RECLAMATION
Managing Water in the West

FINDING OF NO SIGNIFICANT IMPACT

Long-Term Warren Act Contract with Cawelo Water District

FONSI-06-066

Recommended by:

Date: 11/28/2011

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Introduction

In accordance with section 102(2)(c) of the National Environmental Policy Act of 1969, as amended, the South-Central California Area Office of the Bureau of Reclamation (Reclamation), has determined that the execution of a 25-year Warren Act (WA) contract to convey up to 20,000 acre-feet (AF) per year of non-Central Valley Project (CVP) water from Cawelo Water District (CWD) to Alameda County Flood Control and Water Conservation District Zone 7 (Zone 7), and the issuance of a right-of-use license to CWD for access across/through Reclamation facilities is not a major Federal action that would significantly affect the quality of the human environment and an Environmental Impact Statement is not required. This Finding of No Significant Impact (FONSI) is supported by Reclamation's Final Environmental Assessment (EA) number EA-06-66, *Long-Term Warren Act Contract with Cawelo Water District*, and is hereby incorporated by reference.

Reclamation provided the public with an opportunity to comment on the Draft EA and Draft FONSI during a 30-day public comment period from December 6, 2010 through January 3, 2011. One set of comments were received and have been addressed in the Final EA.

Background

CWD operates a long-term in-lieu Water Banking Program with Zone 7. CWD is considered a non-CVP contractor since they have never had a CVP long-term water service contract. CWD obtains its water from the State Water Project (SWP) through its contract with Kern County Water Agency (KCWA). CWD's other sources of water comprise of stored Kern River water, oilfield produced water, Poso Creek water, and groundwater. Normally, CWD would deliver SWP water to Zone 7 by exchange. CWD needs the WA contract to convey non-CVP water in the Friant-Kern Canal (FKC) to Zone 7 during extreme drought conditions when surface water allocations are unavailable from CWD's exchangers. In addition, CWD needs a license in order to install a new stairway and place a temporary pumping structure within the FKC right-of-way.

Findings

Reclamation has determined that implementation of the Proposed Action will result in no significant impact to the quality of the human environment is supported by the following:

Surface Water Resources

The Proposed Action will not result in changes in water rights or amounts of water diverted from other rivers or reservoirs. The Proposed Action will not interfere with normal CVP operations, nor alter the schedule and amount of CVP water diverted by the CVP from the San Joaquin River or Sacramento Delta. The introduction of this non-CVP water into the FKC will not significantly degrade the quality of CVP water. The FKC itself would not be modified. The Proposed Action will not increase or decrease water supplies that will result in additional homes to be constructed and served; therefore, no significant impacts to surface water resources will occur.

Groundwater Resources

The quantity of non-CVP water that will be conveyed in the FKC is limited to 20,000 acre-feet. The potential volume is very small compared to the volumes of water in the basin. The Proposed Action does not generate a need for water and does not include as a component the pumping of additional water or acquisition of water. Therefore, there will be no significant impacts to groundwater resources as a result of the Proposed Action.

Air Quality

The discharge from NKWSD Lateral 8-25 will be accomplished by a temporary diesel-powered pumping plant with a capacity of up to 30 cubic-feet per second on the canal embankment. The pumping plant will be installed each year during a drought year at Zone 7's request for their banked non-CVP water. Calculated emissions from the diesel pump under the Proposed Action will not result in adverse impacts to air quality beyond Federal thresholds.

Land Use

The Proposed Action will not result in a change to the surrounding land uses. The water conveyed through the facility will continue to be used for Zone 7 municipal and industrial and non-potable deliveries to Livermore's agricultural lands. The Proposed Action does not propose to construct facilities connecting existing facilities to lands currently not receiving water.

No land conversion is anticipated since water quantities will not change. The Proposed Action will have no effect on land use.

Biological Resources

The Proposed Action of entering into WA contract with CWD is consistent with the current operations, and as such, will have no direct effects on listed species or designated critical habitat. Water demands and conditions will not change at the existing facilities used at Lateral 8-17 and Lateral 8-25. A temporary diesel-powered pumping plant will be placed, maintained, and operated at lateral 8-25 and stairway structure at Lateral 8-17. Special-status plants and animals that may occur near the temporary pump and stairway, as described above, include San Joaquin kit fox and Tipton kangaroo rat.

A qualified biologist will conduct pre-construction surveys for the kit fox at least 200 feet outside of Lateral 8-25 and Lateral 8-17 boundaries 14 to 30 days prior to initiation of any ground disturbance or construction activity. If no sign or evidence of San Joaquin kit fox is found, it is likely that they are not present in the area of disturbance and will not be directly affected by the Proposed Action. However, if there is evidence of any dens or signs of the kit fox, the project will be halted immediately and Reclamation staff notified within two working days. The project will be placed on hold until further analysis is performed by Reclamation staff, and if necessary, consultation with the USFWS is completed.

To insure that the Proposed Action will avoid disturbances, injury or mortality to Tipton kangaroo rats, direct observation for the species and searching for diagnostic sign (burrows, scats, tail drags, dust baths, precincts and hay stacking, etc.) and any potential kangaroo rats burrows must be noted during pre-construction surveys for San Joaquin kit fox. If no sign or evidence of kangaroo rat is found, it is likely that they are not present in the area of disturbance and will not be directly affected by the Proposed Action. If any small mammal burrows are

found within the proposed construction zone during the pre-activity survey, the burrows will be flagged with pin flags and the project will be placed on hold until further analysis is performed by Reclamation staff, and if necessary, consultation with the USFWS is completed.

Cultural Resources

The Proposed Action will result in the issuance of a WA Contract and the issuance of a license for the erection, maintenance, and operation of structures. The permitting and erection of structures is the kind of action that has the potential to affect historic properties as defined in the regulations at 36 CFR Part 800.3(a)(1). Reclamation has applied the criteria of adverse effect pursuant to 36 CFR Part 800.5(a) and has found that this action does not constitute an adverse effect to the FKC or the CVP. In a letter dated August 08, 2011, the State Historic Preservation Officer concurred with this finding; therefore, the Proposed Action will not result in significant impacts to cultural resources.

Indian Trust Assets (ITA)

The nearest ITA is approximately 34 miles northeast of the project location; therefore, the Proposed Action does not have a potential to affect ITA.

Socioeconomic Resources

Under the Proposed Action, this stored surplus water could be delivered by exchange to Zone 7 during drought conditions. The non-CVP water will be stored and conveyed in existing facilities and no new construction with associated costs will be required. Therefore, the Proposed Action will not significantly affect socioeconomic resources.

Environmental Justice

A WA contract will allow CWD to convey Zone 7's banked non-CVP water back to the district. The Proposed Action will not cause dislocation, changes in employment, or increase flood, drought, or disease. The Proposed Action will not disproportionately impact economically disadvantaged or minority populations. There will be no significant impacts related to environmental justice from implementing the Proposed Action.

Global Climate

The Proposed Action is the execution of a long-term WA contract for conveyance of non-CVP water through federal facilities and issue a right-of-use application to cross/access Reclamation lands for a temporary diesel pump. The use of the pump will be temporary and will result in below *de minimis* impacts to global climate change. Therefore, the Proposed Action will not significantly affect the global climate.

Cumulative Impacts

The execution of a WA contract and delivery of water pursuant thereto is not reliant upon a larger action for its implementation. Therefore, there will be no effects of interrelated actions with implementation of the Proposed Action.

The Proposed Action does not trigger other water service actions and does not contribute to cumulative effects to surface water or groundwater resources. The Proposed Action will not interfere with deliveries, operations, or cause substantial adverse changes to the rivers, creeks or conveyance facilities. The Proposed Action will have no significant cumulative effects on land

use. The conveyance of non-project water to Zone 7 will have no effect on species of concern due to the small amount of water involved in the action versus the large amount of water routinely conveyed through the FKC. There will be no significant impact to cultural resources as a result of implementing the Proposed Action. The Proposed Action does not contribute to cumulative impacts to ITA. It does not contribute to cumulative impacts to socioeconomic resources or to environmental justice.

Approval would not have highly controversial or uncertain environmental effects or involve unique or unknown environmental risks. Impacts associated with the proposed action are minor, short-term, localized and temporary in nature; therefore, there are no significant cumulative impacts associated with this project.

RECLAMATION

Managing Water in the West

Final Environmental Assessment

Long-Term Warren Act Contract with Cawelo Water District

EA-06-66

U.S. Department of the Interior
Bureau of Reclamation
Mid Pacific Region
South-Central California Area Office
Fresno, California

November 2011

Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Table of Contents

Figures and Tables

List of Acronyms, Abbreviations, and Definition of Terms

AF	acre-feet
AF/y	acre-feet per year
APE	area of potential effects
Aqueduct	California Aqueduct
cfs	cubic feet per second
CNDDB	California Department of Fish and Game Natural Diversity Database
CO	carbon monoxide
CO_2	carbon dioxide
CVC	Cross Valley Canal
CVP	Central Valley Project
CWA	Clean Water Act
CWD	Cawelo Water District
DOI	U.S. Department of the Interior
DWR	California Department of Water Resources
EPA	Environmental Protection Agency
FKC	Friant-Kern Canal
FWCA	Fish and Wildlife Coordination Act
GHG	greenhouse gases
ITA	Indian Trust Assets
KCWA	Kern County Water Agency
M&I	Municipal and industrial
CH_4	methane
NAAQS	National Ambient Air Quality Standards
NHPA	National Historic Preservation Act
NKWSD	North Kern Water Storage District
PM_{10}	particulate matter 10 (particles that are 10 micrometers in diameter)
Parties	Districts involved in undertaking: Cawelo Water District, North Kern Water Storage District, Improvement District No. 4 of the Kern County Water Agency, and Southern San Joaquin Municipal Utility District
Reclamation	Bureau of Reclamation
SCH	State Clearinghouse
SIP	State Implementation Plan
SJV	San Joaquin Valley
SWP	State Water Project
TDS	total dissolved solids
USFWS	U.S. Fish and Wildlife Service
WA	Warren Act
Zone 7	Alameda County Flood Control and Water Conservation District Zone 7

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Section 1 Purpose and Need for Action

1.1 Background

The Warren Act (WA) of 1911 (43 U.S.C. § 523) authorized the Secretary of the Interior to enter into WA contracts with water purveyors to carry non-Central Valley Project water (i.e., water not part of the Central Valley Project [CVP]) through federal facilities. Under section 305 of the States Emergency Drought Relief Act of 1991 (43 U.S.C. §2211 et seq.), "Excess Storage and Carrying Capacity…," the Secretary is authorized to execute contracts with municipalities, public water districts and agencies, other federal agencies, state agencies, and private entities pursuant to the WA. These contracts provide for the impoundment, storage, and conveyance of non-CVP water for domestic, municipal, fish and wildlife, industrial, and other beneficial uses using any CVP facilities identified in the law.

Cawelo Water District (CWD) operates a long-term in-lieu Water Banking Program with Alameda County Flood Control and Water Conservation District Zone 7 (Zone 7) [See Figure 1-1 below for a map of the facilities that would be involved in the Proposed Action]. CWD is considered a non-CVP contractor since they have never had a CVP long-term water service contract (CWD has had temporary contracts; however, this does not provide CWD with the designation of a CVP contractor). CWD is located in the north-central portion of Kern County, encompassing 45,000 acres between State Route 65 on the east and State Route 99 on the west and extending from Seventh Standard Road in Bakersfield on the south to McFarland on the north, just easterly of the Friant-Kern Canal (FKC) alignment. CWD obtains its water (38,200 acre-feet [AF]) from the State Water Project (SWP) through its contract with Kern County Water Agency (KCWA). CWD's other sources of water comprise of stored Kern River water, oilfield produced water, Poso Creek water, and groundwater (Schafer 2002).

The KCWA serves as Kern County's contracting entity for the SWP and participates in a wide scope of related activities to preserve and enhance Kern County's water supply, including providing water to 14 contracting agencies and the provision of a supplemental water supply for portions of the metropolitan Bakersfield area. Kern County has delegated its county water management responsibilities to KCWA. KCWA also has the authority to approve or disapprove Kern County water movement into and out of the California Aqueduct (Aqueduct).

Zone 7 was formed in 1957 to address regional flooding and water supplies and is a part of the Alameda County Public Works Agency (ACPWA). The ACPWA is responsible for maintaining the infrastructure of Alameda County (Alameda County 2007).

Normally, CWD would deliver SWP water to Zone 7 by exchange. CWD has the following methods available for transporting and exchanging this water to Zone 7:

Water recovered from CWD's Banked supply and physically transported to Zone 7:

- Water recovered from CWD's groundwater wells would be transported through pipelines by gravity to North Kern Water Storage District's (NKWSD) 8-23 Canal then pumped into NKWSD's Lerdo Canal.
- The water would then be exchanged on an instantaneous basis with the water in the Beardsley Canal (same canal but upstream approximately 5 miles).
- The water in the Beardsley Canal would be allowed to flow by gravity through CWD's Conduit A and into the forebay of CWD's Pump Station A.
- From the forebay of the Pump Station A the water will reverse flow through the Cross Valley Canal (CVC) to the Aqueduct.
- Once in the Aqueduct, the water would be exchanged for water in the Aqueduct at the point of diversion for Zone 7 near the Bethany forebay.

Water recovered from CWD's Banked supply and exchanged to Zone 7:

- Water recovered from CWD's groundwater wells would be transported through pipelines by gravity to North Kern's 8-23 Canal then pumped into NKWSD's Lerdo Canal.
- The water would then be exchanged with water that NKWSD and others have available in the CVC that was originally intended to be delivered into their district.
- The water would then be transported through the remaining portions of the CVC by reverse flow to the Aqueduct.
- Once in the Aqueduct, the water would be exchanged for water in the Aqueduct at the point of diversion for Zone 7 near the Bethany forebay.

Water recovered from CWD's Banked supply outside its boundaries and exchanged to Zone 7:

- Water recovered from CWD's groundwater accounts that are situated outside the district's boundaries would be pumped from groundwater wells into the CVC.
- Once in the CVC, the water would reverse flow by gravity to the Aqueduct and would be exchanged for water in the Aqueduct at the point of diversion for Zone 7 near the Bethany forebay.

