocol surveys for the San Joaquin Kit Fox, Burrowing Owl, Swainson's Hawk, and nesting raptors among the three potential areas. During the tour, the USFWS requested additional preventive avoidance measures including: (1) that elderberry bushes along the Kings River at the Horizontal Directional Drilling (HDD) crossing be surveyed for the Valley Elderberry Longhorn Beetle (VELB), (2) elderberry bushes be mapped, (3) the VELB and bushes be included in the project's worker awareness program, (4) prior to construction the bushes be flagged and photographed, and (5) a post-construction monitoring survey and report be conducted for the elderberry bushes. Also, the USFWS requested that the KRCD consider using HDD techniques to go completely underneath the Cross Creek intermittent drainages and native land to avoid all potential impacts to vernal pool wetlands, sensitive shrimps, and the California Tiger Salamander.

Since the BA was submitted, KRCD has committed to using HDDs to install the gas pipeline completely under both the Kings River and the intermittent drainages of Cross Creek. Utilizing the HDD method will avoid any disturbances to the bed and bank of the Kings River and to biological resources in the Cross Creek area. There would be two separate HDDs completed in

the Cross Creek area and one HDD under the Kings River. Since the decision to HDD was made, further field investigation determined additional construction staging areas were needed. There are now a total of six HDD construction staging areas (two for the Kings River crossing and two for each of the two Cross Creek crossings).

KRCD has also modified the KRCD CPP to include a new 60-acre construction staging area catty-corner to the proposed power plant site and has also revised portion of the previously proposed transmission line route. These new areas were not evaluated or included in the BA (November 2007) so this addendum is prepared to evaluate such areas and to incorporate into the BA the additional preventive avoidance measures as recommended by the USFWS.

2.0 REASON FOR THE ADDENDUM TO THE BIOLOGICAL ASSESSMENT REPORT

In spring and summer 2008, KRCD modified the KRCD CPP to include new project features as follows:

- A 60-acre construction staging area catty-corner to the proposed power plant site;
- A revised portion of the previously proposed transmission line route; and
- The addition of construction staging areas along the natural gas pipeline route for the one HDD under the Kings River and the two HDDs under the intermittent drainages and native land of Cross Creek.

An aerial location map of the new 60-acre staging area and the revised transmission line route is presented in Attachment C. Aerial maps for the HDDs and their associated construction staging areas are presented in Attachment D. Photographs of the HDD areas are presented in Attachment E. These new features were not evaluated or included in the BA (November 2007) so this addendum is prepared to evaluate such areas and to incorporate into the BA the additional preventive avoidance measures as recommended by the USFWS.

3.0 EVALUATION OF NEW PROJECT FEATURES

Biological reconnaissance surveys were conducted specifically for the new project features 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. Field surveys were conducted by biologists Mr. Jeffrey A. Halstead, Ms. Pamela Halstead, and Mr. Andrew Roberts, all of H&A. The new project features 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. The new 60-acre staging area was also surveyed as part of the San Joaquin Kit Fox den search surveys conducted for the

project on June 3 and 7, 2008. Biological survey reports summarizing these survey results were previously provided under separate cover.

The new project features occur on leveled, actively farmed, and irrigated agricultural land. Lands immediately surrounding the new project areas are actively farmed agricultural lands, the Parlier Waste Water Treatment Plant, or paved county roads. The new project features were evaluated in detail as part of KRCD CPP AFC Supplement B, which was submitted to the CEC for consideration in the licensing process. The Biological Resources section of KRCD CPP AFC Supplement B describes the project sites, the evaluation methods used, and the findings for the new project features. The Biological Resources section of KRCD CPP AFC Supplement B is included as Attachment F.

In summary, no sensitive species or habitats occur at or immediately adjacent to the new project features. We conclude that no significant adverse impacts will occur at the new project features. Since the new project features are agricultural land, no loss of or significant impacts to wildlife habitat or sensitive habitats will occur. With the implementation of the previously proposed preventive avoidance measures in the BA, biological resources will be protected and preserved.

In response to a request by the CEC at their March 6, 2008 Data Response and Issues Identification Workshop, a "Frac-out Plan" has been developed for the HDD work under the Kings River and intermittent drainages of Cross Creek should a drilling mud spill occur. The plan is included in Attachment G. Also, a Notification of Lake or Streambed Alteration application was submitted to the CDFG in mid-September 2008 to obtain a Streambed Alteration Agreement for work underneath the bed of the Kings River and the Cross Creek's intermittent drainages. The U. S. Army Corps of Engineers does not believe that a permit will be required for the HDD undercrossings. However, they were recently sent additional information and maps on the project for their review and consideration and to conform that a permit would not be required. This information package for the Corps is presented in Attachment E and contains photographs of the HDD construction staging areas.

4.0 ADDITIONAL PREVENTIVE AVOIDANCE MEASURES REQUESTED BY THE USFWS

The BA incorporated a variety of preventive avoidance measures for biological resources and sensitive areas (Kings River, intermittent drainages and native land of Cross Creek, and the Manning Recharge Basin) and proposed protocol surveys for kit fox, burrowing owl, Swainson's hawk, and nesting raptors among three potential areas. During the project tour on 13

February 2008, the USFWS requested additional preventive avoidance measures be incorporated into the project to protect and preserved biological resources at the Kings River and Cross Creek areas. These additional and recommended measures are listed below by resource and project site.

4.1 VALLEY ELDERBERRY LONGHORN BEETLE AND ELDERBERRY BUSH HABITAT AT KINGS RIVER

In response to USFWS recommendation during the 13 February 2008 tour and a request at the CEC Data Response and Issues Identification Workshop (March 26, 2008), the following additional preventive avoidance measures were incorporated into the project, and are incorporated into the BA thru this Addendum.

KR #3. An educational program shall be conducted by a qualified biologist for all project managers, engineers, contractors, and construction crews prior to work to inform them of the VELB and its elderberry bush habitat in the Kings River undercrossing area, the need to avoid damaging these resources, and the possible penalties or not complying with the measure.

KR #4. Prior to construction, elderberry bushes will be flagged with yellow cautionary tape and photographs shall be taken by a qualified biologist to document the existing condition of the elderberry bushes in the Kings River undercrossing area. After completion of the construction activities, the same-direction photographs shall be taken for comparative purposes and to document post-construction conditions.

KR #5. A post-construction monitoring survey shall be conducted by a qualified biologist to evaluate the implementation of and compliance with the preventive measures. A report, including the above photographs, shall be prepared and sent to the CEC upon completion of construction.

4.2 SENSITIVE HABITATS AND SPECIES AT CROSS CREEK

In response to the USFWS request to consider using HDD techniques to bore underneath the Cross Creek native land to avoid all potential impacts to vernal pool wetlands and sensitive species, the KRCD has decided to do so and will use two HDDs to bore completely underneath Cross Creek native land. This project modification resulted in additional surveys and evaluation being conducted for the four construction staging areas in the Cross Creek area. Findings from the evaluation are presented in the Biological Resources section of KRCD CPP AFC

Supplement B (see Attachment F).

In summary, the four Cross Creek HDD construction staging areas occur on leveled, actively farmed, and irrigated agricultural land. Lands immediately surrounding the sites are actively farmed agricultural lands or paved county roads. No sensitive species or habitats occur at or immediately adjacent to the Cross Creek HDD construction staging areas. We conclude that no significant adverse impacts will occur by the use of HDD techniques at the Cross Creek area. Since the new project features are agricultural land, no loss of or significant impacts to wildlife habitat or sensitive habitats will occur. With the implementation of the previously proposed preventive avoidance measures in the BA, biological resources will be protected and preserved.

The following additional preventive avoidance measures will be incorporated into the project, and are incorporated herein into the BA thru this Addendum:

CC #16. HDD techniques will be used to install the gas pipeline completely underneath the intermittent drainages and native land of Cross Creek. Two HDDs will be installed in the Cross Creek area. Any reference to techniques other than HDD in the BA are now retracted and obsolete.

CC #17. HDD construction staging areas will be located on leveled, actively farmed, and irrigated agricultural land.

CC #18. A buffer zone of at least 200 feet will occur between the HDD construction staging areas and the native land in the Cross Creek area. Any buffer zones previously proposed in the BA for the Cross Creek area are now retracted and obsolete.

5.0 RESULTS OF PROTOCOL SURVEYS (2008) FOR SENSITIVE SPECIES

5.1 RAPTORS

As proposed in Preventive Avoidance Measures BO #1 and SH #1 of the BA, H&A conducted protocol Burrowing Owl, Swainson's Hawk, and nesting raptor surveys in winter 2007 thru spring 2008. A report by H&A (July 2008) titled "Burrowing Owl, Swainson's Hawk, and Nesting Raptor Survey for the Kings River Conservation District's Community Power Plant near Parlier (Fresno & Tulare Counties, California)" was forwarded to the USFWS, CDFG, and CEC in September 2008 to report upon the surveys and the findings.

In summary, no Burrowing Owl or Swainson's Hawk nests were found on or adjacent to the

project sites. One Swainson's Hawk was observed, but it did not nest in our project area. Several nests were found and monitored during the surveys. A few nests were occupied and nesting occurred by raptors such as Great-horned Owl and Red-tailed Hawk. Preventive avoidance measures in the BA will protect and preserve such resources. We concluded that no project impacts will occur to raptors, their nests, or their habitat due to the project.

5.2 SAN JOAQUIN KIT FOX

As proposed in Preventive Avoidance Measure KF #1 of the BA, H&A conducted protocol surveys for the San Joaquin Kit Fox in summer 2008 at the Manning Recharge Basin. Den and track searches were also conducted at the new 60 acre staging area and along Road 60 in the Cross Creek area. A report by H&A (June 2008) titled "San Joaquin Kit Fox Survey Report for the Kings River Conservation District's Community Power Plant near Parlier (Fresno & Tulare Counties, California)" was forwarded to the USFWS, CDFG, and CEC in September 2008 to report upon the surveys and the findings.

In summary, no kit fox or their evidence were found on the project sites. Preventive avoidance measures in the BA will protect and preserve such resources. We concluded that no project impacts will occur to kit fox or their habitat due to the project.

5.3 VALLEY ELDERBERRY LONGHORN BEETLE AND ELDERBERRY BUSH HABITAT

On September 4, 2008, H&A conducted the requested surveys for the VELB and mapped its elderberry bush habitat along the Kings River where the natural gas pipeline will be bored underneath the river using HDD. A memo regarding the VELB surveys, the elderberry bush mapping, and findings is presented in Attachment H.

In summary, the survey included a 600 foot wide zone on both sides of the river and all elderberry bushes were visually checked. The area surveyed included 300 feet on either side of the proposed alignment of the gas pipeline undercrossing. Three elderberry bushes where found in the riparian habitat along the east side of the Kings River. Seven elderberry bushes or clumps of bushes were found in the riparian habitat along the west side of the Kings River. The bushes have hundreds of stems, are healthy, and occur upon the upper banks of the river. The location of the elderberry bushes were recorded with a hand-held global positioning system (GPS) unit and mapped upon a project aerial map. Elderberry bushes and their stems and trunks were examined for the VELB and its emergence hole evidence, but none were found. We conclude that the elderberry bushes near the Kings River undercrossing are not inhabited by the VELB.

There will be one HDD installed under the Kings River. All construction activities for

the Kings River undercrossing will occur outside of and away from the riparian and elderberry bush habitat of the river. An additional 500 foot no activity buffer zone will also occur outward from the edge of the riparian habitat. The two HDD construction staging areas for the Kings River are shown on an aerial map in Attachment H. Photographs of the sites are shown as part of Attachment E. These sites occur in leveled, actively farmed, and irrigated agricultural lands. The eastern work or staging area is an peach orchard and the western area is an alfalfa field. We conclude that impacts to the VELB or its elderberry bush habitat will not occur as a result of the project.

6.0 REQUEST FOR "NOT LIKELY TO EFFECT" FINDING

The evaluation of the new project features shows that the KRCD CPP will result in no significant adverse impacts to sensitive species, sensitive habitats, or biological resources. The project has been designed to avoid impacts to biological resources, a variety of preventive avoidance measures have been incorporated, new project features have no significant impacts, and additional preventive avoidance measures have been incorporated into the project as recommended by the USFWS. Thus, we conclude that a finding of "not likely to adversely effect" is appropriate for the project. We request that the USFWS review this Addendum and provide a concurrence of "not likely to adversely effect.

ATTACHMENT A

Cover Letter

for the

KRCD CPP Biological Assessment (November 2007)

KRCD
Kings River Conservation District

4886 East Jensen Avenue
Fresno, California 93725

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

www.krcd.org

November 29, 2007

Mr. Jeffrey Jorgenson, Senior Biologist
San Joaquin Valley Branch, Endangered Species Program
U. S. Fish and Wildlife Service
2800 Cottage Way, W-2605
Sacramento, CA 95825

Re: Kings River Conservation District Community Power Plant – Biological Assessment

Dear Mr. Jorgensen:

At the direction of the United States Environmental Protection Agency (USEPA), Region 9, the Kings River Conservation District (KRCD) submits for your review the enclosed Biological Assessment (BA) for the Kings River Conservation District Community Power Plant (KRCD CPP).

KRCD is proposing to construct the KRCD Community Power Plan (CPP), a nominal 565 megawatt power plant east of the City of Parlier in Fresno County, California. The power plant will be constructed on an approximately 32-acre parcel. Additionally, a 15-acre area adjacent to the power plant site will be used for temporary staging and parking during construction. Linear facilities for the project include approximately 5 miles of electrical transmission lines, 5 miles of water pipeline, and 26 miles of natural gas pipeline. The transmission lines, water pipeline, and natural gas pipeline occur in Fresno County, and the gas pipeline also extends to its interconnection point near the City of Visalia in Tulare County, California.

As part of the KRCD CPP permitting process, a Prevention of Significant Deterioration (PSD) review and permit are required from the USEPA Region 9. KRCD has filed its PSD permit application with Region 9. However, under Section 7 of the Endangered Species Act, the USEPA cannot take final action on the PSD permit until a determination has been made that the KRCD CPP will not result in significant adverse impacts to threatened or endangered species or their habitat.

The purpose of the attached BA is to review the proposed KRCD CPP in sufficient detail to determine to what extent the proposed action may affect threatened, endangered, proposed, and sensitive species as well as sensitive and critical habitats. Given the nature of the KRCD CPP and its potential impacts and as described in the BA, formal consultation under Section 7 of the Federal Endangered Species Act is not being initiated. Instead and per agreement with the USEPA, the

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BA is being submitted as part of an informal consultation process under Section 7 along with a request for concurrence of a "not likely to adversely effect" determination.

Three hard copies of the BA and one electronic copy on compact disk are attached. In addition, three hardcopies of the BA are being sent directly to Ms. Trina Martynowicz, USEPA Region 9. Ms. Martynowicz, who is responsible for PSD permitting of the KRCD CPP, may be reached at (415) 972-3474.

Please contact me at (559) 237-5567 or our biologist, Jeff Halstead, Halstead & Associates at (559) 298-2334, if you have any questions.

Sincerely,

for

David Orth
General Manager

DO/JR/TM/ss

Enclosures: As stated

cc: Trina Martynowicz, US EPA Region 9 w/ encl.
Mary Hammer, USFWS w/encl.