CWD is requesting a WA Contract to deliver up to 20,000 AF of previously banked SWP water to Zone 7 through federal facilities during a drought year (typically, between September 1 and April 30).

1.2 Purpose and Need

The purpose of executing the proposed WA contract is to allow for the conveyance and return of Zone 7's banked non-CVP water from CWD. Normally, CWD would deliver SWP water to Zone 7 by exchange. CWD needs the WA contract for extreme drought conditions when surface water allocations are unavailable from CWD's exchangers.

1.3 Relevant Environmental Documents

Relevant Environmental Documents

Zone 7 developed a Water Supply Planning Program to address its long-term water supply and facility needs through the year 2020, and has also prepared and adopted its *Zone 7 Water Agency Water Supply Planning Program Environmental Impact Report* (State Clearinghouse (SCH) #98041040) on July 21, 1999.

Zone 7 also prepared *Cawelo Water District Water Transfer, Zone 7 Water Agency, Livermore—Alameda – Initial Study and Negative Declaration*, dated January 26, 2006, for the Zone 7/CWD In-Lieu Water Banking Exchange Program. Zone 7 filed the Initial Study and Negative Declaration with the SCH on January 30, 2006 (SCH #2006012136). Zone 7 approved the Negative Declaration on March 15, 2006, and filed a Notice of Determination with the SCH and the County of Alameda on March 22, 2006.

In the Initial Study and Negative Declaration, Zone 7 would acquire up to 10,000 acre-feet per year (AF/y) of supplemental, dry year water supply by participating in a long-term, in-lieu water banking program managed by CWD. CWD's banking program would allow Zone 7 to store its surplus SWP allocation in CWD's groundwater basin; in turn, a portion of the banked water would be recovered from CWD when needed (during drought periods), with Zone 7 taking delivery at Bethany Reservoir and the South Bay Aqueduct. This transfer would serve municipal and industrial uses within Zone 7's service area and be integrated with Zone 7's existing water supply sources.

CWD prepared *Cawelo Water District In-Lieu Water Banking Program – Initial Study and Negative Declaration*, dated July 10, 2003, and filed it with the SCH and the County of Kern on May 27, 2003 (#2003051128). The In-Lieu Water Banking Program would involve a long-term surface water exchange and groundwater banking and extraction program in CWD with one or more partners. CWD constructed additional canals, pipelines, pumping plants, and extraction wells, recharge basins and equalizing reservoirs for the delivery and recovery of banked groundwater as part of the In-Lieu Water Banking Program. This is known as the Famoso Water Banking Project and was completed August 2007.

1.4 Applicable Regulatory Requirements and Required Coordination

Several Federal laws, permits, licenses and policy requirements have directed, limited or guided the National Environmental Policy Act (NEPA) analysis and decision making process of this environmental assessment and include the following:

- *Reclamation States Emergency Drought Relief Act* - Section 102 of the Reclamation States Emergency Drought Relief Act of 1991 provides for use of Federal facilities and contracts for temporary water supplies, storage and conveyance of non-CVP water inside and outside project service areas for municipal and industrial (M&I), fish and wildlife, and agricultural uses.
- *Reclamation States Emergency Drought Relief Act* - Section 305 of 1991, enacted March

5, 1992 (106 Stat. 59), also authorizes Reclamation to utilize excess capacity to convey non-CVP water.

- *Contracts for Additional Storage and Delivery of Water* – Central Valley Improvement Act (CVPIA) of 1992, Title 34 (of Public Law 102-575), Section 3408(c), Additional Authorities (c) authorizes the Secretary of the Interior to enter into contracts pursuant to Reclamation law and this title with any Federal agency California water user or water agency, State agency, or private nonprofit organization for the exchange, impoundment, storage, carriage, and delivery of Central Valley Project and non-project water for domestic, municipal, industrial, fish and wildlife, and any other beneficial purpose, except that nothing in this subsection shall be deemed to supersede the provisions of section 103 of Public Law 99-546 (100 Stat. 3051). The CVPIA is incorporated by reference.
- *Water Quality Standards* - Reclamation requires that the operation and maintenance of CVP facilities shall be performed in such a manner as is practical to maintain the quality of raw water at the highest level that is reasonably attainable. Water quality and monitoring requirements are established annually by Reclamation and are instituted to protect water quality in the FKC by ensuring that imported non-CVP water does not impair existing uses or adversely impact existing water quality conditions. These standards are updated periodically. The annual review for the approval of WA Contracts would be subject to the then existing water quality standards. The water quality standards are the maximum concentration of certain contaminants that may occur in each source of non-CVP water. The water quality standards for non-CVP water to be pumped into the FKC are currently those set out in Title 22 of the California Code of Regulations. The standards from Title 22 can be found in Appendix A.

1.5 Scope

This EA has been prepared to examine the impacts on environmental resources as a result of conveying non-federal water in CVP facilities. Up to 20,000 AF per year of previously banked SWP water would be introduced into the FKC for a period of 25 years. As part of the Proposed Action, the non-CVP water quality would be tested and at a minimum, required to meet Title 22 standards before entering the FKC. This EA has also been prepared to analyze the potential impacts from the No Action Alternative.

Reclamation has no federal jurisdiction or control over the disposition of the water once it is conveyed through federal facilities to the CVC and SWP.

1.6 Potential Issues

- Surface Water Resources
- Groundwater Resources
- Air Quality
- Land Use
- Biological Resources
- Cultural Resources
- Indian Trust Assets

- Socioeconomic Resources
- Environmental Justice
- Global Climate

Figure 1-1 Map of the Area Involved

Section 2 Alternatives Including Proposed Action

2.1 No Action

The No Action Alternative would consist of not allowing the non-CVP Water to be conveyed to Zone 7 through CVP facilities during a drought year. During a drought, CWD would not have a means of returning Zone 7's non-CVP water due to possible allocation cuts to SWP water. SWP exchangers would also experience allocation cuts. Zone 7 would not be able to retrieve its banked water. If available, Zone 7 may have to purchase water from another seller which could be more expensive.

The No Action Alternative would also consist of not issuing a new license to CWD to use Lateral 8-17 to convey non-CVP water through federal facilities.

2.2 Proposed Action

The Proposed Action has two components. The issuance of a WA Contract and the issuance of a license for the erection, maintenance, and operation of structures, consisting of a discharge system and stairway for the purpose of pumping groundwater across Reclamation's right-of-way and into the FKC at two locations (milepost 131.34 [approximate Station No. 7062+40] and milepost 133.43 [approximate Station No. 7125+25]).

The WA Contract would be consistent with Reclamation policy and dependent on public negotiations. A WA Contract would provide the capability of using existing conduits without impact or the cost of new construction.

Reclamation proposes to execute a 25-year, long-term WA Contract with CWD, which would allow the district to convey up to 20,000 AF per year of non-CVP water (previously banked SWP water, groundwater, and/or other sources as described in Section 3.1.1) to the Aqueduct via the Lerdo Canal and laterals to the FKC (when capacity is available) and then through the CVC by exchange or reverse flow for recovery by Zone 7. The Proposed Action would not interfere with normal CVP operations, nor alter the schedule and amount of CVP water diverted by the CVP from the Sacramento-San Joaquin River Delta.

As part of CWD's long-term In-Lieu Water Banking Program with Zone 7, banked surplus water would be stored, when available, in CWD and recovered from Zone 7 when needed.

Normally, CWD would deliver SWP water to Zone 7 by the methods discussed previously. Only under extreme drought conditions would CWD resort to pumping banked water into NKWSD's Lerdo Canal and laterals for discharge into the FKC. The first time Zone 7 banked with CWD was in 2006; however, CWD has not returned banked water to Zone 7.

The proposed process is as follows:

Water recovered from CWD's banked supply and exchanged via the FKC to Zone 7:

The water would be discharged from the Lerdo Canal distribution system into the FKC and then into the CVC. This would be accomplished in the following manner (See Figure 2-1):

- Water would flow by gravity through NKWSD's Lateral 8-17 (milepost 133.43) and, at Lateral 8-25 (milepost 131.34), the water would be pumped into the FKC, and then transported to the terminus of the FKC and then delivered into the CVC.
- The water in the CVC would be transported to the Aqueduct by exchange or reverse flow. Once in the Aqueduct, the water would be exchanged for water in the Aqueduct at the point of diversion for Zone 7 near the Bethany forebay.

An existing 20 cubic-feet per second (cfs) discharge pipeline from Lateral 8-17 at FKC milepost 133.43 would be used for delivery of the non-CVP water from the Lerdo Canal distribution system into the FKC. In addition, CWD would install a meter and valve on the 18-inch discharge pipe attached to the underside of a 66-inch overchute pipe, an existing feature of the FKC at milepost 133.43. A new stairway would be installed over the existing embankment to provide safe access to and from the meter. A shovel would be used to excavate holes (eight holes 3 feet deep and 1 foot in diameter) for the stairway support columns and steel traffic bollard, which would be encased with concrete. The concrete footings would be covered with native soil. There would be no changes to the existing canal lining (the specifications and drawings can be found in Appendix C). A 25-year license would be issued to CWD to install the new stairway.

A portable, diesel-powered pumping plant would be utilized during a drought year at Zone 7's request for return of their banked non-CVP water if a flow greater than 30 cfs is needed. A 12-inch suction pipe of the pump would be set in the forebay of the existing siphon, the pump would be set on the FKC embankment (within a spill guard – see Appendix C) without interference with the roadway to State Route 46, and the pump discharge would be located over the FKC lining. A 25-year license would be issued to CWD to allow for the temporary pump to be placed within the FKC right-of-way.

Together, the facilities would provide the mechanism for the recovery of Zone 7's water. The non-CVP water would not exceed 20,000 annually - the two sites would provide up to 50 cfs of non-CVP water for return to Zone 7. There would be no structural modification to the FKC itself at milepost 131.34 or milepost 133.43.

It is estimated that up to 20,000 AF of Zone 7's approved SWP water supplies could be delivered to CWD for in-lieu recharge per year, depending on hydrologic conditions and capacity within CWD's recharge facilities. Up to fifty percent of Zone 7's stored water would be available for recovery from CWD during drought periods, that is, for every two AF of water stored within CWD, Zone 7 would be returned one AF. For example, if Zone 7 has a balance of at least 40,000 AF banked within CWD, then in times of drought, Zone 7 would be allowed to recover an estimated 20,000 AF annually. If Zone 7 has a balance of under 40,000 AF, then up to 50% of that balance could be recovered.

The return of Zone 7 groundwater water would occur by delivery through the FKC, the CVC, and the Aqueduct. Since other users along the conveyance systems would also have demands in a dry year, it is unlikely that physical return of the banked groundwater would be required. Rather, return of water to Zone 7 would occur through a series of exchanges typically involving NKWSD and others. The Proposed Action does not include the delivery of Kern River water to the Aqueduct.

CWD would not make groundwater withdrawals from any particular area of CWD if such withdrawals have caused or would cause the average groundwater levels in an area of interest in neighboring areas to drop 15 feet or greater than what the average groundwater levels would have been without the Proposed Action over a 3-year period and such impacts could not be mitigated.

FKC milepost 131.34 (NKWSD 8-25 Lateral) is situated on the south line, near the southwest corner of Section 1, Township 27 South, Range 25 East, Mount Diablo Base and Meridian; FKC milepost 133.43 (NKWSD 8.17 Lateral) on the south line near the southeast corner of Section 14, Township 27 South, Range 25 East, Mount Diablo Base and Meridian, both in the Kern County, California (see Figure 2-1). Refer to Appendix B for photos of the project areas.