File: 536-02.08
L07-0359

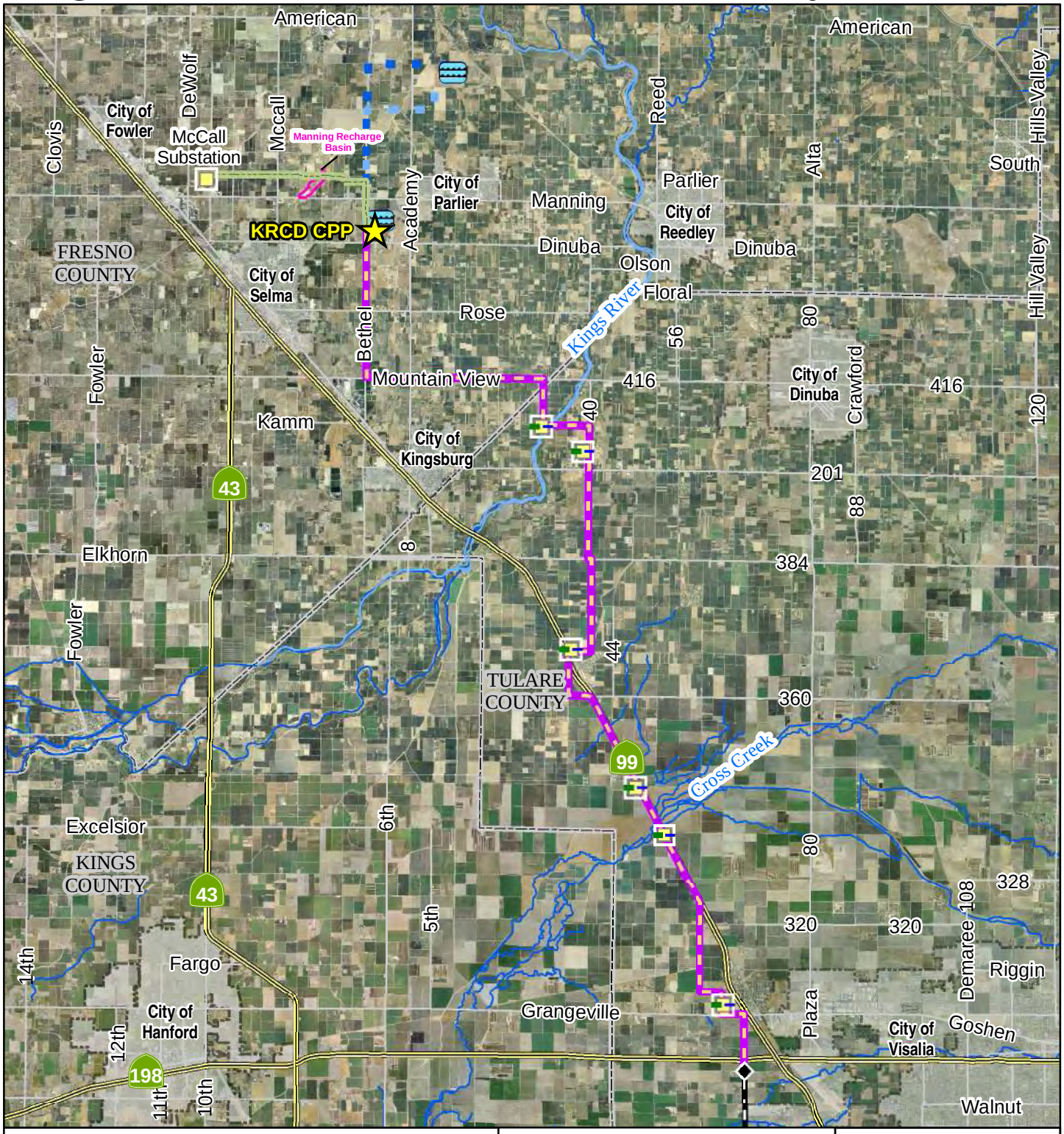
ATTACHMENT B

Overview Map

of the

KRCD CPP

Kings River Conservation District Community Power Plant



KRCD Community Power Plant
Freeway
Major Street
City Boundary
County Boundary Line
Substation
Proposed Transmission Line
Waste Water Percolation Ponds
Proposed Water Supply Pipeline - Option 1
Proposed Water Supply Pipeline - Option 2
Natural Gas Connection Point
Proposed Natural Gas Staging / HDD Area
Proposed Natural Gas Pipeline
SoCal Gas 7000 Line
Manning Recharge Basin

Power Plant Overview

N 0 1 2 3 4 5 Miles

1:200,000 Scale

KRCD Community Power Plant

Energy for our Future

ATTACHMENT C

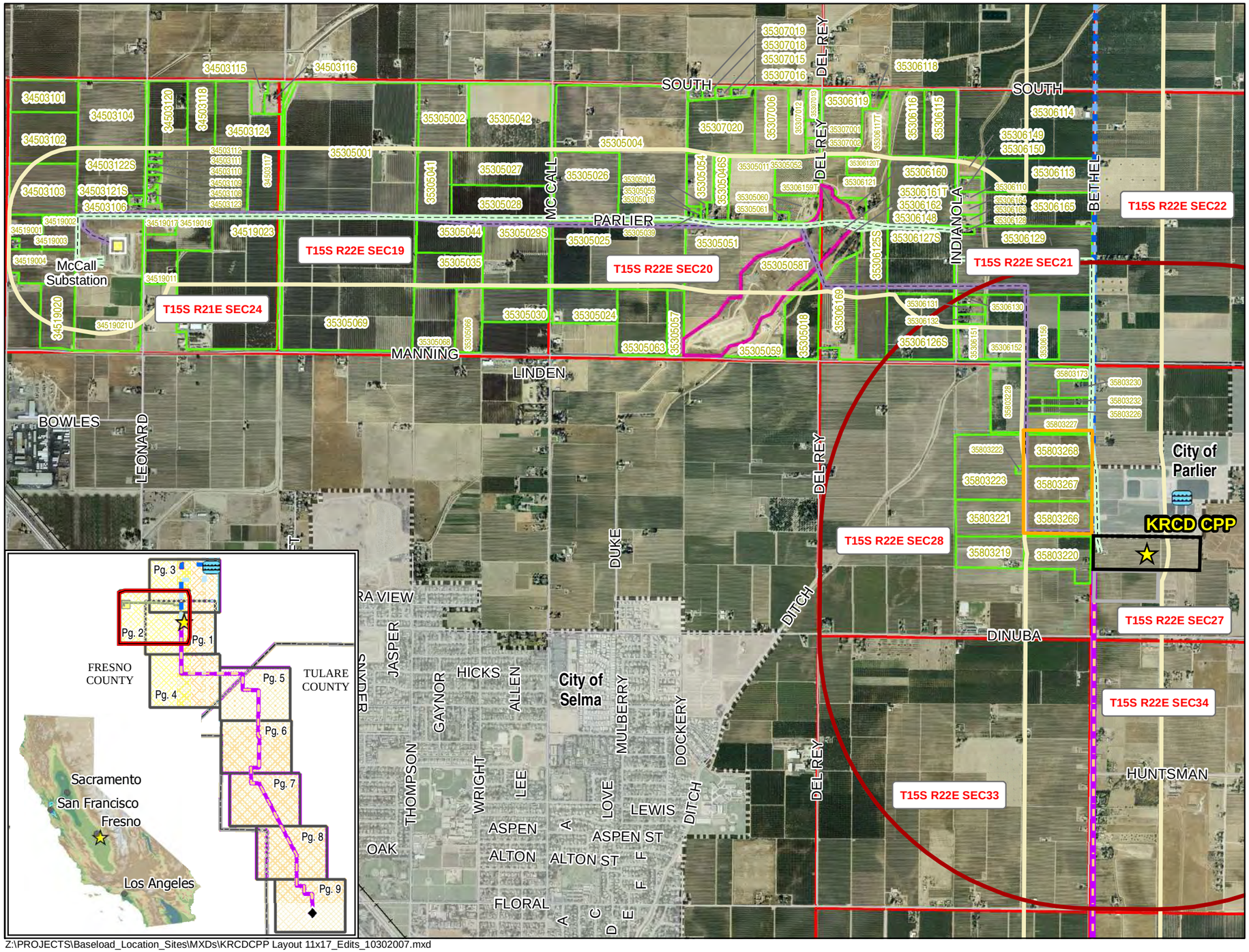
Aerial Map Showing the

New 60 Acre Construction Staging Site

and the

New Transmission Line Route

Kings River Conservation District Community Power Plant



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KRCD COMMUNITY POWER PLANT

Energy for our Future

Project Location Maps

Page: 2 of 9

- 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
- Linear 1/4 Mile Buffer
- Substation
- Proposed 230KV Transmission Line (New)
- Proposed 230KV Transmission Line (Originally Proposed)
- 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
- Natural Gas Connection Point
- Proposed Natural Gas Laydown Area
- Proposed Natural Gas Pipeline
- SoCal Gas 7000 Line
- 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

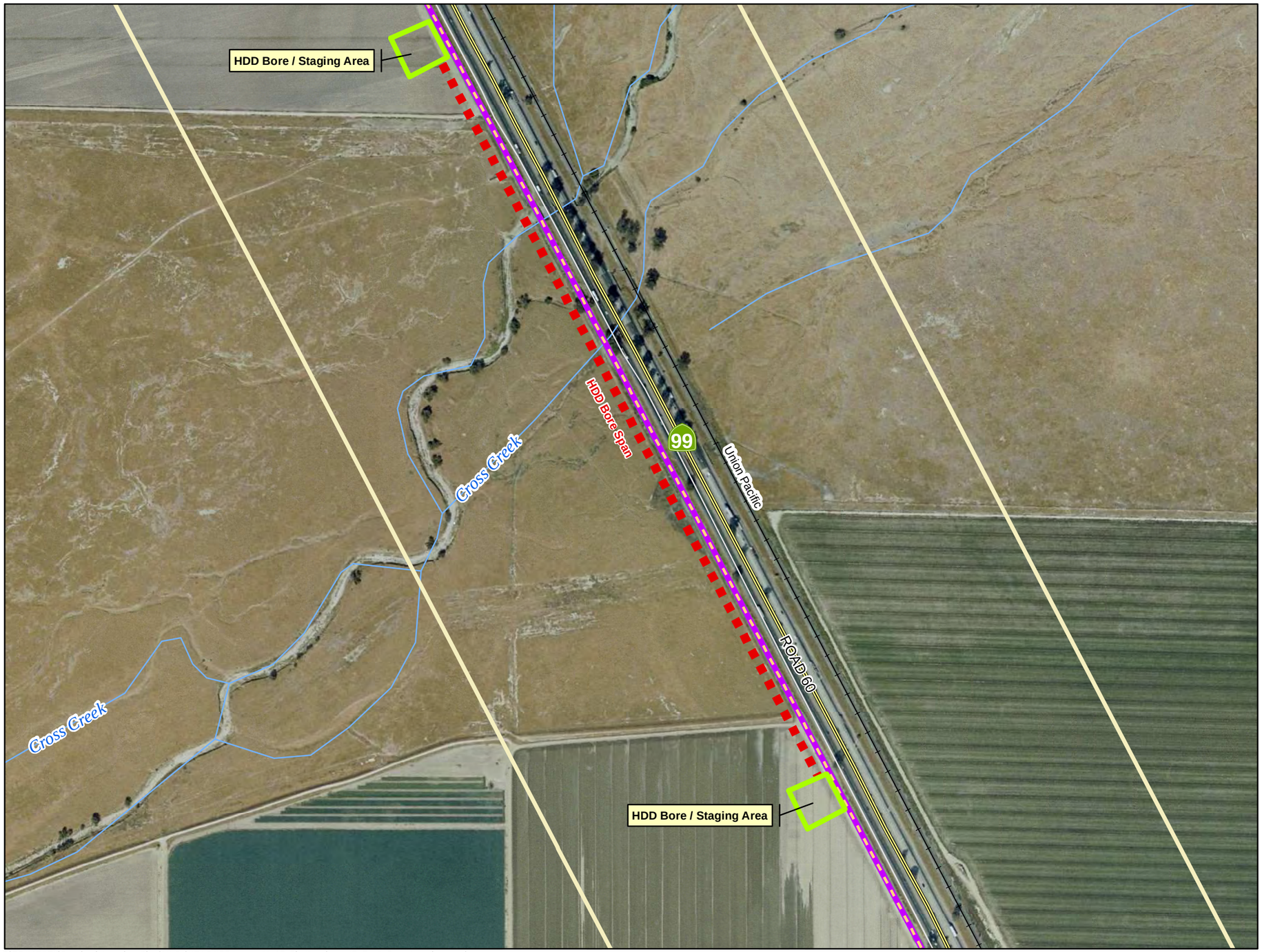
1:24,000 Scale 1 Inch equals 2,000 Feet

ATTACHMENT D

Aerial Maps Showing the

HDD Construction Staging Areas

Kings River Conservation District Community Power Plant



KRCD COMMUNITY POWER PLANT

Energy for our Future

Horizontal Directional Drilling
(HDD) Contingency Plan
"Frac-Out Plan"

HDD Bore Work / Staging Area Page 3 of 3

- HDD Bore / Laydown Area
- HDD Bore Span
- Linears 1/4 Mile Buffer
- Proposed Natural Gas Pipeline
- Freeway
- Street
- Railroad
- Waterway
- County Boundary
- City Boundary