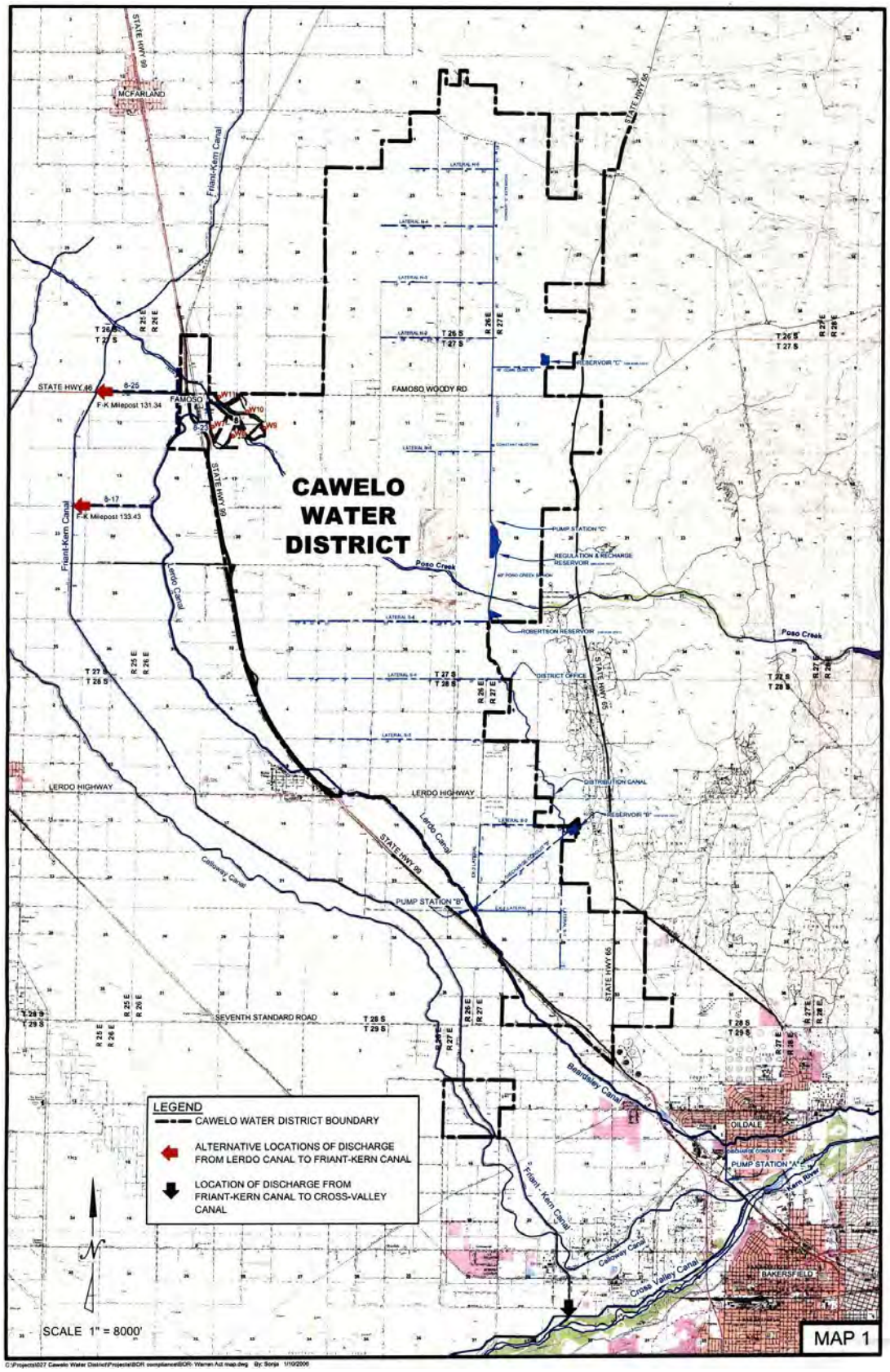

Figure 2-1 Zone 7 Water Recovery Pathway to Friant-Kern Canal

Section 3 Affected Environment & Environmental Consequences

3.1 Surface Water Resources

3.1.1 Affected Environment

Beardsley and Lerdo Canals

The Beardsley Canal is lined and originates on the Kern River at the Beardsley Weir. It becomes the Lerdo Canal at Seventh Standard Road near Oildale, approximately six miles downstream of Discharge 001. The Lerdo Canal is unlined. The Beardsley Canal becomes the Lerdo Canal and discharges to Poso Creek. The Beardsley and Lerdo Canals serve as a significant source of agricultural water supply to the NKWSD and CWD. Total agricultural land served by the Beardsley and Lerdo canals within these two districts is an estimated 110,000 acres, of which about 40,000 acres are permanent crops that are boron-sensitive. The Beardsley Canal also serves approximately 10,000 acres of land south of these Districts and within the sphere of influence of the City of Bakersfield (SWRCB 2007). Irreplaceable

CVP Facilities

The FKC carries water over 151.8 miles in a southerly direction from Millerton Lake to the Kern River, four miles west of Bakersfield. The water is used for supplemental and irrigation supplies in Fresno, Tulare, and Kern counties. Construction of the canal began in 1945 and was completed in 1951. The canal has an initial capacity of 5,000 cfs that gradually decreases to 2,000 cfs at its terminus in the Kern River (Reclamation 2007a).

Water quality in the FKC canal is pristine as it emanates from snow melt from the granitic Sierra Nevadas. Salinity measured as total dissolved solids (TDS) typically averages about 50 mg/L. No constituents in this water supply limit its use.

Cross Valley Canal

The CVC was constructed in 1975 to convey both SWP water and CVP water from the Aqueduct on the west side of the southern San Joaquin Valley (SJV) to the east side of the southern SJV near Bakersfield, California, near the terminus of the FKC (Figure 2-1). The CVC is operated by KCWA.

California Aqueduct

The Aqueduct is the primary conveyance facility for the SWP. It delivers water to the southern San Francisco Bay area, San Joaquin Valley, and Central and Southern California. The Aqueduct extends from the Harvey O. Banks Pumping Plant in the southern Sacramento-San Joaquin Delta, along the western side of the San Joaquin Valley, through the Tehachapi and San Bernardino Mountains, and ends in Riverside County. The Aqueduct delivers water to agricultural and municipal contractors through over 270 diversion structures. The majority of diversions are made between O'Neill Forebay and Edmonston Pumping Plant (State Water Contractors 2005).

The main stem of the Aqueduct consists of 385 miles of concrete-lined open canal and 59 miles of tunnels, siphons, and pipelines. The Aqueduct transports up to 3 million AF/y of water to SWP urban and agricultural users (DWR 2009).

Kern County Water Agency

KCWA is a non-CVP Contractor located in the southern portion of the San Joaquin Valley in Kern County. KCWA was created by a special act of the State Legislature in 1961. It holds the master contract with the State of California for delivery of a maximum yearly entitlement of 1,000,949 AF of SWP water supplies for 14 subcontracting water agencies ("Member Units") within Kern County. KCWA has access to SWP water and Kern River water.

North Kern Water Storage District

NKWSD is a non-CVP Contractor. The approximately 60,000 acres of land within NKWSD are fully developed for irrigated agriculture with water supplies principally from the Kern River and pumped groundwater. NKWSD has appropriative rights and a contract for Kern River water with the City of Bakersfield that is administered by Kern County Water Agency. Historical surface water supplies from the Kern River delivered to NKWSD have ranged from less than 10,000 AF/y to nearly 400,000 AF/y. As a result of this highly variable water supply, NKWSD has developed an extensive groundwater recharge, banking and extraction program utilizing the groundwater basin to regulate its water supplies (NKWSD 2001).

Cawelo Water District

CWD receives water through the Aqueduct. It is located in the southern portion of SJV and supplies irrigation water to nearly 45,000 acres of crops including grapes, citrus, almonds, and pistachios.

Zone 7

Zone 7 is one of 29 SWP contractors and provides 10-20 percent non-potable deliveries to Livermore's agriculture. Zone 7 has 80,619 AF/y of sustainable water supply. Along with flood protection, Zone 7 supplies water to all of eastern Alameda County and a population of more than 183,000 in a service area comprised of approximately 430 square-miles (for M&I use). Treated water is sold wholesale to local retailers, including the cities of Pleasanton, Livermore, and the Dublin San Ramon Services District as well as the surrounding unincorporated Alameda County lands. Zone 7 is responsible for some 35 linear miles of pipeline and 41 linear-miles of flood control channels and drainage facilities. These channels consist primarily of enlarged natural channels or excavated new channels (Zone 7, 2007).

3.1.2 Environmental Consequences

No Action

Under the No Action alternative, the non-CVP water would not be conveyed in the FKC. CWD would continue its banking operations with Zone 7. During a drought, CWD would not have a means of returning Zone 7's non-CVP water due to possible allocation cuts to SWP water. SWP exchangers would also experience allocation cuts. Zone 7 would not be able to retrieve its banked water. If available, Zone 7 may have to purchase water from another seller which could be more expensive.

Proposed Action

Under the Proposed Action, Reclamation would convey the non-CVP water for CWD in the FKC during periods of drought, and when capacity is available. This would not alter water rights held by the United States to divert CVP water from the San Joaquin River. The Proposed Action would not result in changes in water rights or amounts of water diverted from other rivers or reservoirs.

The Proposed Action would not interfere with normal CVP operations, nor alter the schedule and amount of CVP water diverted by the CVP from the San Joaquin River or Sacramento Delta. The introduction of this non-CVP Water into the CVP facilities would not degrade the quality of CVP water.

There would be no structural modifications to the FKC. The Proposed Action does not increase or decrease water supplies that would result in additional homes to be constructed and served.

Based on these findings, there would be no adverse impacts as a result of the Proposed Action.

Cumulative Effects

Cumulative impacts result from incremental impacts of the Proposed Action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment.

To determine whether cumulatively significant impacts are anticipated from the Proposed Action, the incremental effect of the Proposed Action was examined together with impacts from past, present, and reasonably foreseeable future actions in the same geographic area.

The execution of a WA contract and delivery of water pursuant thereto is not reliant upon a larger action for its implementation. Therefore, there would be no effects of interrelated actions with implementation of the Proposed Action.

The Proposed Action does not trigger other water service actions and does not contribute to cumulative effects to surface water resources. The Proposed Action would not interfere with deliveries, operations, or cause substantial adverse changes to the rivers, creeks or conveyance facilities.

It is unlikely that WA contracts utilizing the FKC would use the capacity at the same time as the Proposed Action as other WA contracts would most likely be used to move non-CVP water during the peak growing season.

Additionally, use of the FKC for conveyance of non-CVP water is based on excess capacity (above the needs of the CVP) being available. If overlap occurs and requests for canal capacity exceed the unutilized capacity, Friant Water Authority would establish the usage priority and prorate the remaining capacity. The concurrent use would not effect CVP operations or CVP contractor's ability to obtain project deliveries.

Water quality in the FKC canal would not be cumulatively adversely impacted by the proposed WA Contracts since canal water quality would be heavily monitored and all projects would be required to meet the established FKC water quality criteria. If water quality degradation due to one or more pump-ins occurs, the responsible pump-ins would be terminated.

The conveyance facilities and river systems in the lower SJV are interconnected and allow for a myriad of transfers, exchanges, contract assignments, and conveyances of water. These water service actions are common and are not precedent setting. The conveyance of non-CVP water in CVP facilities is subject to capacity after all CVP requirements are met.

The Proposed Action would not contribute to cumulative effects to resources or the human environment.

3.2 Groundwater Resources

3.2.1 Affected Environment

The Central Valley of California is divided into two groundwater basins, the Sacramento Valley Groundwater Basin and the San Joaquin Valley Groundwater Basin. The San Joaquin Valley Groundwater Basin is further divided into subbasins, one of which is the Kern County Subbasin.

The San Joaquin Valley was formed by deposition of sediment in north-northwestern trending trough. The aquifer system in the valley consists of continental and marine deposits several miles deep. The upper 2,000 feet generally contain fresh groundwater, with saline water at greater depths. The sediments that contain the aquifer system are primarily Tertiary-and Quaternary-aged continental sediments derived from the Coast Range to the west and the Sierra Nevada to the east. Overlying these formations are flood plain deposits. A major hydrogeologic feature is the Corcoran Clay. This clay layer divides the aquifer system into two distinct aquifers, an unconfined to semi-confined upper aquifer above the clay layer and a confined aquifer below it. However, the clay layer is not continuous, and is absent in portions of the Kern County Subbasin.

Historically, the upper aquifer system in the Kern County Subbasin was recharged by precipitation, infiltration from rivers and lakes and lateral inflow along the basin boundaries. Table 3-1 lists the Kern Groundwater Basin characteristics. The main surface water feature in the Kern County Subbasin is the Kern River. Before European settlement, the Kern River flowed to Kern and Buena Vista Lakes and extensive wetlands. During wet periods, the lakes overflowed to Tulare Lake to the north, which itself overflowed into the San Joaquin River watershed. Groundwater levels in the basin varied but reached artesian conditions in the lowest parts of the subbasin (DWR 2007).

In 1978, DWR was directed by the legislature to develop a definition of critical overdraft and to identify those basins in a critical condition of overdraft (Water Code §12924). Bulletin 118-80, 16. The Kern Groundwater Basin was listed in this bulletin as a critically overdrafted basin. Overdraft is the condition of a groundwater basin in which the amount of water withdrawn by pumping over the long term exceeds the amount of water that recharges the basin. Overdraft is characterized by groundwater levels that decline over a period of years and never fully recover,

even in wet years. Overdraft can lead to increased extraction costs, land subsidence, water quality degradation, and environmental impacts (DWR 1995).

Table 3-1 Kern Groundwater Basin Characteristics

Yield Data	Production Data	Water Quality
Storage Capacity, AF	Well Yield, gpm per well	Total Dissolved Solids, mg/l
11,200,000	1,200 - 1,500	400 - 450
Perennial Yield, AF/y	Production Depths, feet	
1,220,000	300 - 600	
Annual Extraction, AF/y	Pump Lifts, feet	
1,400,000	200 – 250	
Overdraft, AF/y		
180,000		

Source: DWR Bulletin 118, October 1995 (via DWR website).

Pumped groundwater as noted above has a TDS of approximately 400 mg/L and Delta supplies also typically have a TDS in this range. Both the CVC and the FKC have water quality standard requirements. Both require any party delivering water into either canal to meet Title 22 water quality standards. Typically farmers in the Friant Division need to apply gypsum or some other chemical to raise the Salt Absorption Ratio to allow the water to percolate through the charged soil particles (Reclamation 2007b).

Zone 7 manages both surface and groundwater supplies to maximize conjunctive use and reliability of water supplies. Groundwater typically makes up 15-25 percent of the water supplied by Zone 7 to its retail water supply agencies (Zone 7 2006). Zone 7 has groundwater banking rights in Kern County, which allows them to store surplus state water supplies during wet years to draw upon when needed during a drought. Zone 7 has secured 120,000 AF of capacity from CWD.

The groundwater quality in the Proposed Action area of CWD is excellent.

3.2.2 Environmental Consequences

No Action

Under the No Action alternative CWD would not have a means of returning Zone 7's non-CVP water during a drought year due to possible allocation cuts to SWP water. If available, Zone 7 may have to purchase water from another seller which could be more expensive. Groundwater would not be pumped and groundwater levels would not change. During non-drought years, Zone 7 would recover their banked water as described in Section 1.1, which does not require Reclamation approval.

Proposed Action

The Proposed Action would provide an efficient, cost effective means of conveyance during drought periods of Zone 7's banked CWD water.

The quantity of non-CVP water that would be conveyed in the FKC is limited to 20,000 AF. The potential volume is very small compared to the volumes of water in the basin. The Proposed Action does not generate a need for water, and does not include as a component the pumping of additional water or acquisition of water. Therefore, there would be no adverse impacts to groundwater resources as a result of the Proposed Action.

Cumulative Effects

The Proposed Action does not trigger other water service actions and does not contribute to cumulative effects to groundwater resources. The Proposed Action would not result in cumulative effects relative to increased pumping of groundwater or other diversions. As the Proposed Action has no effect on groundwater resources, there would be no cumulative effects.