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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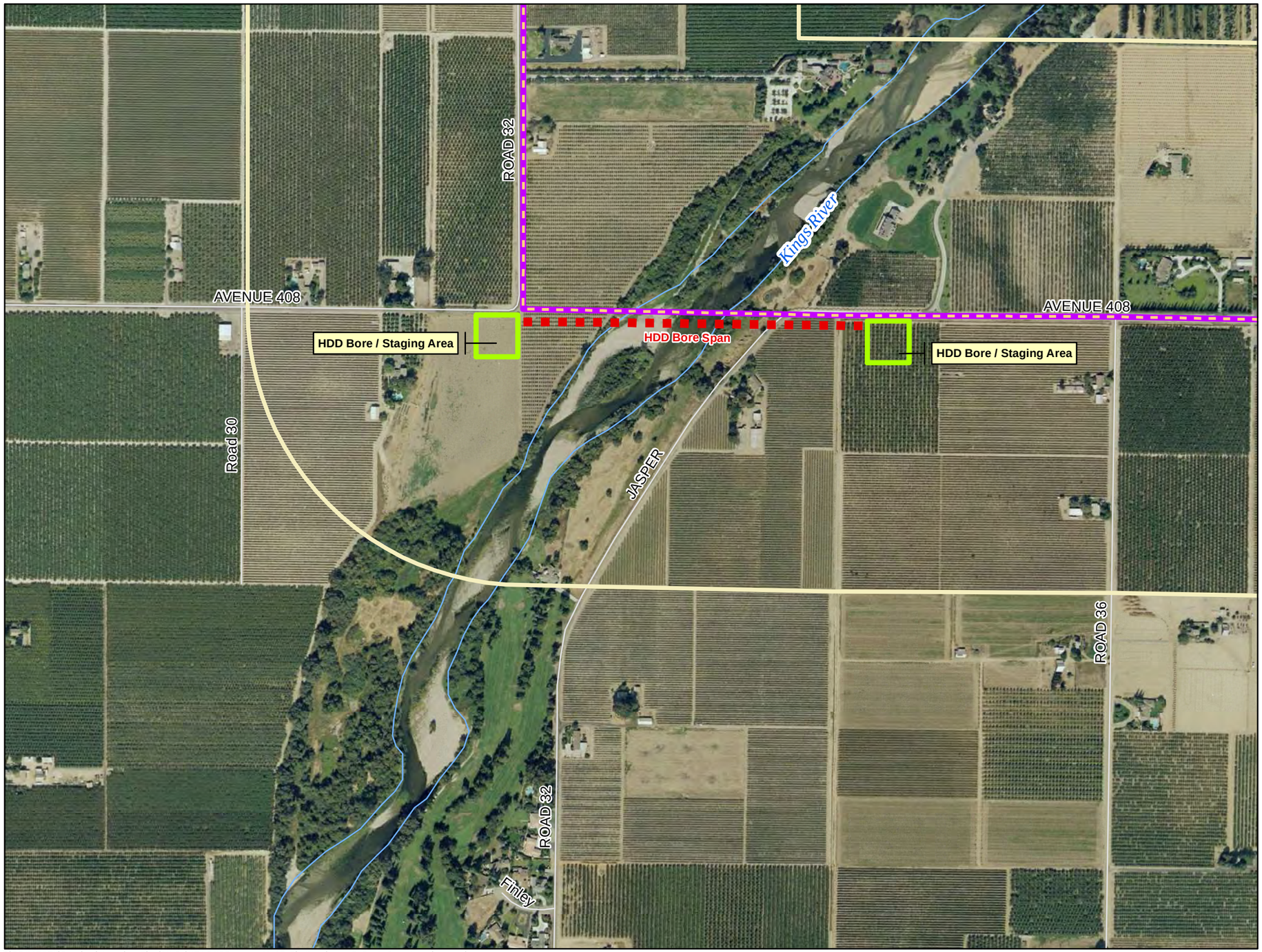
Kings River Conservation District Community Power Plant



KRCD COMMUNITY POWER PLANT

Energy for our Future

Horizontal Directional Drilling
(HDD) Contingency Plan
"Frac-Out Plan"

HDD Bore Work / Staging Area Page 1 of 3

- HDD Bore / Laydown Area
- HDD Bore Span
- Linears 1/4 Mile Buffer
- Proposed Natural Gas Pipeline
- Freeway
- Street
- Railroad
- Waterway
- County Boundary
- City Boundary

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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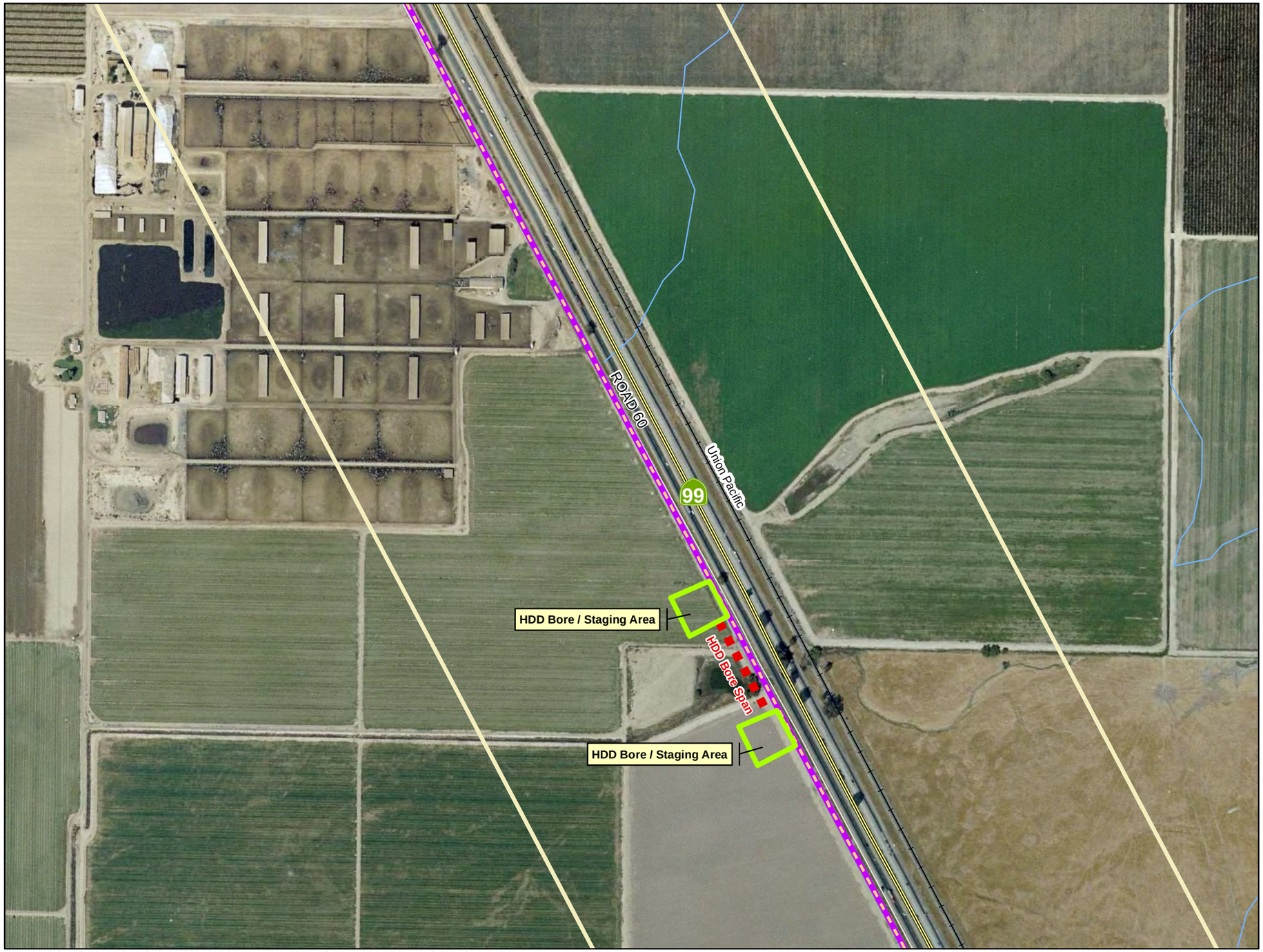
Kings River Conservation District Community Power Plant



KRCD COMMUNITY POWER PLANT

Energy for our Future

Horizontal Directional Drilling
(HDD) Contingency Plan
"Frac-Out Plan"

HDD Bore Work / Staging Area Page 2 of 3

- HDD Bore / Laydown Area
- HDD Bore Span
- Linears 1/4 Mile Buffer
- Proposed Natural Gas Pipeline
- Freeway
- Street
- Railroad
- Waterway
- County Boundary
- City Boundary

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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ATTACHMENT E

Letter to the Corps

Regarding Additional Information

on the HDD Construction Staging Areas

HALSTEAD & ASSOCIATES
Environmental / Biological Consultants
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Fax (559) 322-0769; HalsteadEnv@aol.com

September 10, 2008

Mr. Ramon Aberasturi
U. S. Army Corps of Engineers, Sacramento District
Regulatory Branch
1325 J Street
Sacramento, CA 95814

RE: <u>Kings River Conservation District's Community Power Plant (Fresno & Tulare Counties)</u>
<u>HDD Boring Under the Kings River and Cross Creek Intermittent Drainages</u>
<u>Frac-out Plan, Location Maps, and Photos for HDD Work Areas - As Requested</u>

Dear Ramon:

Thanks for your phone call of July 21, 2008 regarding our questions about a permit to bore under the Kings River near Kingsburg (Fresno County) and under the 6 intermittent drainages of Cross Creek near Traver (Tulare County) using Horizontal Directional Drilling (HDD) techniques to install a 24-inch natural gas pipeline for the Kings River Conservation District's (KRCD) proposed Community Power Plant project near Parlier. As mentioned in our phone conversation, we do not think a permit is necessary as no impacts will occur to waters/wetlands. We conclude this because no work or impacts will occur in the bed or bank of the waters/wetlands, the HDD work areas (three sites) have been sighted to occur on agricultural land, they are outside, away from, and do not drain into the riparian/wetland habitat, buffer zones of at least 200 feet will occur between the HDD work areas and the outer edge of the riparian/ wetland habitat, lands surrounding the HDD work areas are actively farmed agricultural land or paved county roads, and a variety of preventive avoidance measures will completely avoid all impacts. The buffer zones at the Kings River area will be approximately 500 feet. The buffer zones at the two Cross Creek areas will be approximately 200 feet and 300 feet.

You asked us to provide the following information for your review and evaluation if a permit would be necessary: (1) a frac-out plan for the HDD work, (2) maps of the HDD work locales, and (3) photos of the entrance and exit sites of the HDD. The purpose of sending this information is for you to see the project layout and see that no impacts will occur to waters/wetlands. As requested, a copy of the project's Frac-out Plan is attached, the HDD work areas are shown on maps in the Frac-out Plan, and photos of the entrance and exit sites of the HDD work are attached.

Background

The KRCD is proposing a 565 megawatt natural gas-fired power plant near the City of Parlier (Fresno County, California) and has file an Application For Certification (AFC) with the California Energy Commission for permitting of the plant. Specifically, the plant will set upon a 20 acre parcel just northeast of the intersection of Bethel and Dinuba Avenues. A 20-acre area of a 60-acre alfalfa field adjacent to the plant site will be used as a construction yard for the project. The project involves four basic components including the power plant site, natural gas pipeline, water pipeline, and transmission lines (see attached map). Many miles of water pipeline, transmission lines, and gas pipeline are proposed for the project. The first two structures will occur in Fresno County and the gas pipeline will interconnect with an existing gas pipeline near Visalia in Tulare County and run north to the power plant site in Fresno County.

In May 2007, we conducted reconnaissance surveys to evaluate if wetlands and waters occur on or adjacent to the project site and along the water, gas, and transmission line routes. Our waters/wetlands evaluation report was forwarded to you in January 2008 with a request for guidance on permits. That report lists the multitude of preventive avoidance measures for the project, and they are attached for reference. Since that report, the KRCD has decided to bore completely underneath the Cross Creek area to avoid potential impacts. A Biological Assessment Report was been prepared for the project in November 2007.

HDD techniques will be used to install the 24-inch natural gas pipeline under waters/wetlands at two sites:

- Kings River near Kingsburg (1 HDD site)
  (Section 17, Township 16S, Range 23E, Reedley Quad, Fresno County)

- Cross Creek intermittent drainages south of Traver (2 HDD sites)
  (Section 34, Township 17S, Range 23E, Traver Quad, Tulare County)

The Cross Creek area is annual grassland habitat that has six intermittent drainages, some of which are wetlands and some are waters. The gas pipeline will occur in the Road 60 right-of-way; however, private lands adjacent to the right-of-way have wetland ponds, vernal pool wetlands, the endangered Vernal Pool Tadpole Shrimp, Critical Habitats, and potentially other sensitive species too. Two HDD sites will be used to bore underneath two separate areas of Cross Creek intermittent drainages. The Kings River at the gas pipeline route is a waters and has wetland and riparian habitat along its banks.

Please advise us if a permit is needed to bore under the Kings River and intermittent drainages of Cross Creek using HDD techniques to install a gas pipeline for the KRCD's power plant project.

Sincerely,

Jeffrey A. & Pamela S. Halstead
Owners/Partners/Biologists

cc: Mr. Taylor Matteson (KRCD)
Ms. Amy Cuellar (Navigant Consulting, Inc.)

Horizontal Directional Drilling (HDD) Contingency Plan for Inadvertent Returns of Drilling Mud

Kings River Conservation District's Community Power Plant near Parlier (Fresno & Tulare Counties)

The Horizontal Directional Drilling (HDD) construction method will be used to place the pipe for the natural gas service lateral supplying the KRCD Community Power Plant (CPP) at crossings under the Kings River (Fresno County, CA) and at Cross Creek (Tulare County, CA). The HDD construction method is much less intrusive than the traditional open-cut trenching, in particular through sensitive habitats and waterways. The HDD method has been chosen to install the natural gas pipeline at these areas to avoid any impacts to sensitive habitats, plants, and wildlife and to protect and preserve the environmental resources.

HDD requires a drilling lubricant or "mud", slurry of bentonite clay, to enable and maintain the bore tunnel. Quantities of the drilling fluid escaping from the bore hole can damage sensitive habitat. The bentonite slurry is non-toxic, but can potentially smother aquatic plants, benthic invertebrates, fish and their eggs, and upland habitats if excessive amounts are discharged.

The pipeline construction contractor will be required to implement the strategies discussed below during HDD activities to minimize the potential for inadvertent returns or "frac-outs" of drilling fluids. These strategies include preventative measures as well as effective containment and clean-up actions if a "frac-out" were to occur. The pipeline construction contractor will be required by the contract to prepare a drilling plan and obtain its approval by the Construction Manager and permitting authorities detailing procedures for preventing loss of drilling mud and mitigating any mud loss incidents that do occur.

HDD Locations and Methods

The pipeline alignment extends from an existing Southern California Gas Company pipeline south of Highway 198 west of Visalia, CA in a northerly direction to the site of the KRCD Community Power Plant near Parlier, CA. Three HDD installations are planned. One will occur under the Kings River near Kingsburg and the other two will occur under the intermittent drainages and native land of Cross Creek west of Highway 99 south of Traver, CA. Standard HDD methods will be used to install the pipeline under the waterways to avoid potential impacts to these sensitive habitats and their sensitive plant and wildlife resources.

Site 1: Kings River Crossing

The HDD operation will require the set up of pads on both ends of the bore tunnel under the Kings River (See attached map, Page 1 of 3). The pads will be approximately 150 by 150 feet in size. Most likely, the entrance of the drill will be located west of the river, with the welded segments of pipe to be placed under the river in an easterly direction. The entrance pad will be approximately 500 feet outside and away from the Kings River riparian zone, and will be located in a leveled and actively farmed alfalfa field. The exit pad will be approximately 500 feet outside and away from the Kings River riparian zone, and will be located in an actively farmed peach orchard. The depth of the pipeline under the Kings River is proposed to be 75 feet under the river bottom.

Site 2: Cross Creek Channels

The HDD operation will require the set up of pads on both ends of the bore tunnel under the Cross Creek area in each of two locales known as 1) the northern Cross Creek area and 2) the southern Cross Creek area. Each of the areas is described below.

Northern Cross Creek Area. -The northern area involves installation of the pipe under an isolated intermittent drainage of Cross Creek (See attached map, Page 2 of 3). The drainage runs under the Santa Fe Railroad tracks and Highway 99 from the east and then empties into a small, dead-end, farm water-regulation pond. The HDD operation will require set up pads on both ends of the bore tunnel under the Kings River (See attached map, Page 2 of 3). The pads will be approximately 150 by 150 feet in size. Most likely, the entrance of the drill will be located south of the drainage, with the welded segments of pipe to be placed under the river in a northerly direction. The entrance pad will be approximately 175 feet or more away from the drainage and pond, and will be located in a leveled, actively farmed, and currently disced field. The exit pad will be approximately 175 feet or more away from the drainage and pond, and will be located in a leveled, actively farmed, and currently disced field. The depth of the pipeline under the drainage is proposed to be at least 35 feet under the deepest Cross Creek drainage bottom.