3.3 Air Quality

3.3.1 Affected Environment

Despite years of improvements, the SJV air basin does not meet state and federal health based air-quality standards. To protect health, the San Joaquin Valley Air District is required by federal law to adopt stringent control measures to reduce emissions. Section 176 (c) of the Clean Air Act (42 U.S.C. 7506 (c)) requires any entity of the Federal government that engages in, supports, or in any way provided financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable State Implementation Plan (SIP) required under Section 110 (a) of the Federal Clean Air Act (42 U.S.C. 7401 (a)) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with a SIP's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards (NAAQS) and achieving expeditious attainment of those standards. Each federal agency must determine that any action that is proposed by the agency and that is subject to the regulations implementing the conformity requirements will, in fact conform to the applicable SIP before the action is taken.

On November 30, 1993, the Environmental Protection Agency (EPA) promulgated final general conformity regulations at 40 CFR 93 Subpart B for all federal activities except those covered under transportation conformity. The general conformity regulations apply to a proposed federal action in a non-attainment or maintenance area if the total of direct and indirect emissions of the relevant criteria pollutants and precursor pollutant caused by the Proposed Action equal or exceed certain *de minimis* amounts thus requiring the federal agency to make a determination of general conformity.

The following *de minimis* amounts for the region covering the CWD Proposed Action are presented in Table 3-2. Calculations were based on three 188 horsepower tier 2 diesel engine pumps run for a 24/7 5.5 month period.

Table 3-2 General Conformity *de minimis* Thresholds

San Joaquin Valley General Conformity *de minimis* Thresholds			
Pollutant	**Federal Status**	***de minimis* (tons/year)**	**Calculated project emissions (tons/year)**
VOC/ROG (as an ozone precursor)	Nonattainment serious 8-hour ozone	50	1.0
NO_x (as an ozone precursor)	Nonattainment serious 8-hour standard	50	17.4
PM_{10}	Attainment	100	Not calculated
CO	Attainment	100	Not calculated

Source: SJVAPCD 2009; 40 CFR 93.153

No Action
Under the No Action Alternative, there would be no impacts to air quality since conditions would remain the same as existing conditions.

Proposed Action
The discharge from NKWSD Lateral 8-25 would be accomplished by a temporary diesel-powered pumping plant with a capacity of up to 30 cfs on the canal embankment. The pumping plant would be installed each year during a drought year at Zone 7's request for their banked non-CVP water. Calculated emissions from the diesel pump under the Proposed Action would not result in adverse impacts to air quality beyond Federal thresholds.

Cumulative Effects
The effects of the Proposed Action would be short-term and operations would not result in cumulative adverse air quality impacts.

3.4 Land Use

3.4.1 Affected Environment
CWD is a small part of the SWP. CWD is located in the southern portion of California's fertile San Joaquin Valley. CWD supplies irrigation water for over 45,000 acres of crops including grapes, citrus, almonds, and pistachios.

Zone 7 is located in the eastern section of Alameda County which includes Pleasanton, Livermore, and Dublin as well as the surrounding unincorporated Alameda County lands. Existing land uses include residential, commercial, industrial, recreational park, agriculture, and public/institutional uses (Zone 7, 2005).

3.4.2 Environmental Consequences
No Action
Under the No Action Alternative there would be no changes to land use. Under the No Action alternative CWD would not have a means of returning Zone 7's non-CVP water during a drought year due to possible allocation cuts to SWP water. If available, Zone 7 may have to find other sources of water to purchase which could be more expensive.

Proposed Action
The Proposed Action would not result in a change to the surrounding land uses. The water conveyed through the facility would continue to be used for Zone 7 M&I and non-potable deliveries to Livermore's agriculture. The Proposed Action does not propose to construct facilities connecting existing facilities to lands currently not receiving water.

No land conversion is anticipated since water quantities would not change. The Proposed Action would have no effect on land use.

Cumulative Effects
As the Proposed Action has no effect on land use or land use trends, the Proposed Action would have no cumulative effects on land.

3.5 Biological Resources

3.5.1 Affected Environment

Prior to widespread agriculture, land within the Proposed Action area provided habitat for a variety of plants and animals. With the advent of irrigated agriculture and urban development over the last 100 years, many species have become threatened and endangered due to habitat loss. Between 1850 and 1985, approximately 86 percent of native wetlands in the Central Valley were converted for urban and agricultural practices (USFWS 1989). In addition, less than 10 percent of the valley grasslands and San Joaquin saltbrush scrub, the primary natural habitats across the valley, occurs today. Any remaining habitat consists of isolated fragments supporting small, highly vulnerable wildlife populations (Reclamation 2001).

Native habitat is absent along existing Lateral 8-25 and Lateral 8-17. The existing condition is typical of any maintained canal and levee roads; and surrounded by farmed crop lands, as can be seen in Appendix B.

Potentially Affected Listed Species

Reclamation has previously consulted under the ESA on the *Operation and Maintenance (O&M) Program Occurring on Bureau of Reclamation Lands within the South-Central California Area Office*, resulting in a Biological Opinion issued by the USFWS on February 17, 2005 (USFWS 2005). The opinion considers the effects of routine O&M of Reclamation's facilities used to deliver water to the study area, as well as certain other facilities within the jurisdiction of the South-Central California Area Office, on special-status plants and wildlife.

Reclamation requested an official species list from the U.S. Fish and Wildlife Service (USFWS) on November 28, 2011 via the Sacramento Field Office's website: http://www.fws.gov/sacramento/es/spp_list.htm (Document Number 111128113738). The list is for the following 7 ½ minute U.S. Geological Survey quadrangles, which are overlapped by CWD: McFarland, North of Oildale, Deepwell Ranch, Famoso, Rosedale, and Oildale quadrangles. Reclamation further queried the California Natural Diversity Database for records of protected species within the vicinity of the project (CNDDB 2011). The two lists, in addition to the type of action and other information within Reclamation's files, were combined to create the following list (Table 3-3).

Table 3-3 Potentially Affected Listed and Proposed Species in the Cawelo Water District Area

Species	***Common Name***	***Status[1]***	***Effects[2]***	***Occurrence in the Study Area[3]***
Invertebrates				
Branchinecta lynchi	vernal pool fairy shrimp	T	NE	**Absent**. No individuals or habitat in area of impact.
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	T	NE	**Absent**. No individuals or habitat in area of effect.
Fish				
Hypomesus transpacificus	delta smelt	T	NE	**Absent**. No natural waterways within the species' range will be affected by the proposed action.
Amphibians				

Rana draytonii	California red-legged frog	T	NE	**Absent**. No individuals or habitat in area of impact.
Reptiles				
Gambelia sila	blunt-nosed leopard lizard	E	NE	**Unlikely**. No CNDDB records reported within the last 10-years. No construction of new facilities in potential habitat; no conversion of lands from existing uses.
Thamnophis gigas	giant garter snake	T	NE	**Absent**. No individuals or habitat in area of impact.
Birds				
Empidonax traillii extimus	southwestern willow flycatcher	E	NE	**Absent**. No individuals or habitat in area of impact.
Mammals				
Dipodomys ingens	giant kangaroo rat	E	NE	**Absent**. No individuals or habitat in area of impact.
Dipodomys nitratoides nitratoides	Tipton kangaroo rat	E	NE	**Possible**. CNDDB occurrences reported from FKC within 3-miles of Lateral 8-25. No construction of new facilities in potential habitat; no conversion of lands from existing uses.
Vulpes macrotis mutica	San Joaquin kit fox	E	NE	**Present**. CNDDB records indicate this species occurs within the Proposed Action Area. No construction of new facilities in potential habitat; no conversion of lands from existing uses.
Plants				
Caulanthus californicus	California jewelflower	E	NE	**Absent**. No individuals or habitat in area of impact.
Monolopia cogdonii	San Joaquin woolly-threads	E	NE	**Absent**. Believed extirpated from area (Tayler 1989). There has been extensive urban growth and agriculture. No construction of new facilities; in potential habitat and no conversion of lands from existing uses.
Opuntia treleasei	Bakersfield cactus	E	NE	**Present**. CNDDB records indicate this species is located on eastern border of the Service Area, north of 7th Standard Rd. However, does not inhabit croplands or lands fallowed and untilled for less than three years. No construction of new facilities; no conversion of lands from existing uses.

1 Status= Listing of Federally special status species, unless otherwise indicated.
E: Listed as Endangered.
T: Listed as Threatened.
2 Effects = NE = No Effect determination.
3 Definition Of Occurrence Indicators in Proposed Action Area.
Present: Species observed and suitable habitat present.
Possible: Species reported in area but suitable habitat suboptimal or entirely lacking.
Unlikely: Species recorded in vicinity over 10-years ago but habitat suboptimal or entirely lacking.
Absent: No species records and habitat requirements not met.
4 CNDDB = California Natural Diversity Database 2011.Database 2009.

The predominate habitat located within the Proposed Project site is actively cultivated agricultural lands and offers limited habitat value to wildlife. Of the 13 special-status species identified above (Table 3-3), only three protected species have the potential to occur in the

Project area: San Joaquin kit fox (*Vulpes macrotis mutica*), Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*), and Bakersfield cactus (*Opuntia treleasei*).

Critical Habitat The Proposed Action does not fall within designated or proposed critical habitat for any species.

San Joaquin Kit Fox San Joaquin kit foxes inhabit grasslands and scrublands, many of which have been extensively modified. Types of modified habitats include those with oil exploration and extraction equipment, wind turbines, and agricultural mosaics of row crops, irrigated pastures, orchards, vineyards, and grazed annual grasslands (USFWS 1998, Warrick et al. 2007), which are a common habitat in Kern County. Within a 10-mile radius of the Project Area, there have been many sightings of San Joaquin kit fox (CNDDB 2011) and San Joaquin kit foxes have the potential to occur within the vicinity.

Tipton kangaroo rat Tipton kangaroo rat is federally listed as endangered and is included in the Recovery Plan for Upland Species of the San Joaquin Valley, California (USFWS 1998). Tipton kangaroo rats are restricted to scattered, isolated areas of south-central California and inhabit arid-land vegetative communities. Terrain not subject to flooding is essential to sustain a population of kangaroo rats. These rodents are primarily nocturnal and remain active year-round. Their diet consists mostly of seeds but they will also eat green vegetation and insects (USFWS 1998). Agricultural and residential development, and the widespread use of rodenticides, is principally responsible for the decline of the species (Williams and Kilburn 1992).

The project area is surrounded by orchards. Frequent ground disturbances and intensive chemical applications to agricultural lands limit the species presence and potential burrow sites. There are CNDDB records for Tipton kangaroo rat just north of HW 46, within 3-miles of Lateral 8-25, where the temporary pump would be placed. Therefore, due to the proximity of these reports, the Tipton kangaroo rat could potentially exist within the action area.

Bakersfield cactus Bakersfield cactus is a low growing perennial found in sandy to sandy-loam soils of Kern County in highly fragmented populations (USFWS 1990). They occur along the eastern boundary of CWD on flood plains, along bluffs and rolling hills in alkali saltbrush scrub plant communities. However, Bakersfield cacti are not expected to occur within the temporary pump and stairway.

3.5.2 Environmental Consequences

No Action

Under the No Action Alternative there would be no impacts to wildlife and special status species, as no new facilities would be constructed and existing deliveries would continue as has historically occurred. The conditions of special status wildlife species and habitats under the No Action Alternative would be the same as they would be under existing conditions described in the Affected Environment; therefore, no additional effects to special status species or critical habitats are associated with this alternative.

Proposed Action

The Proposed Action of entering into WA contract with CWD would be consistent with the current operations, and as such, would have no direct effects on listed species or designated critical habitat. Water demands and conditions would not change at the existing facilities used at Lateral 8-17 and Lateral 8-17. A temporary diesel-powered pumping plant would be placed, maintained, and operated at lateral 8-25 and a stairway structure installed at Lateral 8-17. Special-status plants and animals that may occur near the temporary pump and stairway, as described above, include San Joaquin kit fox and Tipton kangaroo rat. Reclamation's biological impacts determination relies on compliance with the applicable requirements described in the existing Biological Opinion (USFWS 2005) and as summarized below.

San Joaquin Kit Fox The project area is surrounded by orchards, which could potentially provide habitat utilized by kit fox (Warrick et al. 2007). They are highly mobile and they have excellent vision. In addition, San Joaquin kit fox are predominately nocturnal and would likely be inactive when work is being conducted.

A qualified biologist would conduct pre-construction surveys for San Joaquin kit fox at least 200 feet outside of both Lateral 8-17 and Lateral 8-25 boundary 14 to 30 days prior to initiation of any ground disturbance or construction activity (USFWS 2011). If no sign or evidence of San Joaquin kit fox is found, it is likely that they are not present in the area of disturbance and would not be directly affected by the Proposed Action. However, if there is evidence of any dens or signs of the kit fox, the project would be halted immediately and Reclamation staff notified within two working days. The project would be placed on hold until further analysis with Reclamation staff, and if necessary, consultation with the USFWS is complete.

Tipton kangaroo rat Agricultural practices require frequent ground disturbances and most likely eliminate any suitable habitat for Tipton kangaroo rats. If any rodents are in the area during construction activities, they would be expected to be inside burrows.

To insure that the Proposed Action would avoid disturbances, injury or mortality to Tipton kangaroo rats, direct observation for the species and searching for diagnostic sign (burrows, scats, tail drags, dust baths, precincts and hay stacking, etc.) and any potential kangaroo rats burrows must be noted during pre-construction surveys for San Joaquin kit fox. If no sign or evidence of kangaroo rat is found, it is likely that they are not present in the area of disturbance and would not be directly affected by the Proposed Action. If any small mammal burrows are found within the proposed construction zone during the pre-activity survey, the burrows would be flagged with pin flags and the project would be placed on hold until further analysis with Reclamation staff, and if necessary, consultation with the USFWS is completed.

Cumulative Effects

Biological resources would continue to be affected by other types of activities that are ongoing but unrelated to the Proposed Action. However, the Proposed Action would have little effect on habitats of importance to special-status species, and all effects are temporary and outside of suitable habitat. Since construction activities would be short-term, the Proposed Action, when added to other past, present and future actions, would be discountable to adverse cumulative impacts to wildlife, plants, or habitat resources.