Southern Cross Creek Area. - The southern area involves installation of the pipe under a 3,000-foot wide, native land area of Cross Creek that has five intermittent drainages, sensitive wildlife and plant resources, waters, wetlands, and critical habitats for sensitive species and habitats. The HDD operation will require set up pads on both ends of the bore tunnel under the native land (See attached map, Page 3 of 3). The pads will be approximately 150 by 150 feet in size. Most likely, the entrance of the drill will be located south of the native land, with the welded segments of pipe to be placed under the native land in a northerly direction. The entrance pad will be at least 300 feet outside and away from the native land, and will be located in a leveled, actively farmed, and currently disced field. The exit pad will be at least 300 feet outside and away from the native land, and will be located in a leveled, actively farmed, and currently disced field. The depth of the pipeline under the native land is proposed to be at least 35 feet under the deepest Cross Creek drainage bottom. This area of Cross Creek is under jurisdiction of the California Reclamation Board and their minimum depth for drilling under the creek is 30 feet.

Environmental Concerns

The HDD construction method is much less intrusive than the traditional open-cut trenching, in particular through sensitive habitats and waterways. However, the use of HDD includes the potential for spills of drilling mud, “frac-outs” which are a concern when they occur in or near sensitive habitats and waterways. When they occur, frac-outs typically surface near the entrance and/or exit points of the HDD operation. The likelihood of frac-out decreases as the depth of the bore head increases. Inadvertent returns along the pipeline alignment are most likely to occur within 150 feet at either end of the HDD segment where the pipe depth is at its shallowest. The preliminary design profile for the gas pipeline at the Kings River shows it at a depth of approximately 75 feet below Kings River bottom and with setbacks consisting of 200 and 500 feet from the river’s riparian habitat. The preliminary design profile for the gas pipeline at the Cross Creek area shows it at a depth of approximately 35 feet below the deepest drainage bottom, and with setbacks consisting of at least 300 outside and away from either side of the native land. The designed drilling profiles will be established based on geotechnical data collected at each site and will minimize the possibility of frac-outs occurring within areas of sensitive habitat.

Preventive Measures

The following measures primarily focus on prevention of inadvertent returns of drilling mud. These measures include:

- Planning the HDD profile and drilling pressures using site-specific geotechnical data;
- monitoring the location of the drill head with a guidance system;
- monitoring drilling fluid pressure at all times;
- sizing (slowly moving the drill stem forward and backward to better keep track of any potential fracture locations);

Geotechnical borings will provide information regarding proper pipe depth as dictated by the soil strata characterization. The borings will be made in the road right-of-way and just off the pipeline alignment and grouted so as not to create potential frac-out opportunities. The approximate pressures that the soil will bear at various depths will be calculated and will be observed by the HDD contractor in developing a drilling plan. Also, the entrance and exit bore holes at the sites will be grouted after the pipe is installed to prevent water movements thru the soil and the hardpan layers.

A guidance system will be used to track the location of the subsurface drill head. The Tru-Tracker guidance system may be used. Tru-Tracker utilizes a length of wire (the size of home extension cord) placed on opposite sides of the HDD alignment. The alignment is surveyed on-foot by a team of 2 to 3 people. Small amounts of vegetation (i.e., bushes and vines) may be disturbed and/or removed during the survey process in order to lay the cable in a direct line. No trees greater than three inches diameter will be removed and no elderberry bushes will be removed or trimmed. At the Cross Creed area, no vegetation will be removed as the area is road right-of-way. A biologist will be present during this work and survey in front of the team to assess the potential for active bird nests or other relevant wildlife and habitat avoidance issues. Temporary surveyor stakes are placed strategically along the alignment to anchor the Tracker wires. The alignment will be accessed throughout the drilling operation to monitor for frac-outs.

Remedial Action

If a “frac-out” does occur, the contractor will:

(1) Cease pumping of drilling fluids,

(2) notify the on-site Biological Monitor and drilling representative,

(3) Contain and collect any drilling fluid which has surfaced on the ground,

(4) Re-size the hole to displace any objects or restrictions that may prevent the drilling fluid from returning to the entry pit (this requires swabbing the drilled hole and pumping fluid in order to clear any obstructions), and

(5) Proceed with drilling operations. The pressure of water/soil above the pipe keeps excess mud from escaping through the fracture.

The amount of drilling mud that could be lost in the event of an inadvertent return depends on the size of the fracture and amount of head pressure. Diligent monitoring, early detection, and quick response will ensure that the amount of escaping mud will be kept to a minimum.

Frac-Out Control and Clean-Up Measures

A Biological Monitor will be on site during HDD operations, conducting inspections for frac-outs. The drill rig operator will monitor the operation for loss of drilling fluid pressure and volume. A loss in pressure is typically an indication that the drilling mud has escaped the bore tunnel and may have or may soon frac-out on the surface. Remedial actions will be implemented if a frac-out is observed or a loss in pressure is detected. Along with the Biological Monitor, the HDD crew will be responsible for

continuously observing the alignment for indications of frac-outs.

Containment materials such as sand bags, silt fencing, hay bales, and vacuum pumps will be required to be onsite before drilling begins. The Biological Monitor will inspect the pad locations and determine if additional materials are needed to protect sensitive habitats. Silt fencing will be used to define the construction zone limits of the HDD pad locations and to control any sediment from leaving the construction site. Hay bales, sand bags, silt fencing and/or earthen berms will be used to surround and contain drilling mud at the pad sites and in frac-out locations. If a frac-out occurs relatively close to the drilling rig the fluid shall be contained and pumped back to the drilling location with portable pumps for re-use. In areas further away or where pumping back to the drilling rig is not feasible a mobile vacuum pump or vacuum truck will be used collect the drilling mud from the containment area. The mud will then be recycled and sent to the return pit or storage tank. The vacuum truck will be confined to areas of agricultural land or roads, and will not drive within the Cross Creek native land. The crew will walk to the spill area and extend the hose to reach the containment area.

If a frac-out occurs within any of the sensitive habitats along the alignment, the situation will be handled as outlined in the protection/preventative measures. If the release of drilling mud continues and attempts to clear the drilled path are not successful the drill string shall be withdrawn to a point where a new drill path can be established along either a different alignment and/or depth, additional measures will be implemented to ensure containment of the drilling mud. Hay bales, sand bags, and/or silt fencing will be used to contain frac-outs within the sensitive habitats or waterways. The relatively slow and shallow summer water flows in the region should allow for the effective use of these measures. Once the containment measures are in place, the drilling mud can then be pumped into a vacuum truck and taken off-site or recycled to the drill rig return pit. If necessary, an isolation/containment environment, such as an underwater boom and curtain, may be used to contain the mud to be removed. If the fracture becomes excessively large, a spill response team with underwater divers would be called in to contain and clean up the frac-out; however, the waterways are expected to be 1-foot in depth or less at the time (dry season) of HDD activities. The phone numbers of the Biological Monitor and spill response teams will be kept at both HDD pad sites.

Frac-out locations will be restored if the disturbance is significant. If revegetation is necessary it will be done with native species common to the area. The areas will be seeded or planted, depending on the size and location of the disturbed area. The applicable resource and regulatory agencies will be consulted if such an event occurs.

General On-Site Materials Checklist

Types and amounts of materials needed on-site for each HDD shall be identified in the contractors drilling plan. The following is a general list that should cover most HDD project situations:

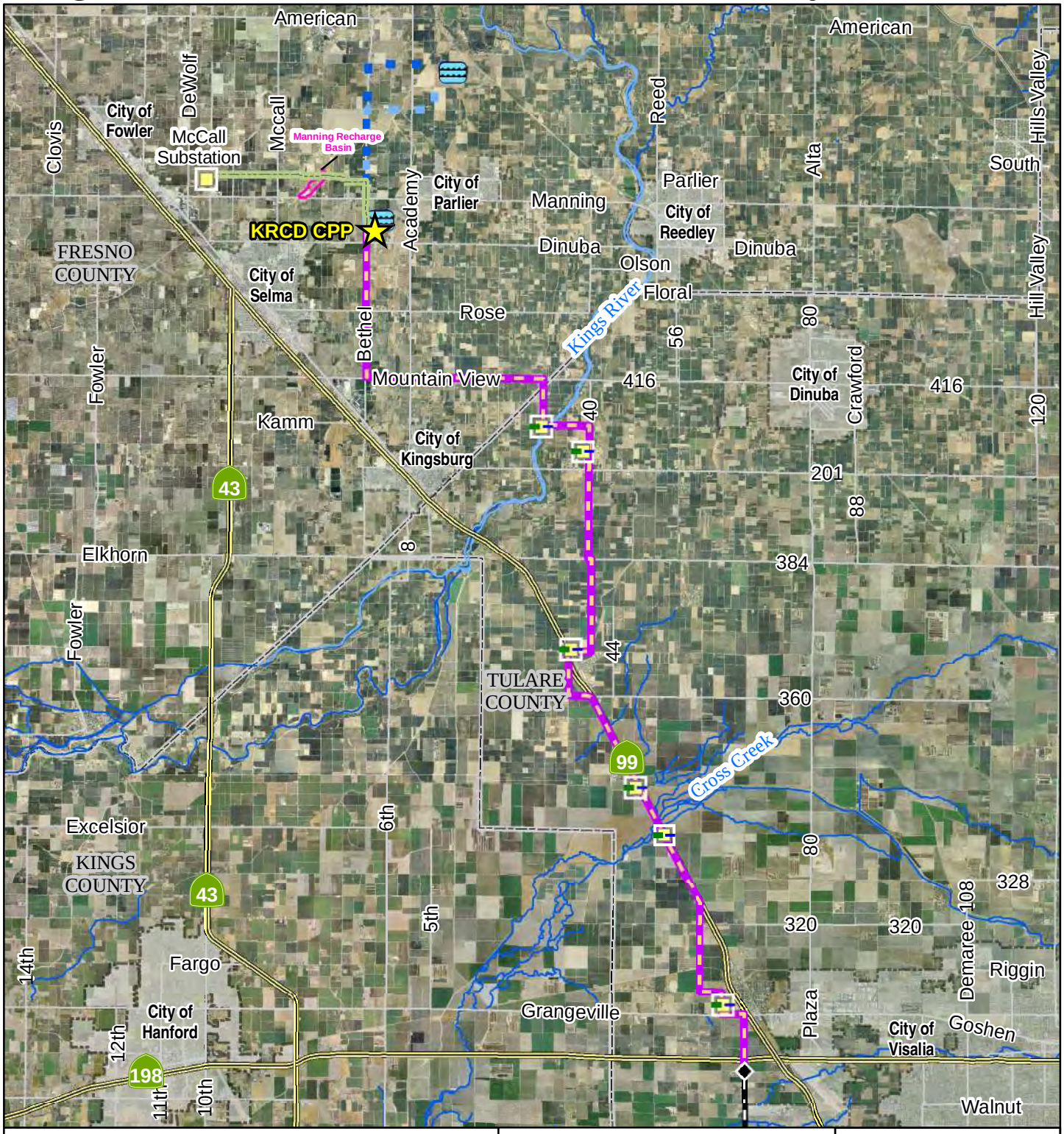
- Industrial grade PVC mesh fencing with steel T-posts
- Large diameter standing pipe material (such as 55-gallon open ended drums, heavy PVC/CMP pipe or culvert type material)
- Heavy weight clean gravel or sand filled bags (recommend minimum of 100)
- Silt fencing (recommend minimum of 300-feet)
- Straw bales
- Straw log or wattles (100 feet recommended)
- Geotech filter bags, 10-by-12-foot size or equivalent

- Several 5-gallon plastic buckets
- Shovels (flat blade and round nose)
- Wide heavy duty push broom
- Absorbent pads and plastic sheeting for placement beneath motorized equipment
- Vacuum hose (100-feet minimum)
- Portable pumps
- Vacuum trucks on stand by (800 and 3000-gallon capacity)
- Baker tanks as needed

Agency Contacts

If a frac-out occurs and is in an area under the jurisdiction of resource and regulatory agencies, they will be notified in accordance with the conditions of the permits by the Biological Monitor within 24 hours of the spill. The agencies (in particular CDFG) may inspect the spill area and suggest alternative containment and clean up measures. Temporary stoppage of drilling activities, spill containment, and clean up will be initiated as soon as a frac-out occurs and will not wait for CDFG notification. Drilling may resume once the biological monitor determines containment and clean up efforts are adequate for protection of biological resources.

Kings River Conservation District Community Power Plant



KRCD Community Power Plant
Freeway
Major Street
City Boundary
County Boundary Line
Substation
Proposed Transmission Line
Waste Water Percolation Ponds
Proposed Water Supply Pipeline - Option 1
Proposed Water Supply Pipeline - Option 2
Natural Gas Connection Point
Proposed Natural Gas Staging / HDD Area
Proposed Natural Gas Pipeline
SoCal Gas 7000 Line
Manning Recharge Basin

Power Plant Overview

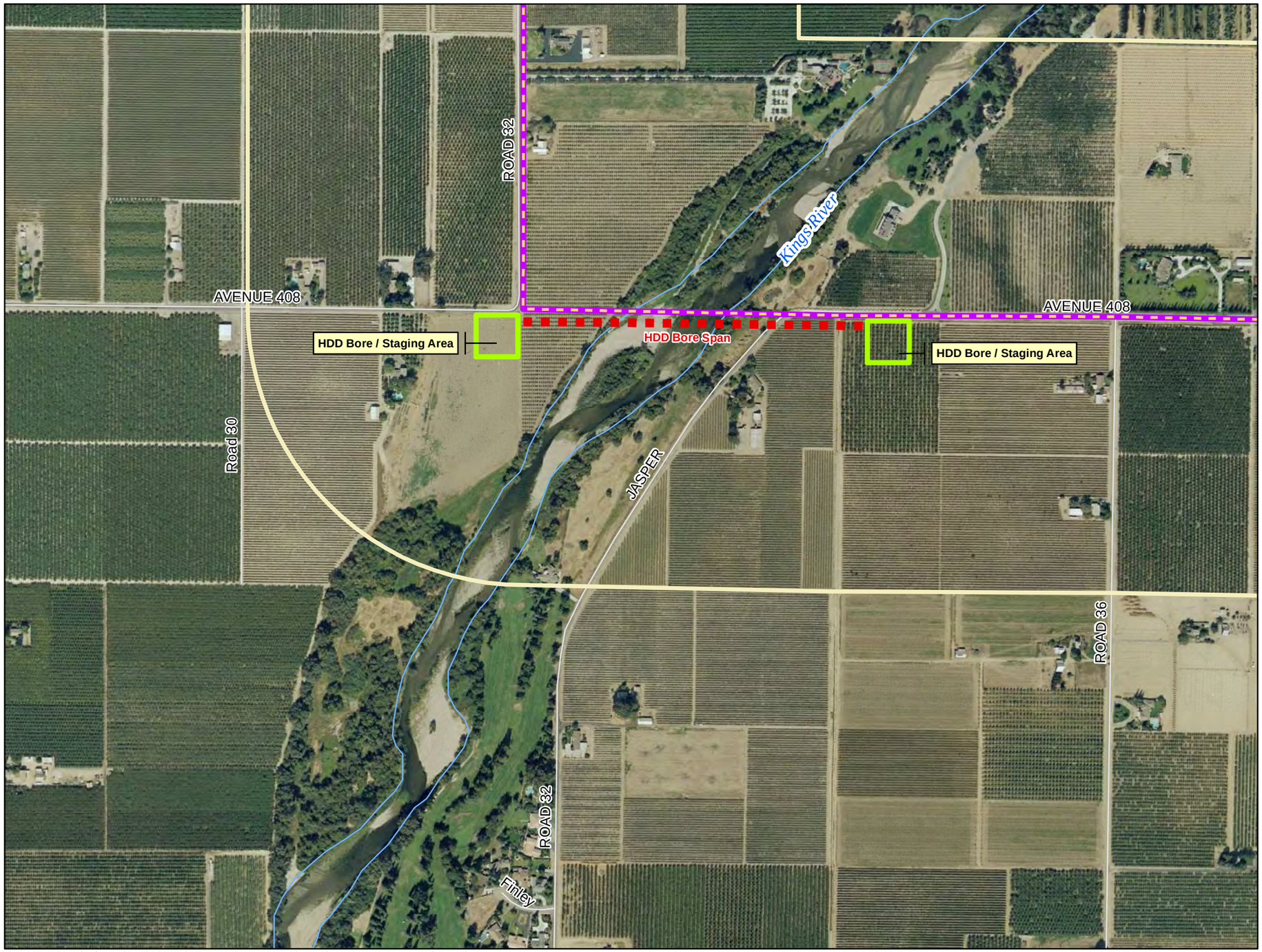
N 0 1 2 3 4 5 Miles

1:200,000 Scale

KRCD Community Power Plant

Energy for our Future

Kings River Conservation District Community Power Plant



KRCD COMMUNITY POWER PLANT

Energy for our Future

Horizontal Directional Drilling
(HDD) Contingency Plan
"Frac-Out Plan"

HDD Bore Work / Staging Area Page 1 of 3

- HDD Bore / Laydown Area
- HDD Bore Span
- Linears 1/4 Mile Buffer
- Proposed Natural Gas Pipeline
- Freeway
- Street
- Railroad
- Waterway
- County Boundary
- City Boundary

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

N

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1:6,000 Scale 1 Inch equals 500 Feet

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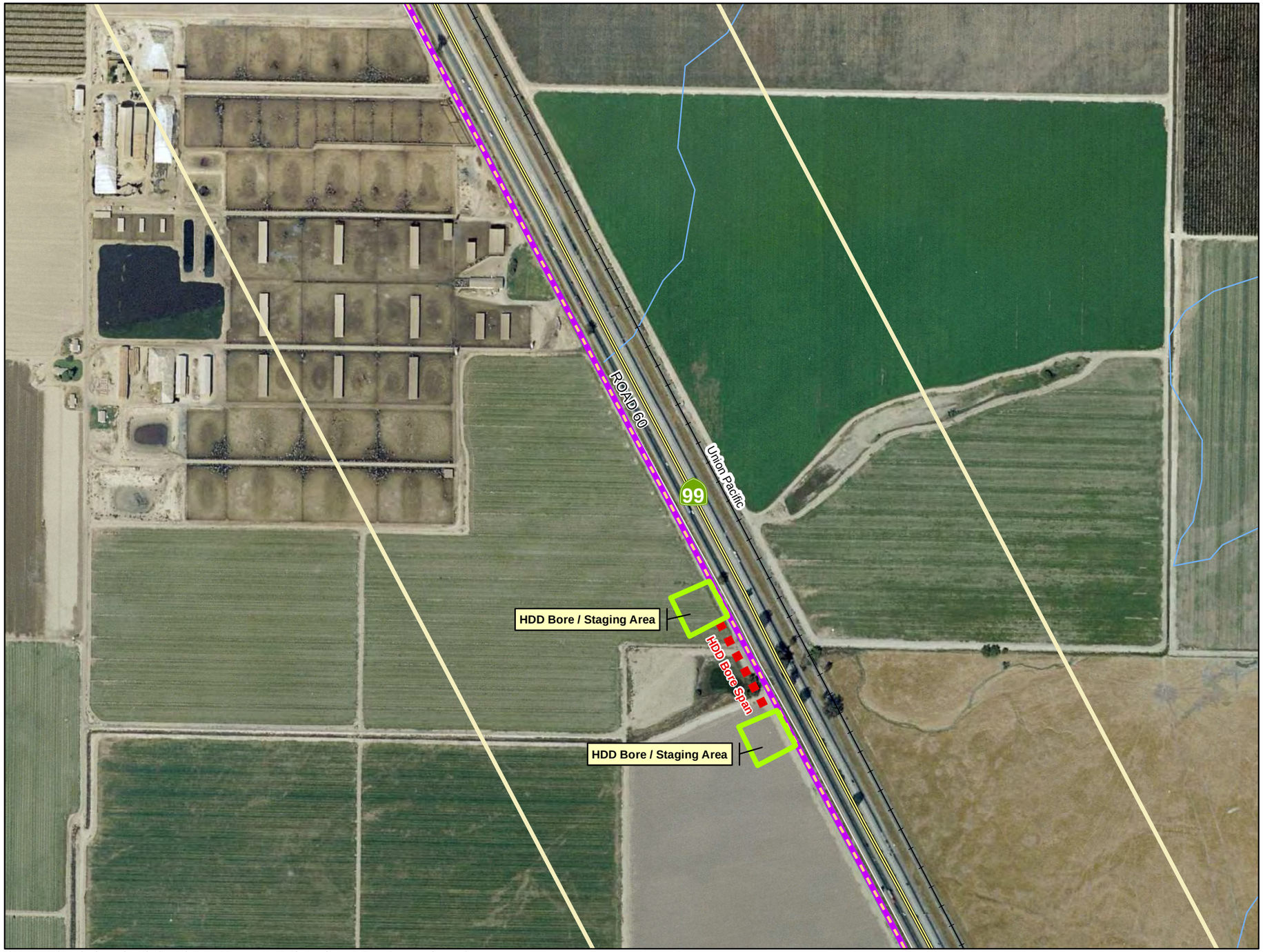
Examples of (HDD) Staging Areas at the Kings River. Photos by H&A in September 2008.

Kings River Conservation District Community Power Plant



KRCD COMMUNITY POWER PLANT

Energy for our Future

Horizontal Directional Drilling
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HDD Bore Work / Staging Area Page 2 of 3

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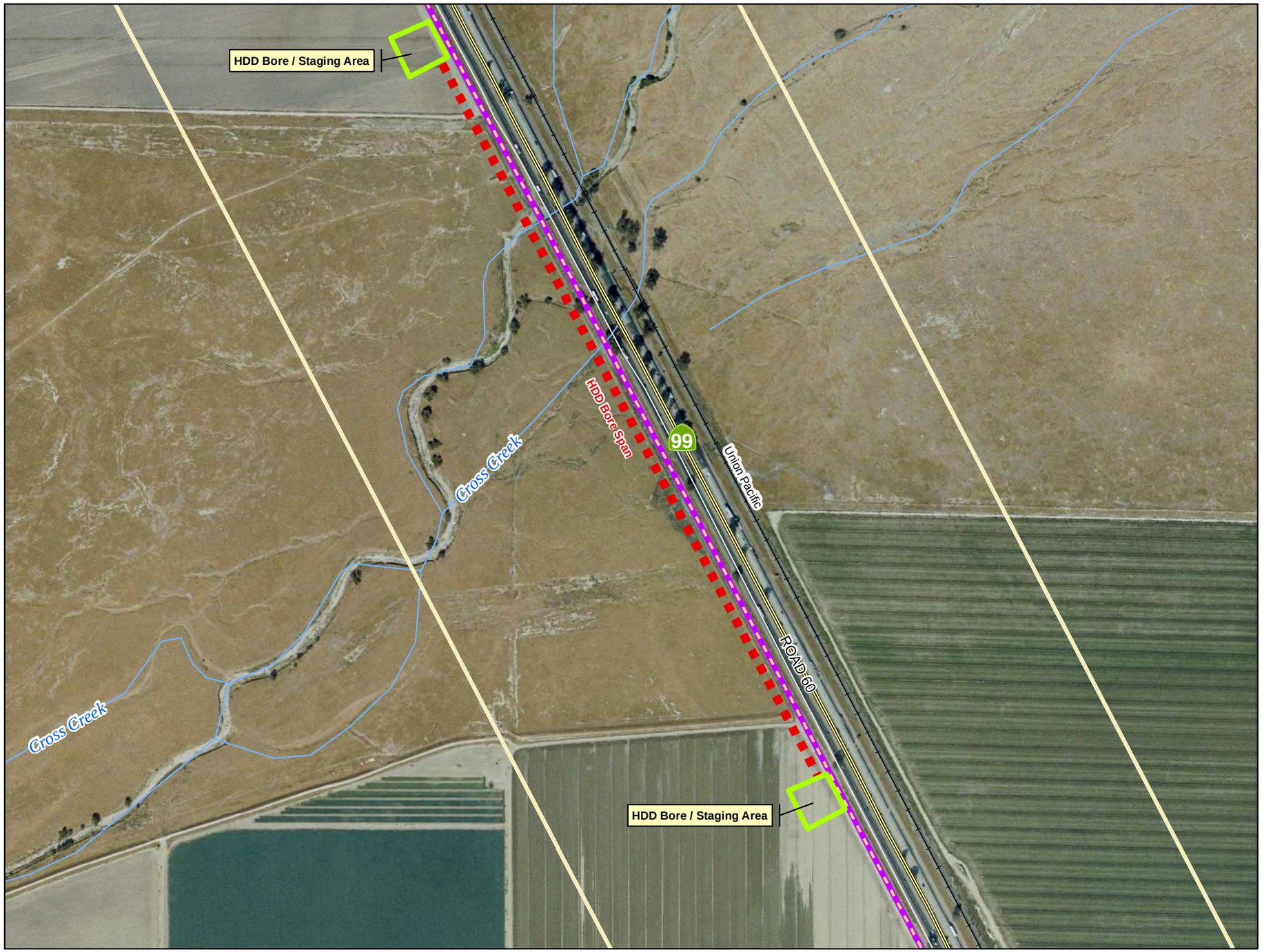
Examples of (HDD) Staging Areas at Cross Creek. Photos by H&A in September 2008.

Kings River Conservation District Community Power Plant



KRCD COMMUNITY POWER PLANT

Energy for our Future

Horizontal Directional Drilling
(HDD) Contingency Plan
"Frac-Out Plan"

HDD Bore Work / Staging Area Page 3 of 3

- HDD Bore / Laydown Area
- HDD Bore Span
- Linears 1/4 Mile Buffer
- Proposed Natural Gas Pipeline
- Freeway
- Street
- Railroad
- Waterway
- County Boundary
- City Boundary

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

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Examples of (HDD) Staging Areas at Cross Creek. Photos by H&A in September 2008.

Preventive Avoidance Measures for Impact Avoidance for HDD Work
Kings River Conservation District - Community Power Plant Project

To avoid impacts to sensitive species, sensitive habitats, and critical habitats for the HDD work, the following preventive avoidance measures are incorporated into the project and will be implemented to avoid and reduce project-related impacts to biological resources to less than significant levels and to ensure the project is not likely to adversely affect such resources. Through the implementation of the preventive avoidance measures denoted below, no take of or significant impacts will occur to sensitive species, sensitive habitats, or critical habitats, and project impacts to biological resources will be less than significant and not likely to adversely affect them. Preventive avoidance measures are presented below for the two sensitive areas where HDD work will occur.

Waters and Wetlands

Two sensitive areas with waters, wetlands, and riparian occur in the project action area where HDD work will occur: (1) Kings River near the City of Kingsburg and (2) Cross Creek near the City of Traver. Measures for each of the two areas are presented below.

Cross Creek Area

The project has been designed so that the pipeline will be bored and run underneath the intermittent drainages. Six intermittent drainages occur in the Cross Creek area that will be underbored by the pipeline. Some of these drainages are wetlands and some are waters. Regardless of their classification, measures are incorporated into the project to avoid and protect them. Also, a couple wetland drainage ponds and vernal pool wetlands occur on private land adjacent to the gas pipeline footprint along Road 60. In one of the wetland ponds, the endangered Vernal Pool Tadpole Shrimp was observed. The preventive measures below will protect and preserve the intermittent drainages, wetlands, waters, critical habitats, endangered shrimp resources, and other potential sensitive species in the Cross Creek area.

CC #1. The gas pipeline shall be bored and installed underneath all intermittent drainages using HDD construction techniques to avoid impacting the integrity and hydrology of the channels. Thus, the channels and their waters and/or wetland habitats will be completely avoided. The equipment use and construction areas shall occur in designated bore areas in agricultural land outside and away from sensitive lands and their sensitive biological resources.

CC #2. A buffer zone of at least 200 feet of no equipment/construction activities shall occur on either side of the two HDD bore areas where HDD construction techniques will be used. The zone shall be measured outward from the top bank of the channel. A qualified biologist shall assist the engineers and construction crews in flagging and staking the buffer zones prior to construction activities.

CC #3. All construction activities near the Cross Creek area shall occur within the

designed HDD work areas.

CC #4. An educational program shall be conducted by a qualified biologist for all project managers, engineers, contractors, and construction crews prior to work to informed them of the wetlands, waters, and wildlife resources on the adjacent private land, the need to avoid damaging any pools, drainages, ponds, and/or the endangered tadpole shrimp, and the possible penalties for not complying with these measures.

CC #5. Orange silt-fence approximately 3 feet in height shall be installed around the HDD work areas prior to and during construction activities in that area. The bottom of the fence shall be buried in the ground approximately 6 inches in depth and the length of the fence shall be securely staked. A qualified biologist shall assist the engineers and construction crews in flagging and staking the location of the fencing prior to construction activities.

CC #6. Signs denoting the adjacent lands as sensitive wetland, waters, and wildlife habitat shall be posted at 100-foot intervals along the silt fence. Signs shall be functional and maintained during construction activities in that area.

CC #7. A qualified biologist shall be on-site at all times during construction in the Cross Creek area and visually view and inspect that the measures are implemented.

CC #8. Drainage culverts and intermittent drainages in the Cross Creek area shall not be altered and will remain at their existing grade to maintain the hydrology and integrity of channels and pools on the adjacent private land.

CC #9. Runoff from the construction zone shall be captured via trenches or other structures and drained away from the adjacent private lands to prevent their contamination.

CC #10. Equipment, materials and supplies, and substances such as fuels, oil, fluids, chemicals, and other such substances which could cause contamination shall not be stored in the Cross Creek area.

CC #11. Standard dust prevention measures (such as use of water spray trucks) shall be implemented during construction in the Cross Creek area to prevent and reduce dust.