3.6 Cultural Resources

3.6.1 Affected Environment

Cultural resources is a term used to describe both „archaeological sites' depicting evidence of past human use of the landscape and the „built environment' which is represented in structures such as dams, roadways, and buildings. The National Historic Preservation Act (NHPA) of 1966 is the primary Federal legislation which outlines the Federal Government's responsibility to cultural resources. Other applicable cultural resources laws and regulations that could apply include, but are not limited to, the Native American Graves Protection and Repatriation Act, and the Archaeological Resources Protection Act. Section 106 of the NHPA requires the Federal Government to take into consideration the effects of an undertaking on cultural resources listed on or eligible for inclusion in the National Register of Historic Places. Those resources that are on or eligible for inclusion in the National Register are referred to as historic properties.

The Section 106 process is outlined in the Federal regulations at 36 CFR Part 800. These regulations describe the process that the Federal agency (Reclamation) takes to identify cultural resources and the level of effect that the proposed undertaking will have on historic properties. In summary, Reclamation must first determine if the action is the type of action that has the potential to affect historic properties. If the action is the type of action to affect historic properties, Reclamation must identify the area of potential effects (APE), determine if historic properties are present within that APE, determine the effect that the undertaking will have on historic properties, and consult with the State Historic Preservation Office, to seek concurrence on Reclamation's findings. In addition, Reclamation is required through the Section 106 process to consult with Indian Tribes concerning the identification of sites of religious or cultural significance, and consult with individuals or groups who are entitled to be consulting parties or have requested to be consulting parties.

The San Joaquin Valley is rich in historical and prehistoric cultural resources. Cultural resources in this area are generally prehistoric in nature and include remnants of native human populations that existed before European settlement. Prior to the 18th Century, many Native American tribes inhabited the Central Valley. It is possible that many cultural resources lie undiscovered across the valley. The San Joaquin Valley supported extensive populations of Native Americans, principally the Northern Valley Yokuts, in the prehistoric period. Cultural studies in the San Joaquin Valley have been limited. The conversion of land and intensive farming practices over the last century has probably disturbed many Native American cultural sites.

Resources within the scope of this project include historic features of the built environment, primarily those of the CVP. The CVP, authorized in 1935, is one of the most ambitious federal water storage, transfer, and delivery systems conceived and implemented in American history. The CVP altered the physiographic and socioeconomic landscape of California through redistribution of water from the northern wettest regions of the state to central California, one of the driest regions, for irrigation and municipal use. Components of the CVP have been determined eligible for inclusion in the National Register of Historic Places (NRHP) and have been prepared for inclusion in the NRHP through a multiple property nomination. The CVP multiple property nomination is currently being reviewed for submission to the Keeper of the National Register for inclusion in the NRHP.

3.6.2 Environmental Consequences

No Action

Under the No Action Alternative, there would be no Federal undertaking as described in the NHPA at Section 301(7). As a result, Reclamation would not be obligated to implement Section 106 of the NHPA and its implementing regulations at 36 CFR Part 800. Because there is no undertaking, impacts to cultural resources would not be evaluated through the Section 106 process. All operations would remain the same, resulting in no impacts to cultural resources.

Proposed Action

The Proposed Action as described in Section 2.2 of this EA constitutes an undertaking pursuant to Section 301(7) of the NHPA, requiring compliance with Section 106 of the NHPA and its implementing regulations at 36 CFR Part 800. All water deliveries and exchanges would occur through existing facilities and water would be provided within existing service area boundaries to areas that currently use water. The Proposed Action would, however, result in the construction of a new facility on the existing berm of the FKC. The FKC has been determined eligible for the NRHP as a component of the CVP Multiple Property National Register Nomination (2009). This proposed facility would consist of the installation of a steel walkway on the existing FKC embankment that would be needed to access a new flow meter and valve that would be attached to the underside of an existing overchute pipe (piped segment of 8.17 Lateral). Reclamation has applied the criteria of adverse effect pursuant to 36 CFR Part 800.5(a) and has found that this action does not constitute an adverse effect to the FKC or the CVP. In a letter of August 08, 2011, the State Historic Preservation Officer concurred with this finding (refer to Appendix D).

Cumulative Effects

Potential cumulative impacts to cultural resources include regular and ongoing maintenance of the FLC and periodic upgrades of facilities essential to continued operation. These actions are necessary to maintain the integrity of the FKC and are consistent with the treatment of historic properties as defined by the regulations at 36 CFR Part 68. Because maintenance and associated operation activities are consistent with the treatment of the FKC, there would be no foreseeable cumulative impacts to the FKC.

3.7 Indian Trust Assets

Indian Trust Assets (ITA) are legal interests in property held in trust by the U.S. for federally-recognized Indian tribes or individual Indians. An Indian trust has three components: (1) the trustee, (2) the beneficiary, and (3) the trust asset. ITA can include land, minerals, federally-reserved hunting and fishing rights, federally-reserved water rights, and in-stream flows associated with trust land. Beneficiaries of the Indian trust relationship are federally-recognized Indian tribes with trust land; the U.S. is the trustee. By definition, ITA cannot be sold, leased, or otherwise encumbered without approval of the U.S. The characterization and application of the U.S. trust relationship have been defined by case law that interprets Congressional acts, executive orders, and historic treaty provisions.

Consistent with President William J. Clinton's 1994 memorandum, "Government-to-Government Relations with Native American Tribal Governments," Bureau of Reclamation (Reclamation) assesses the effect of its programs on tribal trust resources and federally-

recognized tribal governments. Reclamation is tasked to actively engage federally-recognized tribal governments and consult with such tribes on government-to-government level (59 Federal Register 1994) when its actions affect ITA.

The U.S. Department of the Interior (DOI) Departmental Manual Part 512.2 ascribes the responsibility for ensuring protection of ITA to the heads of bureaus and offices (DOI 1995). Part 512, Chapter 2 of the Departmental Manual states that it is the policy of the Department of the Interior to recognize and fulfill its legal obligations to identify, protect, and conserve the trust resources of federally recognized Indian tribes and tribal members.

3.7.1 Affected Environment

The nearest ITA is the Tule River Reservation approximately 34 miles northeast from the project site.

3.7.2 Environmental Consequences

No Action

Under the No Action Alternative, there would be no impacts to ITA since conditions would remain the same as exiting conditions.

Proposed Action

The Proposed Action involves conveying water within existing facilities and the installations of a temporary diesel pump and metal stairway along the FKC. Since the nearest ITA is about 34 miles away, the Proposed Action does not have a potential to affect ITA (See Appendix D for determination).

Cumulative Effects

As the Proposed Action has no potential to affect ITA, the Proposed Action when added to past, present, or future actions would not contribute to cumulative impacts to ITA.

3.8 Socioeconomic Resources

3.8.1 Affected Environment

Kern County

Kern County is the third largest county in California. It is found at the southern end of California's Central Valley and is the gateway to Southern California, San Joaquin Valley, Sierra Nevada and the Mojave Desert.

More than 744,000 residents live and work in 11 incorporated cities and unincorporated communities. Kern County is a world class producer of food and fiber, with farm products distributed worldwide and a crop value the fourth highest among the nation's counties. Kern is the largest producer of petroleum of any county in the lower 48 states (Kern County 2010).

Alameda County

Alameda County is the seventh largest county in California. It is found in the San Francisco-Oakland, California metropolitan area. Over 1.4 million people live in Alameda County.

3.8.2 Environmental Consequences

No Action

Under the No Action alternative, there would be no impacts to socioeconomic resources as conditions would remain the same as existing conditions.

Proposed Action

Under the Proposed Action, this stored surplus water could be delivered by exchange to Zone 7 during drought conditions. The non-CVP would be stored and conveyed in existing facilities and no new construction with associated costs would be required. Therefore, the Proposed Action would not adversely affect socioeconomic resources.

Cumulative Effects

As the Proposed Action would have no effect on socioeconomic resources, the Proposed Action, when added to other past, present, and future actions, would not contribute to cumulative impacts to socioeconomic resources.

3.9 Environmental Justice

3.9.1 Affected Environment

Executive Order 12898, dated February 11, 1994, requires Federal agencies to ensure that their actions do not disproportionately impact minority and disadvantaged populations. The population of some small communities typically increases during late summer harvest. The market for seasonal workers on local farms draws thousands of migrant workers, commonly of Hispanic origin from Mexico and Central America.

3.9.2 Environmental Consequences

No Action

Under the No Action alternative CWD would not have a means of returning Zone 7's non-CVP water during a drought year due to possible allocation cuts to SWP water. If available, Zone 7 may have to purchase water from another seller which could be more expensive. The costs could be passed on to their customers; however, it is not known at this time how much of an increase would be assessed and how that would be distributed amongst Zone 7's customers.

Proposed Action

A WA contract would allow CWD to convey Zone 7's banked non-CVP water back to the district. The Proposed Action would not cause dislocation, changes in employment, or increase flood, drought, or disease. The Proposed Action would not disproportionately impact economically disadvantaged or minority populations. There would be no changes to existing conditions. Employment opportunities for low-income wage earners and minority population groups would be within historical conditions. Disadvantaged populations would not be subject to disproportionate impacts. Therefore, there would be no adverse impacts as a result of the Proposed Action.

Cumulative Effects

As the Proposed Action would not disproportionately impact economically disadvantaged or minority populations, the Proposed Action, when added to other past, present, and future actions, would not contribute to cumulative impacts to environmental justice.

3.10 Global Climate

3.10.1 Affected Environment

Climate change refers to significant change in measures of climate (e.g., temperature, precipitation, or wind) lasting for decades or longer. Many environmental changes can contribute to climate change (changes in sun's intensity, changes in ocean circulation, deforestation, urbanization, burning fossil fuels, etc.) (EPA 2008a).

Gases that trap heat in the atmosphere are often called greenhouse gases (GHG). Some GHG such as carbon dioxide (CO_2) occur naturally and are emitted to the atmosphere through natural processes and human activities. Other GHG (e.g., fluorinated gases) are created and emitted solely through human activities. The principal GHG that enter the atmosphere because of human activities are: CO_2, methane (CH_4), nitrogen oxides, and fluorinated gasses (EPA 2008a).

During the past century humans have substantially added to the amount of greenhouse gases in the atmosphere by burning fossil fuels such as coal, natural gas, oil and gasoline to power our cars, factories, utilities and appliances. The added gases, primarily CO_2 and CH_4, are enhancing the natural greenhouse effect, and likely contributing to an increase in global average temperature and related climate changes. There are uncertainties associated with the science of climate change (EPA 2008b).

More than 20 million Californians rely on the SWP and CVP. Increases in air temperature may lead to changes in precipitation patterns, runoff timing and volume, sea level rise, and changes in the amount of irrigation water needed due to modified evapotranspiration rates. These changes may lead to impacts to California's water resources and project operations. While there is general consensus in their trend, the magnitudes and onset-timing of impacts are uncertain and are scenario-dependent (Anderson et al. 2008).

3.10.2 Environmental Consequences

No Action

Implementation of the No Action Alternative would have no change on the composition of the atmosphere and therefore would have no direct or indirect effects to climate change.

Proposed Action

Water allocations are made dependent on hydrologic conditions and environmental requirements. Since Reclamation operations and allocations are flexible, any changes in hydrologic conditions due to global climate change would be addressed within Reclamation's operation flexibility and therefore water resource changes due to climate change would be the same with or without the Proposed Action.

The Proposed Action is the execution of a long-term WA contract for conveyance of non-CVP water through federal facilities and issue a right-of-use application to cross/access Reclamation lands for a temporary diesel pump. The use of the pump would be temporary and would result in below *de minimis* impacts to global climate change. Therefore, the Proposed Action would not adversely affect the global climate.

Cumulative Effects

Due to the use of fossil fuel diesel equipment, the Proposed Action would generate GHG emissions, mainly in the form of carbon dioxide. However, due to temporary equipment usage, the cumulative contribution of the GHG to climate change would be negligible and immeasurable.

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Section 4 Public Review Period

Reclamation posted the draft EA/FONSI for public review and comment on Reclamation's website. The public review comment period began December 6, 2010 and ended January 3, 2011. Reclamation received one set of comments, which can be found in Appendix E. Responses to the comments received are addressed below:

Response to comment #1:

Please refer to bullet 4 of Section 1.4, on page 4.

The water quality standards and thresholds were taken from Reclamation's water quality monitoring requirements, which were derived from California's Title 22 water quality standards. Before introduction into the FKC, the non-CVP water would be tested and required to, at a minimum, meet these standards. As appropriate, if at any time the non-CVP water quality is found to be below these standards through periodic monitoring and/or testing, then the non-CVP water would no longer be allowed to enter the FKC or until subsequent testing confirms that the water quality standards are met.

The Proposed Action does not involve introducing pollutants into the FKC and an NPDES permit is not required.

Through water quality monitoring and/or testing, the quality of water in the FKC after mixing with the non-CVP water under the Proposed Action would still be suitable for both M&I and agricultural purposes. The Proposed Action would be consistent in providing the maximum benefit reasonably attained to people of the state, and to balance those needs with environmental requirements. In addition, the Proposed Action would not result in water quality lower than applicable standards (Title 22); therefore, the Proposed Action would be in compliance with the State Anti-degradation Policy.

Response to Comment #2:

The statement has been changed to reflect that there would be no cumulative "adverse" impacts to FKC water quality. The Proposed Action involves water quality monitoring and/or testing, which requires that the non-CVP water would not be introduced into the FKC until water quality standards are met. This is consistent with Reclamation's policy for any project proposing to introduce non-CVP water into the FKC. In addition, the non-CVP water, as part of this Proposed Action, would be diverted from the FKC into the CVC (past AEWSD turnouts) where it would be exchanged and/or introduced into the Aqueduct by KCWA for delivery to Zone 7.

Response to Comment #3:

The public review period for this EA is not the appropriate avenue for which to comment on Reclamation's, *Policy for Accepting Non-Project Water into the Friant-Kern and Madera*

Canals, Water Quality Monitoring Requirements – 2011. Refer to bullet 4 in Section 1.4 for more information on Reclamation's water quality requirements.

Response to Comment #4:

Comment noted. Under the Proposed Action, the usage priority would be those established by the Friant Water Authority and outlined in the *Friant Operational Guidelines,* dated March 18, 2005.

Response to Comment #5:

Comment noted. The statement has been deleted from the Final EA.

Response to Comment #6:

Comment noted. These documents will be included in the Final EA.

Section 5 Consultation and Coordination

5.1 Fish and Wildlife Coordination Act (16 USC § 651 et seq.)

The Fish and Wildlife Coordination Act (FWCA) requires that Reclamation consult with fish and wildlife agencies (federal and state) on all water development projects that could affect biological resources. The amendments enacted in 1946 require consultation with the USFWS and State fish and wildlife agencies where the "waters of any stream or other body of water are proposed or authorized, permitted or licensed to be impounded, diverted or otherwise controlled or modified" by an agency under Federal discretion. Consultation is to be undertaken for the purpose of "preventing the loss of and damage to wildlife resources".

The Proposed Action is the execution of a Warren Act contract for the conveyance of non-CVP water (groundwater) in existing facilities. No waters of any stream or other body of water are proposed, authorized, permitted or licensed to be impounded, diverted or otherwise controlled or modified; therefore, FWCA does not apply.

5.2 Endangered Species Act (16 USC § 1531 et seq.)

Section 7 of this Act requires Federal agencies to ensure that all federally associated activities within the United States do not have adverse impacts on the continued existence of threatened or endangered species or on designated areas (critical habitats) that are important in conserving species. Action agencies must consult with the Service, which maintains current lists of species that have been designated as threatened or endangered, to determine the potential impacts a project may have on protected species.

The Proposed Action would support existing uses and conditions. No native lands would be converted or cultivated with this water. The water would be delivered to Zone 7 for M&I purposes and non-potable water would be delivered to Livermore for irrigation, through existing facilities.

Reclamation has determined that the Proposed Action would have No Effect to species listed and critical habitats designated under the ESA, and no consultation with the USFWS is required. This determination is based on the information presented previously in Section 3.5 and is largely reliant on the absence of listed species from areas that would be affected by the Proposed Action. Pre-construction biological surveys would be conducted before any ground-disturbing activities are to begin. If the surveys find that no special-status species are present within the project area, Reclamation's determination would remain. If the surveys detect the presence of listed species, then the Proposed Action would be paused while Reclamation revisits the ESA determination and completes any consultation that might be necessary with the USFWS.

5.3 National Historic Preservation Act (16 USC 470 et seq.)

Section 106 of the NHPA requires federal agencies to evaluate the effects of federal undertakings on historic properties. Reclamation has found, in consultation with the SHPO, that there would be no adverse effect on historic properties, and no further consultations are required.

5.4 Migratory Bird Treaty Act (16 USC § 703 et seq.)

The Migratory Bird Treaty Act implements various treaties and conventions between the U.S. and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the Act provides that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Subject to limitations in the Act, the Secretary of the Interior (Secretary) may adopt regulations determining the extent to which, if at all, hunting, taking, capturing, killing, possessing, selling, purchasing, shipping, transporting or exporting of any migratory bird, part, nest or egg will be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits and migratory flight patterns.

The Proposed Action would have no effect on birds protected by the Migratory Bird Treaty Act.

5.5 Clean Air Act (42 USC § 176 et seq.)

Section 176 (c) of the Clean Air Act (42 U.S.C. 7506 (c)) requires any entity of the Federal government that engages in, supports, or in any way provided financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable SIP required under Section 110 (a) of the Federal Clean Air Act (42 U.S.C. 7401 (a)) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with a SIP's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of those standards. Each federal agency must determine that any action that is proposed by the agency and that is subject to the regulations implementing the conformity requirements will, in fact conform to the applicable SIP before the action is taken.

On November 30, 1993, EPA promulgated final general conformity regulations at 40 CFR 93 Subpart B for all federal activities except those covered under transportation conformity. The general conformity regulations apply to a proposed federal action in a non-attainment or maintenance area if the total of direct and indirect emissions of the relevant criteria pollutants and precursor pollutant caused by the Proposed Action equal or exceed certain de minimis amounts thus requiring the federal agency to make a determination of general conformity.

The temporary emissions would not reach the de minimis threshold and therefore a conformity analysis is not required under the Clean Air.

5.6 Clean Water Act (16 USC § 703 et seq.)

Section 401

Section 401 of the Clean Water Act (CWA) (33 USC § 1311) prohibits the discharge of any pollutants into navigable waters, except as allowed by permit issued under sections 402 and 404 of the CWA (33 USC § 1342 and 1344). If new structures (e.g., treatment plants) are proposed, that would discharge effluent into navigable waters, relevant permits under the CWA would be required for the project applicant(s). Section 401 requires any applicant for an individual Corps dredge and fill discharge permit to first obtain certification from the state that the activity associated with dredging or filling will comply with applicable state effluent and water quality standards. This certification must be approved or waived prior to the issuance of a permit for dredging and filling.

No pollutants would be discharged into any navigable waters under the Proposed Action so no permits under Section 401 of the CWA are required.

Section 404

Section 404 of the CWA authorizes the Corps to issue permits to regulate the discharge of "dredged or fill materials into waters of the United States" (33 USC § 1344). No activities such as dredging or filling of wetlands or surface waters would be required for implementation of the Proposed Action, therefore permits obtained in compliance with CWA section 404 are not required.

5.7 Executive Order 11988 – Floodplain Management and Executive Order 11990 - Protection of Wetlands

Executive Order 11988 requires Federal agencies to prepare floodplain assessments for actions located within or affecting flood plains, and similarly, Executive Order 11990 places similar requirements for actions in wetlands. This action would not adversely affect floodplains or wetlands.

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Section 7 References

Alameda County. 2007. http://www.acgov.org/pwa/acfcdweb/web/home.html

Anderson, J, F Chung, M Anderson, L Brekke, D Easton, M Ejetal, R Peterson, and R Snyder. 2008. *Progress on Incorporating Climate Change into Management of California's Water Resources*. Climatic Change (2008) 87 (Suppl 1):S91–S108 DOI 10.1007/s10584-007-9353-1

CNDDB. 2011. California Department of Fish and Game's Natural Diversity Database, Version 3.1.1. RareFind 3. Last updated: October 2011.

DWR. 2007. http://www.des.water.ca.gov/mitigation_restoration_branch/rpmi_section/projects/EIR_index.cfm

DWR. 2009. Website - http://www.water.ca.gov/recreation/brochures/south.cfm

EPA. 2008a: Website – Climate Change, Basic Information. http://www.epa.gov/climatechange/basicinfo.html

EPA. 2008b: Website – Climate Change, Science. http://www.epa.gov/climatechange/science/index.html

ESRP. 2007. Website: http://esrpweb.csustan.edu/speciesprofiles/profile.php?sp=gasi

FWUA. 2007. http://www.fwua.org/friant_division.html

Kern County. 2010. http://www.co.kern.ca.us/econdev/

NKWSD. 2001. *Initial Study of Environmental Aspects of the North Kern Groundwater Storage Project*. October 2001. Prepared by Bookman-Edmonston Consulting Engineers, Bakersfield, CA. Prepared for North Kern Water Storage District, Kern County, CA.

Reclamation, 2001. *Biological Opinion on U.S. Bureau of Reclamation Long Term Contract Renewal of Friant Division and CVC Contractors.* January, 2001. Prepared by United States Bureau of Reclamation and U.S. Fish and Wildlife Service, Sacramento, CA.

Reclamation. 2007a. http://www.usbr.gov/dataweb/html/friant.html#general

Reclamation. 2007b. "*Friant-Kern Canal/Cross Valley Canal Intertie Construction Project* Environmental Assessment". http://www.usbr.gov/mp/nepa/documentShow.cfm?Doc_ID=2860

SWRCD. 2007. "*Tentative Waste Discharge Requirements for Oildale Energy LLC Oildale Cogeneration Facility, Kern County.*" http://www.swrcb.ca.gov/rwqcb5/tentative/0503/Uncontested/OildaleWdrs/WDR.pdf

Schafer, R. L. and Associates. 2002. *Draft Cawelo Water District Environmental Initial Study for the Modified Famoso Water Banking Project*, August 2002, 22 pgs.

SJVAPCD. 2009a. Ambient Air Quality Standards and Valley Attainment Status. Website: http://www.valleyair.org/aqinfo/attainment.htm Accessed: November 30, 2009.

SJVAPCD. 2009b. Requirements for Agricultural Operators – Do I need a Permit? Website: http://www.valleyair.org/General_Info/AGLoader.htm Accessed: November 30, 2009.

State Water Contractors. 2005. *DSM2 Extension for the California Aqueduct, South Bay Aqueduct, and Delta-Mendota Canal*. Prepared for State Water Contractors and Municipal Water Quality Investigation Program. June 2005.

Taylor, D. W. 1989. Status survey of San Joaquin woolly-threads (*Lembertia congdonii*). U.S. Fish and Wildlife Service, Sacramento, CA, Unpubl. Rep., 27 pp. + Appendices.

US Census Bureau. 2000. http://quickfacts.census.gov/qfd/states/06/06029.html

USFWS. 1989. Wetlands *of the California Central Valley: status and trends-1939 to mid-1980's*. Portland, Oregon. 28 pp.

USFWS. 1990. *Determination of endangered status for five plants from the southern San Joaquin Valley.* Federal Register. 55, 139: 29361 - 29370.

USFWS. 1995. *Formal Endangered Species Consultation on the Operations and Maintenance Program Occurring on Bureau of Reclamation Lands within the South-Central California Area Office (1-1-04-0368).* Sacramento Fish and Wildlife Office.

USFWS. 1998. *Recovery plan for upland species of the San Joaquin Valley, California*. Portland, OR. 319 pp.

USFWS. 2011. Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance. Sacramento Fish and Wildlife Office, US Fish and Wildlife Service, January 2011.

USFWS. 2011. Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance. Sacramento Fish and Wildlife Office, US Fish and Wildlife Service, January 2011.

Warrick, G. D. Clark, H. O. Kelly, P. A. Williams, D. F. and B. L. Cypher. 2007. *Use of agricultural lands by San Joaquin kit foxes.* Western North American Naturalist 67: 270-277.

Williams, D. F., and K. S. Kilburn. 1992. The conservation status of the endemic mammals of the San Joaquin faunal region, California. Proceedings of the conference, Endangered species of the San Joaquin Valley, California: a conference on their biology, conservation, and management. The California Energy Commission, Sacramento, 388 pp.

Zone 7. 2007. http://www.zone7water.com/

Zone 7. 2006. *Annual Report for the Groundwater Management Program, 2006 Water Year*. http://www.zone7water.com/images/pdf_docs/water_supply/2006AnnRptGMP-1and2CoverTOCIntroBackground.pdf

Zone 7. 2005. *Zone 7 Water Agency Well Master Plan Final EIR. Responses to Comments SCH: 2002032163.* http://www.zone7water.com/images/pdf_docs/env_documents/wmp_eir-3_impact-mit.pdf

Appendix A – Water Quality Standards

Appendix A

Table 1 - Water Quality Monitoring Requirements

What will be measured in the water?	Water to be Tested	How often will a sample be collected?	When will the samples be collected?	Who will collect samples? (7)
Constituents of Concern (1)(6)	CVP water in the canal	Quarterly	January, April, June, October	Reclamation (CVP Baseline Program)
	Non-project water at source (2)	Annual	Within 3 days of pumping into the canal	Contractor
Bacterial organisms (3)	Canal water upstream of discharge point (5)	Monthly	While pumping into the canal	Contractor
	Non-project water at source (2)	Monthly	While pumping into the canal	Contractor
	Canal water downstream of discharge point (5)	Monthly	While pumping into the canal	Contractor
Electrical conductivity, turbidity (4)	Canal water upstream of discharge point (5)	Weekly	While pumping into the canal	Friant Water Authority
	Non-project water at source (2)	Weekly	While pumping into the canal	Friant Water Authority
	Canal water downstream of discharge point (5)	Weekly	While pumping into the canal	Friant Water Authority
Other constituents of concern (6)	Canal water upstream of discharge point (5)	(6)	While pumping into the canal	Contractor
	Non-project water at source (2)	(6)	While pumping into the canal	Contractor
	Canal water downstream of discharge point (5)	(6)	While pumping into the canal	Contractor

Notes:

(1) See Table 2.

(2) Definition of Non-Project Water from Article 1 of the Contract; perhaps list the specific sites of approved wells and mileposts on the canal of discharge points.

(3) Cryptosporidium, Giardia, total coliform bacteria.

(4) Field measurements.

(5) Location to be determined by the Contracting Officer.

(6) To be determined by the Contracting Officer, if necessary.

(7) All samples must be collected and analyzed according to the 2004 Quality Assurance Project Plan.

This water quality monitoring program is subject to review at any time by the Contracting Officer.