CC #12. Upon completion of construction, all project-related fencing and signs shall be removed from the Cross Creek area.

CC #13. Prior to construction, photographs shall be taken by a qualified biologist to document the existing condition of the intermittent drainages, ponds, and vernal pool wetlands. After the completion of construction activities, the same-direction photographs shall be taken for comparative purposes and to document post-construction conditions.

CC #14. A post-construction monitoring survey shall be conducted by a qualified biologist to evaluate the implementation of and compliance with the measures. A report, including the above photographs, shall be prepared and sent to the California Energy Commission upon completion of construction.

CC #15. If intermittent drainages, wetland habitat, or the endangered tadpole shrimp are accidently impacted, state and federal resource and regulatory agencies having jurisdiction over the impacted resource shall be consulted.

Kings River

The project has been designed so that the pipeline will be bored and run underneath the Kings River using HDD techniques to protect and preserve biological resources. Sensitive species do not occur near the Kings River crossing area. Below are preventive avoidance measures to protect and preserve the Kings River and the wetland and riparian habitat along its banks.

KR #1. The gas pipeline shall be bored and installed under the Kings River using HDD techniques to avoid impacting the integrity and hydrology of the river. Thus, the river and its waters, wetland, and riparian habitats will be completely avoided. The equipment use and construction areas will occur in designed HDD work areas in agricultural lands.

KR #2. A 500-foot buffer zone of no equipment/construction activities shall occur on either side of the river where HDD techniques will be used. This buffer zone will avoid all elderberry bushes along the river that are potential habitat for the federally threatened Valley Elderberry Longhorn Beetle. The zone will be measured outward from the outer edge of the river's riparian habitat. A qualified biologist will assist the engineers and construction crews in flagging and staking the buffer zones.

KR #3. An educational program shall be conducted by a qualified biologist for all project managers, engineers, contractors, and construction crews prior to work to inform them of the VELB and its elderberry bush habitat in the Kings River undercrossing area, the need to avoid damaging these resources, and the possible penalties or not complying with the measure.

KR #4. Prior to construction, elderberry bushes will be flagged with yellow cautionary tape and photographs shall be taken by a qualified biologist to document the existing condition of the elderberry bushes in the Kings River undercrossing area. After completion of the construction activities, the same-direction photographs shall be taken for comparative purposes and to document post-construction conditions.

KR #5. A post-construction monitoring survey shall be conducted by a qualified biologist to evaluate the implementation of and compliance with the preventive measures. A report, including the above photographs, shall be prepared and sent to the CEC upon completion of construction.

ATTACHMENT F

Biological Resources Section

of the

KRCD CPP AFC Supplement B

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 water 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 staging areas 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 are 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 alignment. 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 does 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.

ATTACHMENT G

Frac-out Plan for the HDD

Horizontal Directional Drilling (HDD) Contingency Plan for Inadvertent Returns of Drilling Mud

Kings River Conservation District's Community Power Plant near Parlier (Fresno & Tulare Counties)

The Horizontal Directional Drilling (HDD) construction method will be used to place the pipe for the natural gas service lateral supplying the KRCD Community Power Plant (CPP) at crossings under the Kings River (Fresno County, CA) and at Cross Creek (Tulare County, CA). The HDD construction method is much less intrusive than the traditional open-cut trenching, in particular through sensitive habitats and waterways. The HDD method has been chosen to install the natural gas pipeline at these areas to avoid any impacts to sensitive habitats, plants, and wildlife and to protect and preserve the environmental resources.

HDD requires a drilling lubricant or "mud", slurry of bentonite clay, to enable and maintain the bore tunnel. Quantities of the drilling fluid escaping from the bore hole can damage sensitive habitat. The bentonite slurry is non-toxic, but can potentially smother aquatic plants, benthic invertebrates, fish and their eggs, and upland habitats if excessive amounts are discharged.

The pipeline construction contractor will be required to implement the strategies discussed below during HDD activities to minimize the potential for inadvertent returns or "frac-outs" of drilling fluids. These strategies include preventative measures as well as effective containment and clean-up actions if a "frac-out" were to occur. The pipeline construction contractor will be required by the contract to prepare a drilling plan and obtain its approval by the Construction Manager and permitting authorities detailing procedures for preventing loss of drilling mud and mitigating any mud loss incidents that do occur.

HDD Locations and Methods

The pipeline alignment extends from an existing Southern California Gas Company pipeline south of Highway 198 west of Visalia, CA in a northerly direction to the site of the KRCD Community Power Plant near Parlier, CA. Three HDD installations are planned. One will occur under the Kings River near Kingsburg and the other two will occur under the intermittent drainages and native land of Cross Creek west of Highway 99 south of Traver, CA. Standard HDD methods will be used to install the pipeline under the waterways to avoid potential impacts to these sensitive habitats and their sensitive plant and wildlife resources.

Site 1: Kings River Crossing

The HDD operation will require the set up of pads on both ends of the bore tunnel under the Kings River (See attached map, Page 1 of 3). The pads will be approximately 150 by 150 feet in size. Most likely, the entrance of the drill will be located west of the river, with the welded segments of pipe to be placed under the river in an easterly direction. The entrance pad will be approximately 500 feet outside and away from the Kings River riparian zone, and will be located in a leveled and actively farmed alfalfa field. The exit pad will be approximately 500 feet outside and away from the Kings River riparian zone, and will be located in an actively farmed peach orchard. The depth of the pipeline under the Kings River is proposed to be 75 feet under the river bottom.

Site 2: Cross Creek Channels

The HDD operation will require the set up of pads on both ends of the bore tunnel under the Cross Creek area in each of two locales known as 1) the northern Cross Creek area and 2) the southern Cross Creek area. Each of the areas is described below.

Northern Cross Creek Area. -The northern area involves installation of the pipe under an isolated intermittent drainage of Cross Creek (See attached map, Page 2 of 3). The drainage runs under the Santa Fe Railroad tracks and Highway 99 from the east and then empties into a small, dead-end, farm water-regulation pond. The HDD operation will require set up pads on both ends of the bore tunnel under the Kings River (See attached map, Page 2 of 3). The pads will be approximately 150 by 150 feet in size. Most likely, the entrance of the drill will be located south of the drainage, with the welded segments of pipe to be placed under the river in a northerly direction. The entrance pad will be approximately 175 feet or more away from the drainage and pond, and will be located in a leveled, actively farmed, and currently disced field. The exit pad will be approximately 175 feet or more away from the drainage and pond, and will be located in a leveled, actively farmed, and currently disced field. The depth of the pipeline under the drainage is proposed to be at least 35 feet under the deepest Cross Creek drainage bottom.

Southern Cross Creek Area. - The southern area involves installation of the pipe under a 3,000-foot wide, native land area of Cross Creek that has five intermittent drainages, sensitive wildlife and plant resources, waters, wetlands, and critical habitats for sensitive species and habitats. The HDD operation will require set up pads on both ends of the bore tunnel under the native land (See attached map, Page 3 of 3). The pads will be approximately 150 by 150 feet in size. Most likely, the entrance of the drill will be located south of the native land, with the welded segments of pipe to be placed under the native land in a northerly direction. The entrance pad will be at least 300 feet outside and away from the native land, and will be located in a leveled, actively farmed, and currently disced field. The exit pad will be at least 300 feet outside and away from the native land, and will be located in a leveled, actively farmed, and currently disced field. The depth of the pipeline under the native land is proposed to be at least 35 feet under the deepest Cross Creek drainage bottom. This area of Cross Creek is under jurisdiction of the California Reclamation Board and their minimum depth for drilling under the creek is 30 feet.

Environmental Concerns

The HDD construction method is much less intrusive than the traditional open-cut trenching, in particular through sensitive habitats and waterways. However, the use of HDD includes the potential for spills of drilling mud, “frac-outs” which are a concern when they occur in or near sensitive habitats and waterways. When they occur, frac-outs typically surface near the entrance and/or exit points of the HDD operation. The likelihood of frac-out decreases as the depth of the bore head increases. Inadvertent returns along the pipeline alignment are most likely to occur within 150 feet at either end of the HDD segment where the pipe depth is at its shallowest. The preliminary design profile for the gas pipeline at the Kings River shows it at a depth of approximately 75 feet below Kings River bottom and with setbacks consisting of 200 and 500 feet from the river’s riparian habitat. The preliminary design profile for the gas pipeline at the Cross Creek area shows it at a depth of approximately 35 feet below the deepest drainage bottom, and with setbacks consisting of at least 300 outside and away from either side of the native land. The designed drilling profiles will be established based on geotechnical data collected at each site and will minimize the possibility of frac-outs occurring within areas of sensitive habitat.

Preventive Measures

The following measures primarily focus on prevention of inadvertent returns of drilling mud. These measures include:

- Planning the HDD profile and drilling pressures using site-specific geotechnical data;
- monitoring the location of the drill head with a guidance system;
- monitoring drilling fluid pressure at all times;
- sizing (slowly moving the drill stem forward and backward to better keep track of any potential fracture locations);

Geotechnical borings will provide information regarding proper pipe depth as dictated by the soil strata characterization. The borings will be made in the road right-of-way and just off the pipeline alignment and grouted so as not to create potential frac-out opportunities. The approximate pressures that the soil will bear at various depths will be calculated and will be observed by the HDD contractor in developing a drilling plan. Also, the entrance and exit bore holes at the sites will be grouted after the pipe is installed to prevent water movements thru the soil and the hardpan layers.

A guidance system will be used to track the location of the subsurface drill head. The Tru-Tracker guidance system may be used. Tru-Tracker utilizes a length of wire (the size of home extension cord) placed on opposite sides of the HDD alignment. The alignment is surveyed on-foot by a team of 2 to 3 people. Small amounts of vegetation (i.e., bushes and vines) may be disturbed and/or removed during the survey process in order to lay the cable in a direct line. No trees greater than three inches diameter will be removed and no elderberry bushes will be removed or trimmed. At the Cross Creed area, no vegetation will be removed as the area is road right-of-way. A biologist will be present during this work and survey in front of the team to assess the potential for active bird nests or other relevant wildlife and habitat avoidance issues. Temporary surveyor stakes are placed strategically along the alignment to anchor the Tracker wires. The alignment will be accessed throughout the drilling operation to monitor for frac-outs.

Remedial Action

If a “frac-out” does occur, the contractor will:

(1) Cease pumping of drilling fluids,

(2) notify the on-site Biological Monitor and drilling representative,

(3) Contain and collect any drilling fluid which has surfaced on the ground,

(4) Re-size the hole to displace any objects or restrictions that may prevent the drilling fluid from returning to the entry pit (this requires swabbing the drilled hole and pumping fluid in order to clear any obstructions), and

(5) Proceed with drilling operations. The pressure of water/soil above the pipe keeps excess mud from escaping through the fracture.

The amount of drilling mud that could be lost in the event of an inadvertent return depends on the size of the fracture and amount of head pressure. Diligent monitoring, early detection, and quick response will ensure that the amount of escaping mud will be kept to a minimum.

Frac-Out Control and Clean-Up Measures

A Biological Monitor will be on site during HDD operations, conducting inspections for frac-outs. The drill rig operator will monitor the operation for loss of drilling fluid pressure and volume. A loss in pressure is typically an indication that the drilling mud has escaped the bore tunnel and may have or may soon frac-out on the surface. Remedial actions will be implemented if a frac-out is observed or a loss in pressure is detected. Along with the Biological Monitor, the HDD crew will be responsible for

continuously observing the alignment for indications of frac-outs.

Containment materials such as sand bags, silt fencing, hay bales, and vacuum pumps will be required to be onsite before drilling begins. The Biological Monitor will inspect the pad locations and determine if additional materials are needed to protect sensitive habitats. Silt fencing will be used to define the construction zone limits of the HDD pad locations and to control any sediment from leaving the construction site. Hay bales, sand bags, silt fencing and/or earthen berms will be used to surround and contain drilling mud at the pad sites and in frac-out locations. If a frac-out occurs relatively close to the drilling rig the fluid shall be contained and pumped back to the drilling location with portable pumps for re-use. In areas further away or where pumping back to the drilling rig is not feasible a mobile vacuum pump or vacuum truck will be used collect the drilling mud from the containment area. The mud will then be recycled and sent to the return pit or storage tank. The vacuum truck will be confined to areas of agricultural land or roads, and will not drive within the Cross Creek native land. The crew will walk to the spill area and extend the hose to reach the containment area.

If a frac-out occurs within any of the sensitive habitats along the alignment, the situation will be handled as outlined in the protection/preventative measures. If the release of drilling mud continues and attempts to clear the drilled path are not successful the drill string shall be withdrawn to a point where a new drill path can be established along either a different alignment and/or depth, additional measures will be implemented to ensure containment of the drilling mud. Hay bales, sand bags, and/or silt fencing will be used to contain frac-outs within the sensitive habitats or waterways. The relatively slow and shallow summer water flows in the region should allow for the effective use of these measures. Once the containment measures are in place, the drilling mud can then be pumped into a vacuum truck and taken off-site or recycled to the drill rig return pit. If necessary, an isolation/containment environment, such as an underwater boom and curtain, may be used to contain the mud to be removed. If the fracture becomes excessively large, a spill response team with underwater divers would be called in to contain and clean up the frac-out; however, the waterways are expected to be 1-foot in depth or less at the time (dry season) of HDD activities. The phone numbers of the Biological Monitor and spill response teams will be kept at both HDD pad sites.

Frac-out locations will be restored if the disturbance is significant. If revegetation is necessary it will be done with native species common to the area. The areas will be seeded or planted, depending on the size and location of the disturbed area. The applicable resource and regulatory agencies will be consulted if such an event occurs.