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Table 2. California and Federal Drinking Water Standards (Maximum Contaminant Levels)

CONSTITUENT OR PARAMETER	Units	California Department of Health Services (DHS) Primary MCL	Note	Secondary MCL	Note	U.S. Environmental Protection Agency (US EPA) Primary MCL	Note	Secondary MCL	Note	CAS Registry Number	Synonyms and Abbreviations
General Mineral											
Chloride	mg/L			250	f			250		16887-00-6	Cl–
Chlorine (as Cl_2)	mg/L	4	k, x			4	c			7782-50-5	Cl2
Chlorite	mg/L	1	k			1	t			7758-19-2	ClO_2–
Cyanide	ug/L	150				200	r			57-12-5	CN–, HCN, Hydrogen cyanide
Fluoride	mg/L	2	o			4	o	2		16984-48-8	F–, Fluorine, soluble
Foaming agents (MBAS)	ug/L			500				500			Methylene blue active substances
Iron	ug/L			300				300		7439-89-6	Fe
Langlier Index (corrosivity)				Non-corrosive				Non-corrosive			
Manganese	ug/L			50				50		7439-96-5	Mn
Nitrate (as N)	mg/L	45	e			10	l			14797-55-8	NO_3–
Nitrite	mg/L	1	l			1	l			14797-65-0	NO_2–
pH	units							6.5 to 8.5	b		negative log of H+ concentration
Specific conductance (EC)	uS/cm			900	g						Electrical Conductivity, EC
Sulfate	mg/L			250	f	500	k	250		14808-79-8	SO_4=
Total dissolved solids (TDS)	mg/L			500	h			500			TDS
Zinc	mg/L			5				5		7440-66-6	Zn
General Physical											
Color	units			15				15			
Odor	threshold units			3				3			
Turbidity	NTU	1 / 5	j, k	5		1 / 5	j				
Inorganic Chemical Metals											
Aluminum	ug/L	1,000		200				50 to 200	b	7429-90-5	Al
Antimony	ug/L	6				6				7440-36-0	Sb
Arsenic	ug/L	50				10	as of 1/23/2006			7440-38-2	As
Asbestos	MFL					7				1332-21-4	
Barium	ug/L	1,000				2,000				7440-39-3	Ba
Beryllium	ug/L	4				4				7440-41-7	Be
Cadmium	ug/L	5				5				7440-43-9	Cd
Chromium (total)	ug/L	50				100				7440-47-3	Cr (total)

Copper	ug/L	1,300	q	1,000	1,300	q	1,000	7440-50-8	Cu
Lead	ug/L	15	q		15	q		7439-92-1	Pb
Mercury (inorganic)	ug/L	2			2			7439-97-6	Hg (inorganic)
Nickel	ug/L	100						7440-02-0	Ni
Selenium	ug/L	50			50			7782-49-2	Se
Silver	ug/L			100			100	7440-22-4	Ag
Thallium	ug/L	2			2			7440-28-0	Th
Radiochemistry									
Radioactivity, Gross Alpha	pCi/L	15	p		15	p			Gross Alpha radioactivity
Radioactivity, Gross Beta	pCi/L	50 pCi/L or 4 mrem/yr	k, w		4 mrem/yr				Gross Beta radioactivity
Radium-226 + Radium-228	pCi/L	5			5			7440-14-4	226Ra + 228Ra
Radon	pCi/L				300	k		14859-67-7	Rn
Strontium-90	pCi/L	8	w					10098-97-2	90Sr
Tritium	pCi/L	20,000	w					10028-17-8	3H
Uranium	pCi/L	20			30	as of 12/8/2003		7440-61-1	U
Microbiology									
Cryptosporidium									
Fecal Coliform									
Giardia									
Total Coliform									
Organics									
Acrylamide	ug/L		m			m		79-06-1	2-Propeneamide
Alachlor	ug/L	2			2			15972-60-8	Alochlor, Lasso, Alanex
Aldicarb	ug/L				3	u		116-06-3	Temik
Aldicarb sulfone	ug/L				3	u		1646-88-4	
Aldicarb sulfoxide	ug/L				4	u		1646-87-3	
Atrazine	ug/L	1			3			1912-24-9	Aatrex, Atranex, Crisazina
Bentazon	ug/L	18						25057-89-0	Basagran
Benz(a)anthracene	ug/L				0.1	k		56-55-3	1,2-Benzanthracene, Benzo(a)anthracene, a polynuclear aromatic hydrocarbon
Benzene	ug/L	1			5			71-43-2	
Benzo(a)pyrene	ug/L	0.2			0.2			50-32-8	BaP, 3,4-Benzopyrene, a polynuclear aromatic hydrocarbon
Bromate	ug/L	10	k		10	l		15541-45-4	
Bromoacetic acid	ug/L	60	k, n		60	n, l		79-08-3	A haloacetic acid
Bromodichloromethane	ug/L	100 / 80	a, k		80	a, v		75-27-4	Dichlorobromomethane, BDCM, a trihalomethane

Bromoform	ug/L	100 / 80	a, k		80	a, v			75-25-2	Tribromomethane, a trihalomethane
Carbofuran	ug/L	18			40				1563-66-2	Furadan
Carbon tetrachloride	ug/L	0.5			5				56-23-5	Tetrachloromethane, Freon 10
Chloramine	ug/L	4,000	k, x		4,000	c			127-65-1	NH2C, IMonochloramine
Chlordane	ug/L	0.1			2				57-74-9	Chlordan
Chlorine dioxide	ug/L	800	k, y		800	d			10049-04-4	ClO2
Chloroacetic acid	ug/L	60	k, y		60	n, t			79-11-8	Monochloroacetic acid, A haloacetic acid
Chlorobenzene	ug/L	70			100				108-90-7	Monochlorobenzene
Chloroform	ug/L	100 / 80	a, k		80	a, v			67-66-3	Trichloromethane, Freon 20
2,4-D	ug/L	70			70				94-75-7	2,4-Dichlorophenoxyacetic acid
Dalapon	ug/L	200			200				75-99-0	Dowpon, 2,2-Dichloropropionic acid
Dibromoacetic acid	ug/L	60	k, n		60	n, t			631-64-1	A haloacetic acid
Dibromochloromethane (THM)	ug/L	100 / 80	a, k		80	a, v			124-48-1	Chlorodibromomethane
Dibromochloropropane (DBCP)	ug/L	0.2			0.2				96-12-8	1,2-Dibromo-3-chloropropane, DBCP
1,2-Dibromoethane	ug/L	0.05			0.05				106-93-4	Ethylene dibromide, EDB
Dichloroacetic acid	ug/L	60	k, n		60	n, t			79-43-6	A haloacetic acid
1,2-Dichlorobenzene	ug/L	600			600		10	k	95-50-1	o-Dichlorobenzene, o-DCB
1,4-Dichlorobenzene	ug/L	5			75		5	k	106-46-7	p-Dichlorobenzene, PDB, p-DCB
1,1-Dichloroethane	ug/L	5							75-34-3	1,1-DCA
1,2-Dichloroethane	ug/L	0.5			5				107-06-2	1,2-DCA, Ethylene dichloride, Freon 150
1,1-Dichloroethylene	ug/L	6			7				75-35-4	1,1-Dichloroethene, 1,1-DCE, Vinylidene chloride
cis-1,2-Dichloroethylene	ug/L	6			70				156-59-2	cis-1,2-Dichloroethene, cis-1,2-DCE
trans-1,2-Dichloroethylene	ug/L	10			100				156-60-5	trans-1,2-Dichloroethene, trans-1,2-DCE
Dichloromethane	ug/L	5			5				75-09-2	Methylene chloride
1,2-Dichloropropane	ug/L	5			5				78-87-5	Propylene dichloride component of D-Dminor component of Telone
1,3-Dichloropropene	ug/L	0.5							542-75-6	1,3-Dichloropropylene component of D Dmajor component of Telone
Di(2-ethylhexyl)adipate	ug/L	400			400				103-23-1	DEHA
Di(2-ethylhexyl)phthalate	ug/L	4			6				117-81-7	Bis(2-ethylhexyl) phthalate, DEHP, a phthalate acid ester (PAE)
Dinoseb	ug/L	7			7				88-85-7	DNBP
Dioxin	ug/L	0.00003			0.00003				1746-01-6	2,3,7,8-TCDD, 2,3,7,8-Tetrachlorodibenzo-p-dioxin
Diquat	ug/L	20			20				85-00-7	Aquacide, Reglone
EDB (Ethylene dibromide)	ug/L				0.05				206-93-4	

Endothal	ug/L	100			100					145-73-3	Endothall
Endrin	ug/L	2			2					72-20-8	Endrex, Hexadrin
Epichlorohydrin	ug/L		s			s				106-89-8	Chloropropylene, 1-Chloro-2,3-epoxypropane
Ethylbenzene	ug/L	300			700			30	k	100-41-4	Phenylethane
Glyphosate	ug/L	700			700					1071-83-6	Roundup,Glyphosate isopropylamine salt
Halomethanes	ug/L				100 / 80	a, k					Methanes, halo-
Heptachlor	ug/L	0.01			0.4					76-44-8	
Heptachlor epoxide	ug/L	0.01			0.2					1024-57-3	
Hexachlorobenzene	ug/L	1			1					118-74-1	PerchlorobenzeneHCB
Hexachlorocyclopentadiene	ug/L	50			50			8	k	77-47-4	HEX, HCCPD
Lindane (gamma-BHC)	ug/L	0.2			0.2					58-89-9	Lindane, gamma-Benzene hexachloride, gamma-Hexachlorocyclohexane
Methoxychlor	ug/L	30			40					72-43-5	
Methyl t-butyl ether (MBE)	ug/L	13		5						1634-04-4	MIBE, 2-Methoxy-2-methylpropane, Methyl 1,1-dimethylethyl ether
Molinate	ug/L	20								2212-67-1	Ordram
Oxamyl	ug/L	50			200					23135-22-0	Vydate
Pentachlorophenol	ug/L	1			1					87-86-5	PCP, Penta
Picloram	ug/L	500			500					1918-02-1	Tordon
Polychlorinated biphenyls	ug/L	0.5			0.5					1336-36-3	PCBs
Simazine	ug/L	4			4					122-34-9	Princep
Styrene	ug/L	100			100			10	k	100-42-5	Vinylbenzene
2,3,7,8-TCDD (Dioxin)	ug/L	0.00003			0.00003					1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin, Dioxin
1,1,2,2-Tetrachloroethane	ug/L	1								79-34-5	
Tetrachloroethylene (PCE)	ug/L	5			5					127-18-4	Tetrachloroethene, Perchloroethylene, PCE
Thiobencarb	ug/L	70		1						28249-77-6	Benthiocarb, Bolero
Toluene	ug/L	150			1,000			40	k	108-88-3	Methylbenzene
Toxaphene	ug/L	3			3					8001-35-2	Camphechlor, Chlorocamphene
2,4,5-TP (Silvex)	ug/L	50			50					93-72-1	Silvex, 2 (2,4,5-Trichlorophenoxy) propionic acid
Trichloroacetic acid	ug/L	60	k, n		60	n, t				76-03-9	A haloacetic acid
1,2,4-Trichlorobenzene	ug/L	5			70					120-82-1	unsymmetrical-Trichlorobenzene
1,1,1-Trichloroethane	ug/L	200			200					71-55-6	1,1,1-TCA, Methyl chloroform
1,1,2-Trichloroethane	ug/L	5			5					79-00-5	1,1,2-TCA, Vinyl trichoride
Trichloroethylene (TCE)	ug/L	5			5					79-01-6	Trichloroethene, TCE
Trichlorofluoromethane	ug/L	150								75-69-4	Fluorotrichloromethane, Freon 11
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	1,200								76-13-1	Trichlorotrifluoroethane, Freon 113

Total trihalomethanes	ug/L		80				
Vinyl chloride	ug/L	0.5	2			75-01-4	VC, Chloroethene, Chloroethylene
Xylene(s)	ug/L	1,750	10,000	20	k	1330-20-7	o-Xylene, m-Xylene, p-Xylene

Source Data:

Adapted from Marshack, Jon B. August 2003. A Compilation of Water Quality Goals. Prepared for the California Environmental Protection Agency, Regional Water Quality Control Board.

References:

California Department of Health Services, California Code of Regulations, Title 22, Division 4, Chapter 15, Domestic Water Quality and Monitoring, *http://www.dhs.ca.gov/ps/ddwem/publications/Regulations/regulations_index.htm.*

California Department of Health Services, Division of Drinking Water and Environmental Management, *Drinking Water Standards* (16 May 2003), *http://www.dhs.ca.gov/ps/ddwem/chemicals/mcl/regextract.pdf.*

U.S. Environmental Protection Agency, Summer 2002. 2002 Edition of the Drinking Water Standards and Health Advisories. EPA 822-R-02-038. Washington, DC. *http://www.epa.gov/OGWDW/creg.html*

Notes for Table 2. California and Federal Drinking Water Standards (Maximum Contaminant Levels)

Note	Marshack	Notes
a	(19)	For total trihalomethanes (sum of bromoform, bromodichloromethane, chloroform and dibromochloromethane); based largely on technology and economics.
b	(30)	This limit has a range of values between the first and second numbers shown.
c	(66)	Measured as Cl. Federal limit effective 1/1/02 for surface water systems serving >10,000 people. Federal limit effective 1/1/04 for all other systems. Maximum residual disinfectant level and goal. Applies only if this disinfectant is used.
d	(67)	Measured as ClO_2. Federal limit effective 1/1/02 for surface water systems serving >10,000 people. Federal limit effective 1/1/04 for all other systems. Maximum residual disinfectant level and goal. Apply only if this disinfectant is used.
e	(72)	As NO_3; in addition, MCL for total nitrate plus nitrite = 10,000 ug/L (as N).
f	(73)	Recommended level; Upper level = 500 mg/L; Short-term level = 600 mg/L.
g	(74)	Recommended level; Upper level = 1600 umhos/cm; Short-term level = 2200 umhos/cm.
h	(75)	Recommended level; Upper level = 1000 mg/L; Short-term level = 1500 mg/L.
i	(77)	For 1,2- and 1-3-dichlorobenzenes.
j	(84)	Systems that use conventional or direct filtration may not exceed 1 NTU at any time or 0.3 NTU for 95th percentile value; stems that use other "alternative" filtration systems may not exceed 5 NTU at any time or 1 NTU for 95th percentile value.
k	(100)	Proposed; applies only to second value if two separate values are listed; applies to range if a range of values is listed.
l	(103)	As nitrogen (N); in addition, limit for total nitrate + nitrite = 10,000 ug/L (as N).
m	(105)	Treatment Technique: Not to exceed 0.05% monomer in polyacrylamide when dosed at 1 mg/L for drinking water treatment.
n	(106)	For five haloacetic acids (sum of monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid).
o	(109)	Optimal fluoride level and (range) vary with annual average of maximum daily air temperature; 50.0 to 53.7 degrees F - 1.2 (1.1 to 1.7) mg/L; 53.8 to 58.3 degrees F - 1.1 (1.0 to 1.7) mg/L; 58.4 to 63.8 degrees F - 1.0 (0.9 to 1.5) mg/L; 63.9 to 70.6 degrees F - 0.9 (0.8 to 1.4) mg/L; 70.7 to 79.2 degrees F - 0.8 (0.7 to 1.3) mg/L; 79.3 to 90.5 degrees F - 0.7 (0.6 to 1.2) mg/L.
p	(110)	Picocuries per liter; including Radium-226 but excluding Radon and Uranium.
q	(111)	MCL includes this "Action level" to be exceeded in no more than 10% of samples at the tap.
r	(137)	Expressed as free cyanide (as CN).
s	(145)	Treatment Technique: Not to exceed 0.01% residual when dosed at 20 mg/L for drinking water treatment.
t	(147)	Effective 1/1/2002 for surface water systems serving >10,000 people; effective 1/1/2004 for all other systems.
u	(148)	The sum of aldicarb, aldicarb sulfoxide and aldicarb sulfone should not exceed 7 ug/L because of similar mode of action. Administrative stay of the effective date.
v	(149)	Former 100 ug/L total trihalomethane MCL effective until 1/1/2004 for systems serving 10,000 people or less.
w	(171)	Intended to ensure that exposure above 4 millirem/yr does not occur.
x	(175)	Measured as Cl_2. Maximum residual disinfectant level.
y	(176)	Measured as ClO_2. Maximum residual disinfectant level.