General On-Site Materials Checklist

Types and amounts of materials needed on-site for each HDD shall be identified in the contractors drilling plan. The following is a general list that should cover most HDD project situations:

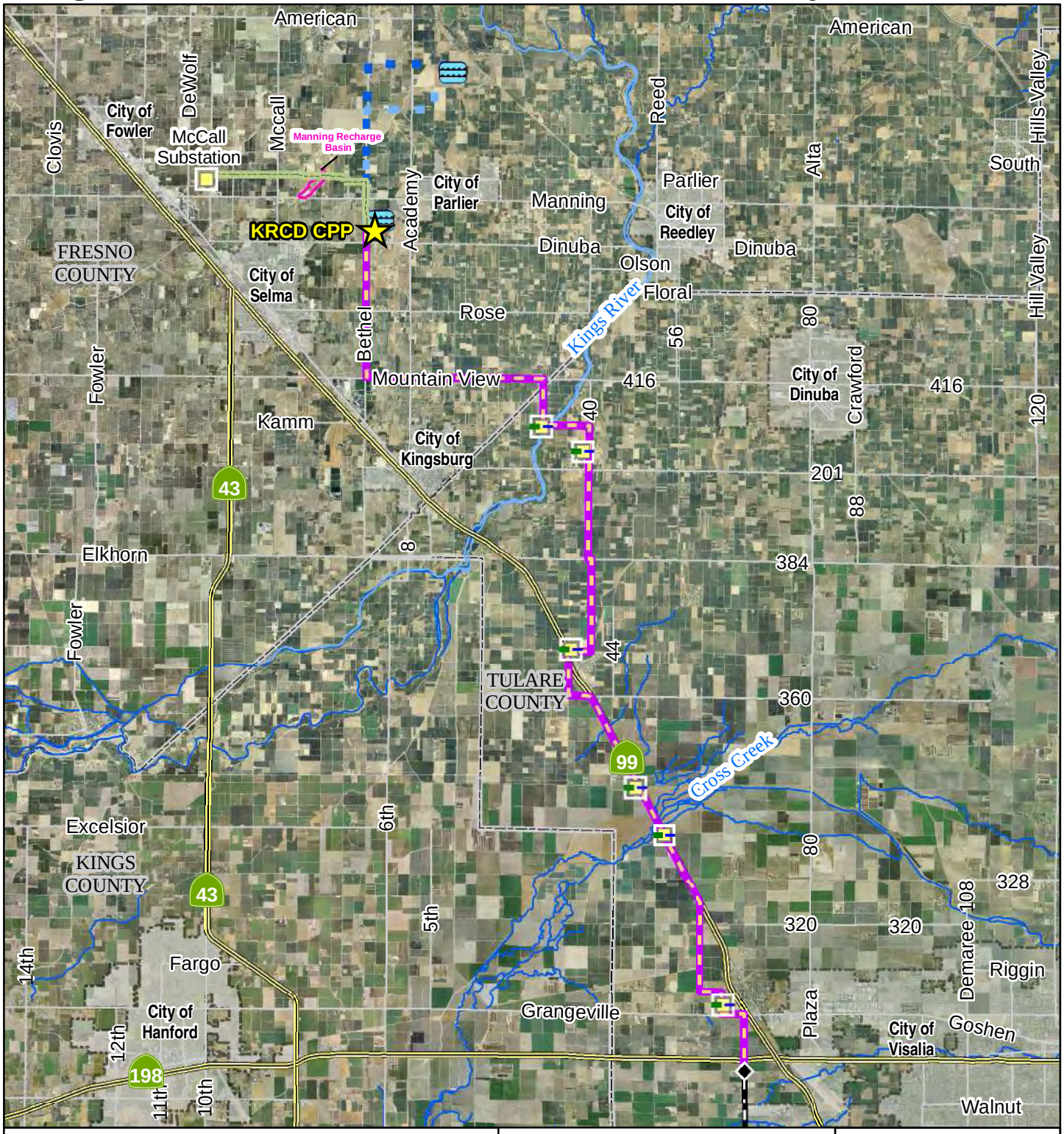
- Industrial grade PVC mesh fencing with steel T-posts
- Large diameter standing pipe material (such as 55-gallon open ended drums, heavy PVC/CMP pipe or culvert type material)
- Heavy weight clean gravel or sand filled bags (recommend minimum of 100)
- Silt fencing (recommend minimum of 300-feet)
- Straw bales
- Straw log or wattles (100 feet recommended)
- Geotech filter bags, 10-by-12-foot size or equivalent

- Several 5-gallon plastic buckets
- Shovels (flat blade and round nose)
- Wide heavy duty push broom
- Absorbent pads and plastic sheeting for placement beneath motorized equipment
- Vacuum hose (100-feet minimum)
- Portable pumps
- Vacuum trucks on stand by (800 and 3000-gallon capacity)
- Baker tanks as needed

Agency Contacts

If a frac-out occurs and is in an area under the jurisdiction of resource and regulatory agencies, they will be notified in accordance with the conditions of the permits by the Biological Monitor within 24 hours of the spill. The agencies (in particular CDFG) may inspect the spill area and suggest alternative containment and clean up measures. Temporary stoppage of drilling activities, spill containment, and clean up will be initiated as soon as a frac-out occurs and will not wait for CDFG notification. Drilling may resume once the biological monitor determines containment and clean up efforts are adequate for protection of biological resources.

Kings River Conservation District Community Power Plant



KRCD Community Power Plant
Freeway
Major Street
City Boundary
County Boundary Line
Substation
Proposed Transmission Line
Waste Water Percolation Ponds
Proposed Water Supply Pipeline - Option 1
Proposed Water Supply Pipeline - Option 2
Natural Gas Connection Point
Proposed Natural Gas Staging / HDD Area
Proposed Natural Gas Pipeline
SoCal Gas 7000 Line
Manning Recharge Basin

Power Plant Overview

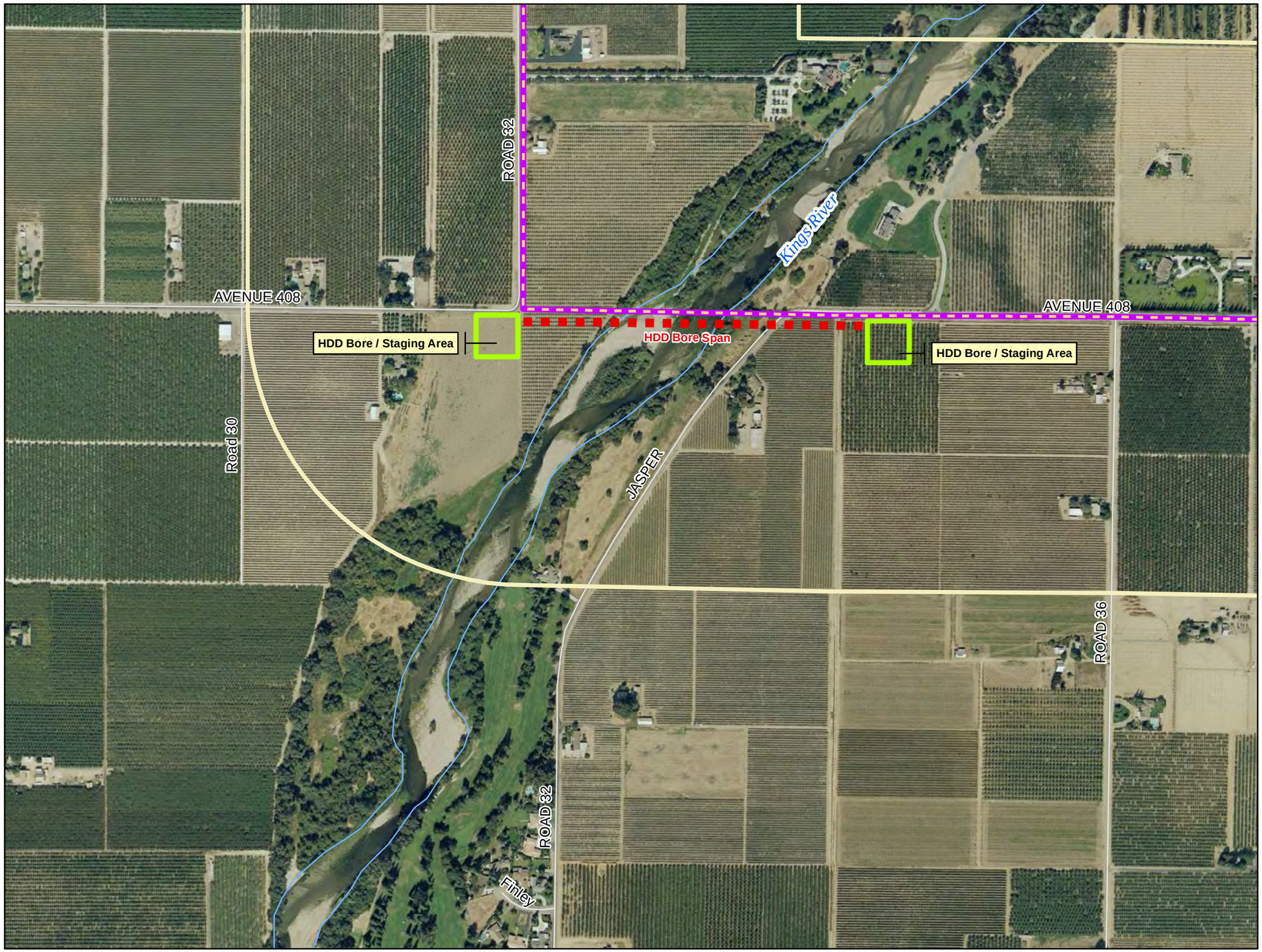
N 0 1 2 3 4 5 Miles

1:200,000 Scale

KRCD Community Power Plant

Energy for our Future

Kings River Conservation District Community Power Plant



KRCD COMMUNITY POWER PLANT

Energy for our Future

Horizontal Directional Drilling
(HDD) Contingency Plan
"Frac-Out Plan"

HDD Bore Work / Staging Area Page 1 of 3

- HDD Bore / Laydown Area
- HDD Bore Span
- Linears 1/4 Mile Buffer
- Proposed Natural Gas Pipeline
- Freeway
- Street
- Railroad
- Waterway
- County Boundary
- City Boundary

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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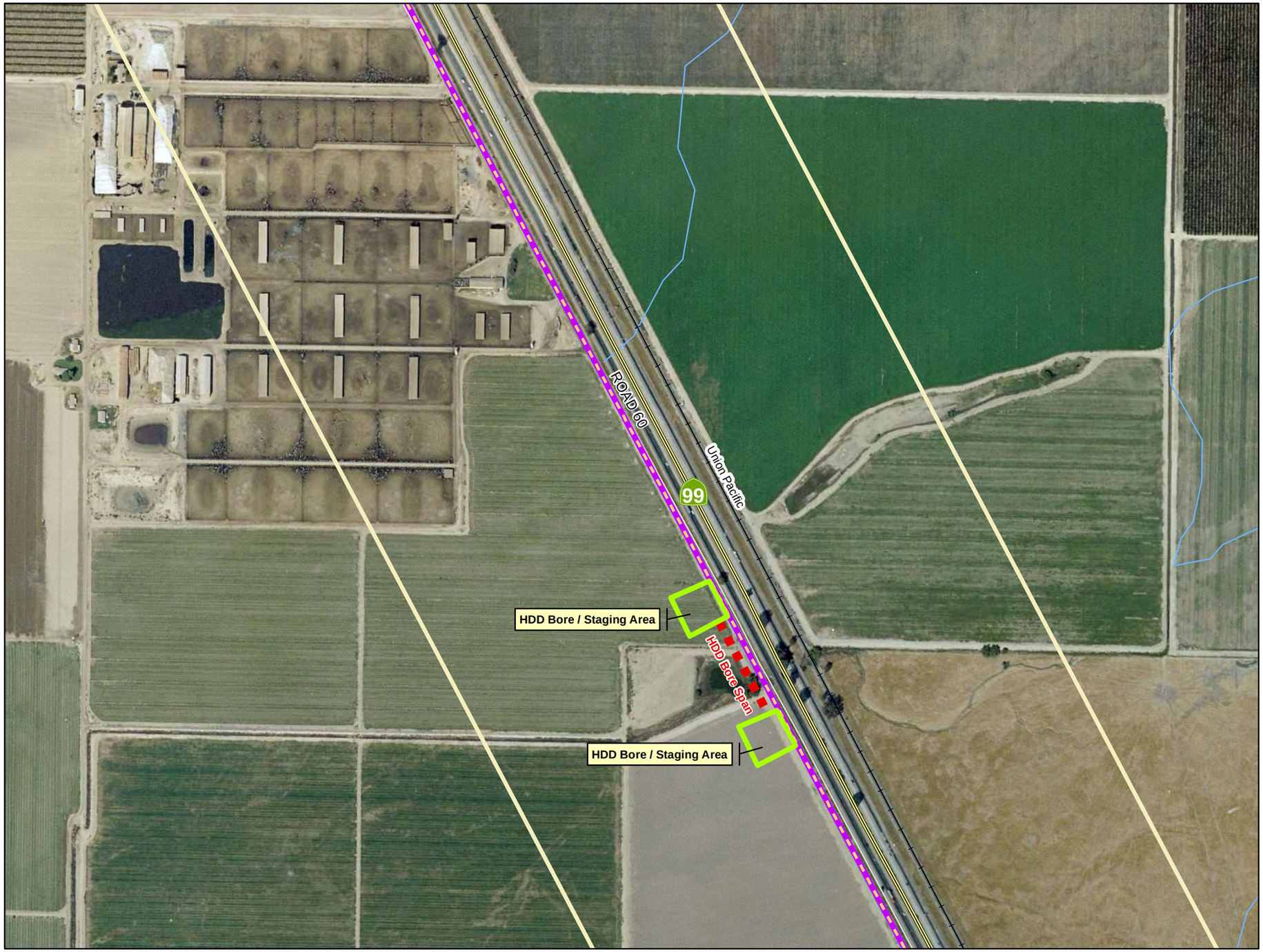
Kings River Conservation District Community Power Plant



KRCD COMMUNITY POWER PLANT

Energy for our Future

Horizontal Directional Drilling
(HDD) Contingency Plan
"Frac-Out Plan"

HDD Bore Work / Staging Area Page 2 of 3

- HDD Bore / Laydown Area
- HDD Bore Span
- Linears 1/4 Mile Buffer
- Proposed Natural Gas Pipeline
- Freeway
- Street
- Railroad
- Waterway
- County Boundary
- City Boundary

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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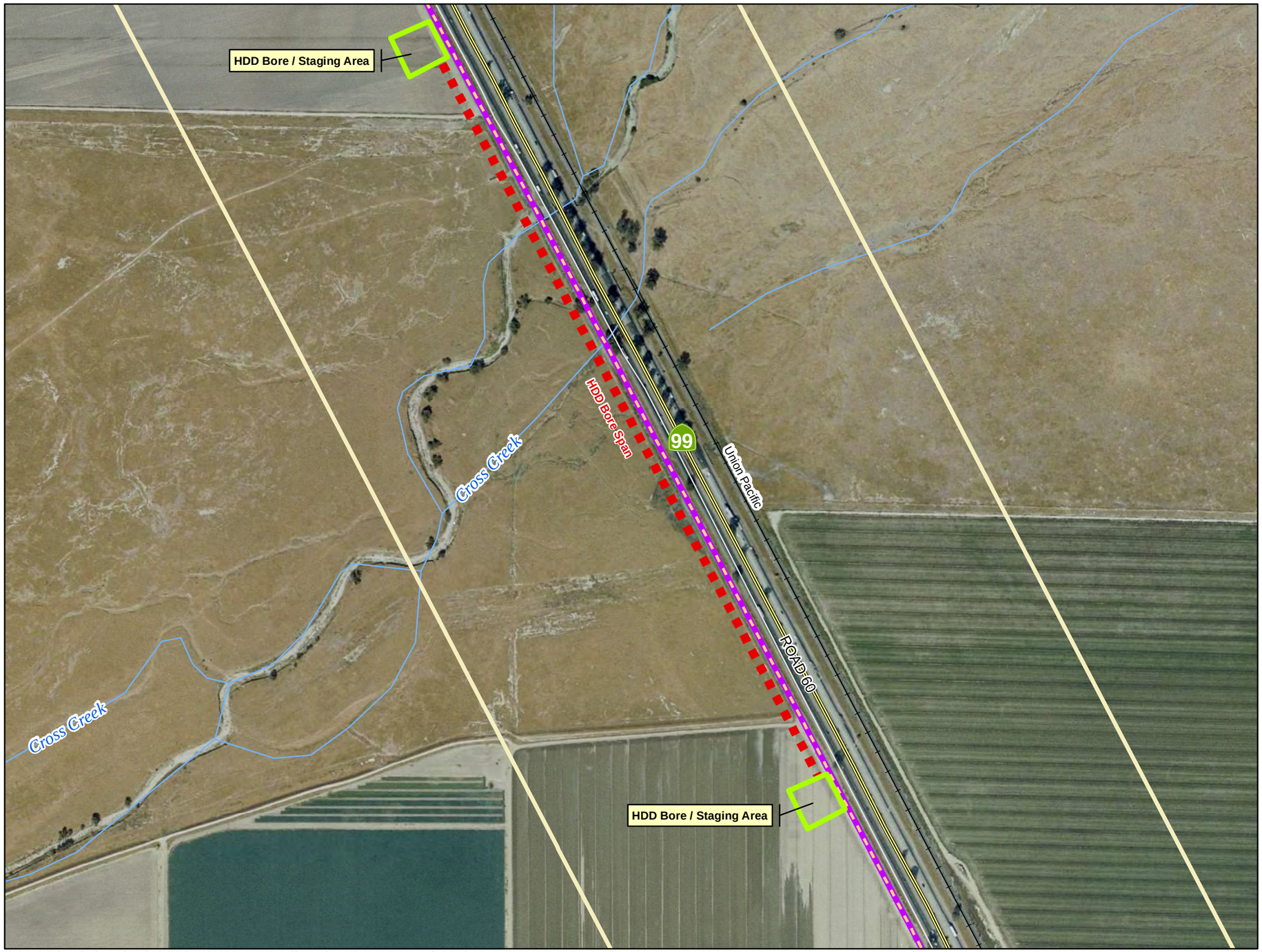
Kings River Conservation District Community Power Plant



KRCD COMMUNITY POWER PLANT

Energy for our Future

Horizontal Directional Drilling
(HDD) Contingency Plan
"Frac-Out Plan"

HDD Bore Work / Staging Area Page 3 of 3

- HDD Bore / Laydown Area
- HDD Bore Span
- Linears 1/4 Mile Buffer
- Proposed Natural Gas Pipeline
- Freeway
- Street
- Railroad
- Waterway
- County Boundary
- City Boundary

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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ATTACHMENT H

Memo Regarding the VELB Surveys and

Elderberry Bush Mapping at the Kings River

HALSTEAD & ASSOCIATES
Environmental / Biological Consultants
296 Burgan Avenue, Clovis, CA 93611
Office (559) 298-2334; Mobile (559) 970-2875
Fax (559) 322-0769; HalsteadEnv@aol.com

Memo

Date: September 9, 2008

To: Mr. Taylor Matteson (Kings River Conservation District)

Reg: **Valley Elderberry Longhorn Beetle Surveys and Elderberry Bush Mapping for the Natural Gas Pipeline Underboring of the Kings River near Kingsburg (Kings River Conservation District's Community Power Plant Project near Parlier)**

At the March 6, 2008 Data Response and Issues Identification workshop, the California Energy Commission (CEC) staff biologist Mr. Brian McCullough requested that field surveys for the Valley Elderberry Longhorn Beetle (VELB) be conducted, survey results reported, and that elderberry bush habitat be mapped where the natural gas pipeline with be bored and installed under the river using horizontal directional drilling (HDD) techniques. The river underboring site is located approximately 3 miles northeast of Kingsburg and just north of the Kingsburg Golf Course (Fresno County, California). Specifically, the site occurs along Avenue 408 at the Kings River in Section 17, Township 16S, Range 23E, of the Reedley 7.5 minute quadrangle map of the U. S. Geological Survey. An aerial map showing the pipeline underboring route and the HDD work/laydown areas is attached. This memo presents the results of our findings for the VELB survey and the elderberry bush mapping as requested by the CEC.

On September 4, 2008, Mr. Jeff Halstead and Mr. Andrew Roberts of Halstead & Associates conducted the requested surveys for the VELB and mapped elderberry bush habitat at the Kings River underboring area. The survey included a 600-foot wide zone on both sides of the river and all elderberry bushes were visually checked. The area surveyed included 300 feet on either side of the proposed alignment of the gas pipeline. Three elderberry bushes where found in riparian habitat along the east side of the Kings River. Seven elderberry bushes or clumps of bushes where found in riparian habitat along the west side of the Kings River. The bushes have hundreds of stems, are healthy, and occur upon the upper banks of the river. A table describing the elderberry bushes and their locations is attached. The location of the elderberry bushes were recorded with a hand-held GPS unit and mapped upon a project aerial map. A map showing the location of the elderberry bushes is attached. Elderberry bushes

and their stems and trunks were examined for the VELB and its emergence hole evidence, but none were found. We conclude that the elderberry bushes near the Kings River underboring area are not inhabited by the VELB.

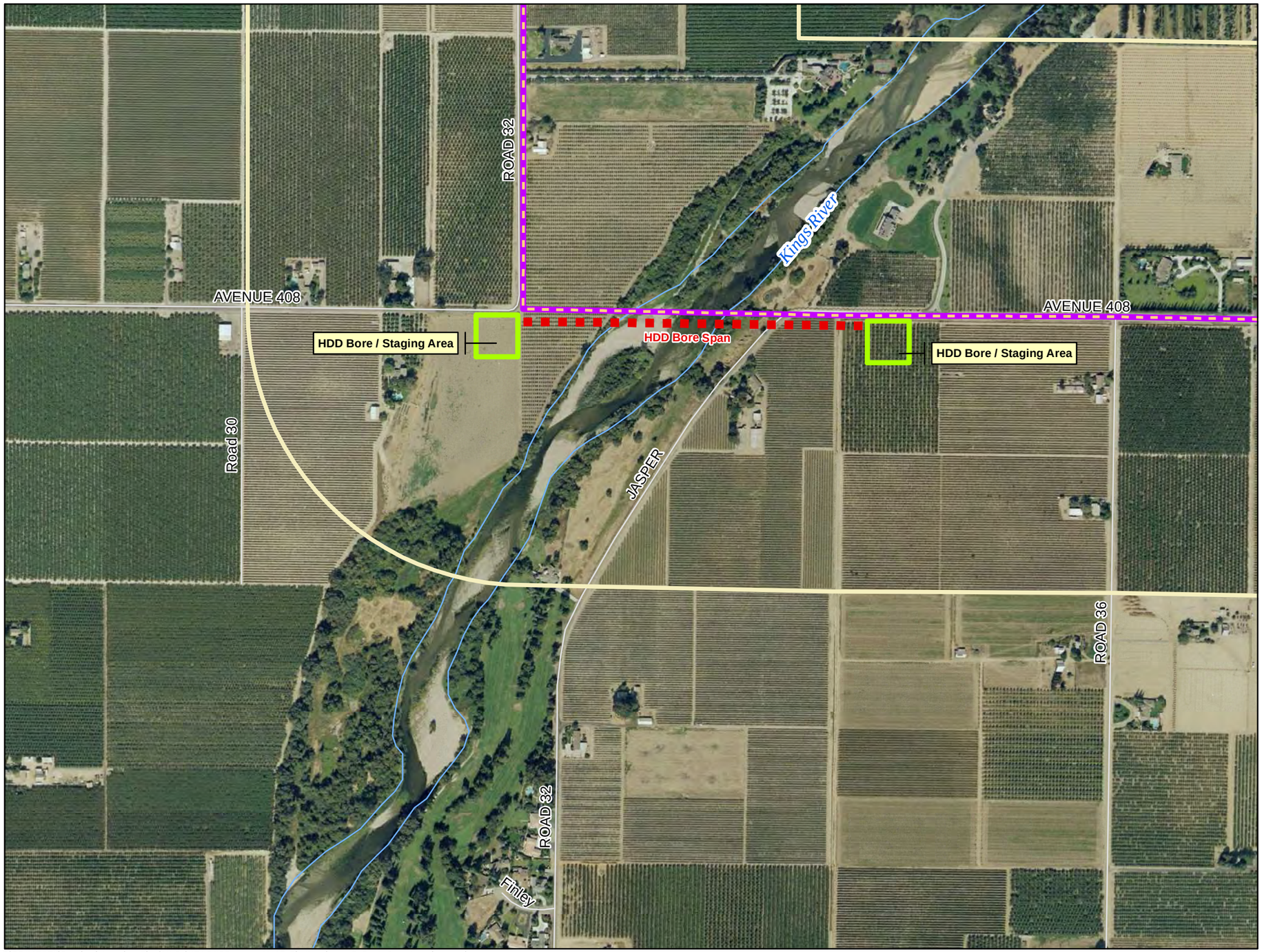
All construction activities for the Kings River underboring will occur outside of and away from the riparian and elderberry bush habitat of the river. An additional 500-foot no activity buffer zone will also occur outward from the edge of the riparian habitat. HDD work areas or laydown areas are shown on an attached map, and they occur in actively farmed agricultural lands. The eastern HDD work area or laydown area is a peach orchard and the western HDD work area or laydown area is an alfalfa field. Lands surround the HDD work areas are actively farmed agricultural land. We conclude that impacts to the VELB or its elderberry bush habitat will occur as a result of the KRCD CPP.

Sincerely,

Jeffrey A. & Pamela S. Halstead
Owners/Partners/Biologists

cc: Ms. Amy Cuellar (Navigant Consulting, Inc.)

Kings River Conservation District Community Power Plant



KRCD COMMUNITY POWER PLANT

Energy for our Future

Horizontal Directional Drilling
(HDD) Contingency Plan
"Frac-Out Plan"

HDD Bore Work / Staging Area Page 1 of 3

- HDD Bore / Laydown Area
- HDD Bore Span
- Linears 1/4 Mile Buffer
- Proposed Natural Gas Pipeline
- Freeway
- Street
- Railroad
- Waterway
- County Boundary
- City Boundary

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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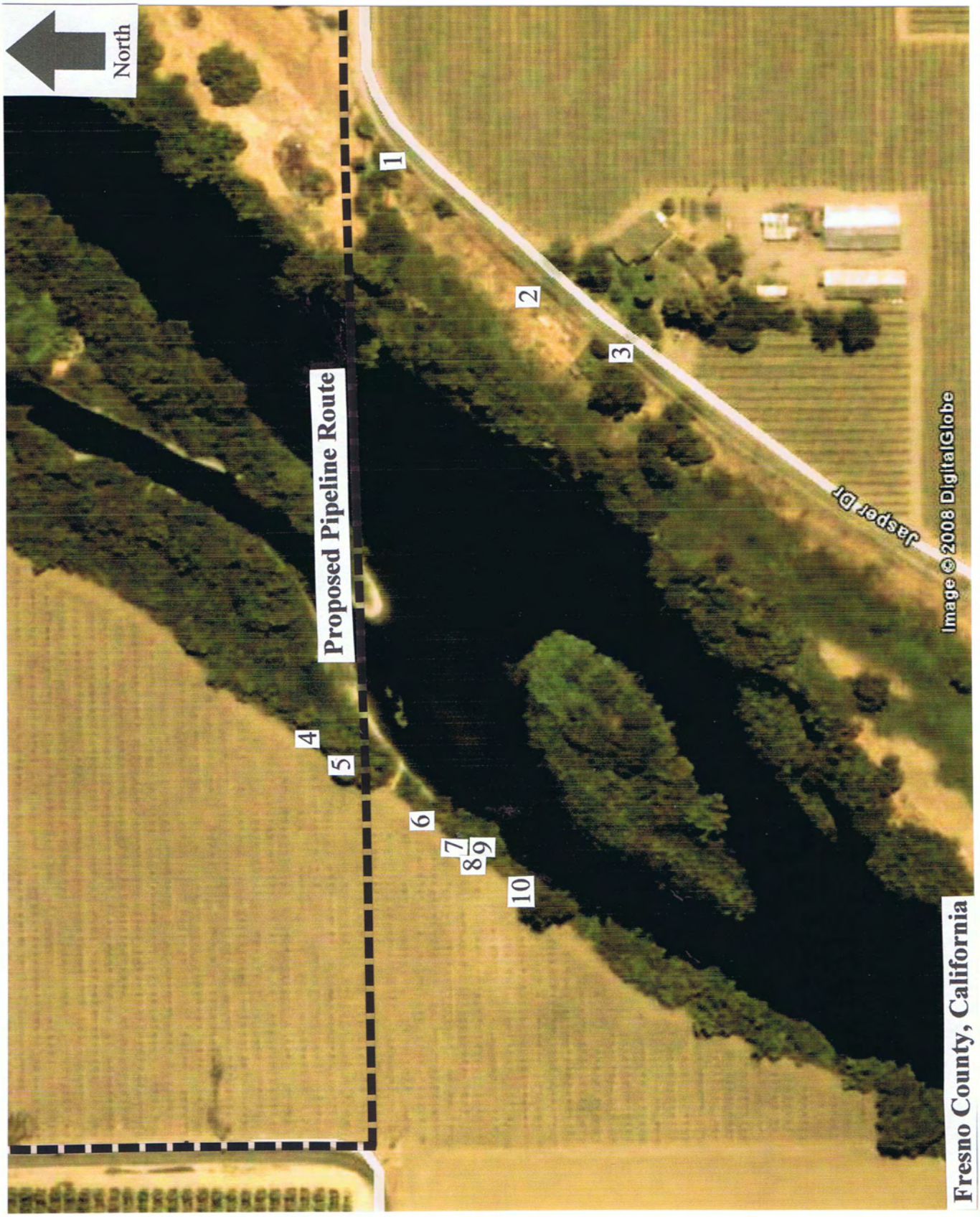

HALSTEAD & ASSOCIATES
Endangered Species / Environmental Consultants
296 Burgan Avenue, Clovis, CA 93611

Elderberry Bush Location Map

Description of Elderberry Bushes at KRCD's CPP Gas Pipeline Undercrossing of the Kings River (Near Kingsburg, Fresno County, California)

Bush Identity #	Bush Height (feet)	Bush Length (feet)	Bush Width (feet)	No. Stems 1 - 3 " Diameter	No. Stems > 3 - 5 " Diameter	No. Stems > 5 " Diameter	Beetle Exit Holes / #	Bush Growth Form	Bush Health *	Bush Location (Longitude)	Bush Location (Latitude)
1	30	50	50	100	40	20	--	clump	fair	119° 29.945' W	36° 31.926' N
2	6	5	5	3	--	--	--	bush	excellent	119° 29.982' W	36° 31.900' N
3	20	20	20	20	4	--	--	bush	fair	119° 29.991' W	36° 31.883" N
4	8	6	6	3	--	--	--	bush	fair	119° 30.095' W	36° 31.943' N
5	20	30	45	20	12	8	--	clump	fair	119° 30.099' W	36° 31.938" N
6	20	45	30	25	12	8	--	clump	fair	119° 30.113' W	36° 31.924' N
7	15	15	15	10	1	1	--	bush	fair	119° 30.125' W	36° 31.911' N
8	15	24	15	10	4	1	--	bush	fair	119° 30.122' W	36° 31.912' N
9	12	10	10	10	--	--	--	bush	fair	119° 30.126' W	36° 31.910' N
10	18	42	45	15	5	4	--	clump	fair	119° 30.130' W	36° 31.903' N