Adapted from Marshack, Jon B. August 2003. A Compilation of Water Quality Goals. Prepared for the California Environmental Protection Agency, Regional Water Quality Control Board.

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Appendix B – Lateral Photos


NKWSD 8.17 Lateral Pipeline
Across Friant-Kern Canal
Showing Discharge Pipe
06/01/06


NKWSD 8.17 Lateral
Looking East from
Friant-Kern Canal
06/01/06


NKWSD 8.17 Lateral
Looking East at Diversion
from Lerdo Canal
06/01/06


NKWSD 8.17 Lateral
Looking West from
Lerdo Canal
06/01/06


NKWSD 8.25 Lateral
Looking West at Friant-
Kern Canal Siphon
06/01/06


NKWSD 8.25 Lateral
Looking West at Friant-Kern Canal
Siphon.
06/01/06


NKWSD 8.25 Lateral
Looking West at Friant-Kern
Canal Siphon
06/01/06

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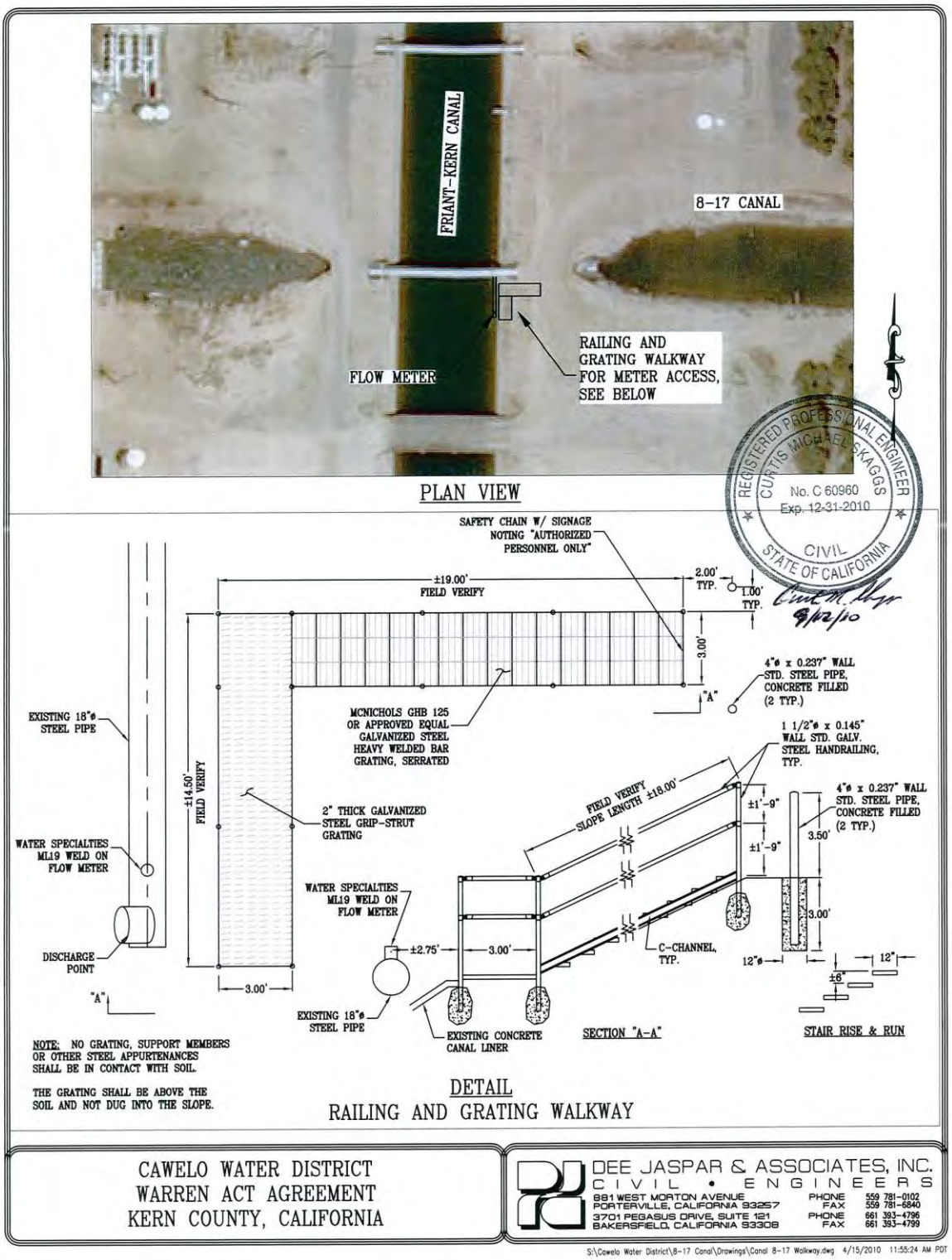
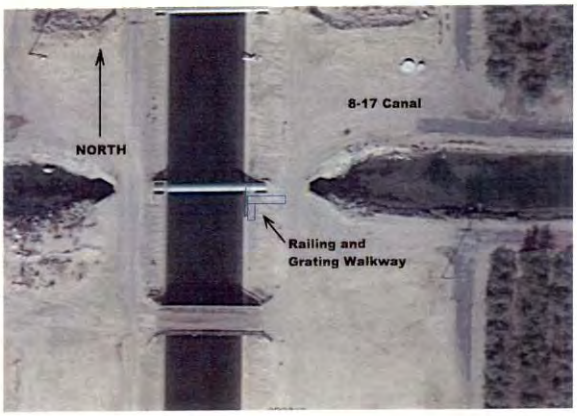
Appendix C – Drawings and Specifications




2010/03/12


NORTH
Spill
Containment
System
8-25 Canal


2010/03/12


8-17 Canal
NORTH
Railing and
Grating Walkway

RAIN FOR RENT

Spillguard™
Portable Containment Berms

FEATURES

- Lightweight
- Compact
- Portable
- Durable
- No Inflation Necessary, Sets Up in Minutes
- Heavy Duty, Chemical Resistant Materials

TECHNICAL

The SPILLGUARD™ berm is a compact, portable system ideal for use with temporary liquid storage tanks, pumps, or other equipment used in handling hazardous materials. The SPILLGUARD™ berm can be set up in minutes. The patented, collapsible walls and light-weight materials allow for quick deployment. Tough, one piece construction, reinforced seams, and chemically resistant materials give extra protection under field conditions.

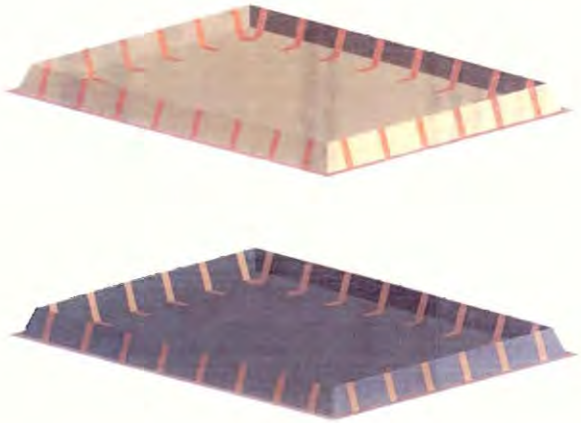
MATERIAL SPECIFICATIONS

The SPILLGUARD™ berm is manufactured of heavy duty 35 mil polyurethane coated fabric that offers excellent chemical resistance characteristics and durability. The unique design, patented collapsible walls, and compact size allow for convenient storage. SPILLGUARD™ units are available in a variety of sizes and can be made to fit specific applications. The heavy duty ground tarp and traffic belting supplied with the unit gives the drive-on capabilities and operator safety. Chemical and environmental resistance data available upon request.

Rain for Rent
P.O. Box 2248 • Bakersfield, CA 93303
800-742-7246 • rainforrent.com

RAIN FOR RENT

DASH #	PART NUMBER	MATERIAL	COLOR	APPROX WEIGHT
-202	1001-00317-202	32 OZ POLYURETHANE	TAN WITH ORANGE SUPPORTS	90 LBS
-102	1001-00317-102	46 OZ MODIFIED VINYL	BLACK WITH GOLD SUPPORTS	120 LBS



REVISIONS

ZONE	REV.	DESCRIPTION	DATE	APPROVED

CAD MAINTAINED

NOTES:

1. FOR USE IN SECONDARY CONTAINMENT OF AROMATIC HYDROCARBONS AND OTHER CHEMICALS (SEE COMPATIBILITY TABLE)
2. MATERIAL: SEE TABLE 1
3. COLOR: SEE TABLE 1
4. APPROXIMATE WEIGHT: SEE TABLE 1
5. APPROXIMATE FOLDED SIZE: 30"X30"X8"
6. ALL SEAMS ARE NOMINAL 1" WELDS, NO EPOXIES OR ADHESIVES
7. STAKING GROMMETS ARE SPACED APPROXIMATELY EVERY 24 INCHES AND ONE IN EACH CORNER
8. PATENTED INSIDE SUPPORT STRAP DESIGN TO ELIMINATE TRIPPING HAZARD (PATENT NUMBER: 5316175)
9. EACH STRAP IS REINFORCED WITH DOUBLE RIBBED ALUMINUM SUPPORTS ALONG WALL AND TRIANGULATED LEG
10. DRAIN VALVES AVAILABLE UPON REQUEST
11. ALL WALL TOPS HAVE 1" HEM FOR ADDITIONAL SUPPORT
12. FULL CHEMICAL/ENVIRONMENTAL RESISTANCE TABLE AVAILABLE AT: WWW.BASICCONCEPTS.COM/RESISTANCETABLE.ASP

MATERIAL NA

FINISH NA

TITLE: BERM, SPILLGUARD, 12'X16'X12", INSIDE STRAP

SIZE B DWG. NO. 1001-00317-XXX REV -

SCALE: 1:30 SHEET 1 OF 3

Appendix D – Reclamation Determination Documentation

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From: Rivera, Patricia L
To: Inthavong, Michael T
Subject: RE: ITA Request Form (EA-06-066)
Date: Wednesday, September 14, 2011 6:50:31 AM

Michael,

I reviewed the proposed action to execute a long-term Warren Act contract with Cawelo Water District (CWD), which would allow the district to convey up to 20,000 acre-feet of non-Central Valley Project water in the Friant-Kern Canal (FKC). Additionally, Reclamation proposes to issue a right-of-use license to CWD for access across Reclamation right-of-way and to construct structures at mileposts 131.34 and 133.43 along the FKC. A temporary diesel pump would be installed at milepost 131.34 and a metal walkway/stairway would be installed at milepost 133.43.

The proposed action does not have a potential to affect Indian Trust Assets. The nearest ITA is the Tule River Reservation approximately 34miles NE from the project site.

Patricia

From:	Soule, William E
To:	Inthavong, Michael T; Clinton, Patricia L
Cc:	Perry, Laureen (Laurie) M; Overly, Stephen A; Bruce, Brandee E; Nickels, Adam M; Williams, Scott A; Barnes, Amy J; Goodsell, Joanne E; Dunay, Amy L; Fogerty, John A
Subject:	RE: Cawelo Warren Act EA
Date:	Wednesday, August 24, 2011 2:42:14 PM
Attachments:	EA-06-66CWDCR EDITS 20yrWarrenAct version 11-3-10rbedits1.doc

Michael:

Re: Long-Term Warren Act Contract with Cawelo Water District (Tracking No. 11-SCAO-29)

The activities associated with Reclamation entering into a Long-Term Warren Act Contract with the Cawelo Water District will result in no adverse effect to historic properties for the minor modification of the Friant-Kern Canal (FKC) from the proposed approval of a contract pursuant to the Warren Act of 1911 (43 U.S.C. §523) to transport non-Central Valley Project (CVP) water through Federal facilities. Reclamation proposes to execute this long-term contract to convey up to 20,000 acre-feet of non-CVP water from the CWD via state (California Aqueduct) and private canals to the FKC, when capacity is available. Although these actions involve the movement of water through existing facilities, a steel railing and grating walkway/stairway will be installed at Reclamation's FKC at milepost 133.43 (Enclosure 1).

In an effort to identify historic properties within the APE, Reclamation cultural resources staff consulted in-house archives which indicated that the only cultural resource within the APE is the FKC. The FKC was determined eligible for the National Register of Historic Places (NRHP) by Reclamation as a component of the CVP Multiple Property Nomination Form (2009 Draft) Considering the limited nature of the proposed construction, in conjunction with the location of the APE being entirely within areas previously disturbed by the construction of the FKC, Reclamation has concluded that these identification efforts are adequate for the current undertaking. Reclamation has applied the criteria of adverse effect in accordance with 36 CFR Part 800.5(a) and has concluded that the actions proposed for this undertaking consist of standard facility modifications that are periodically necessary for the continued effective operation of the FKC and do not alter, directly or indirectly, any of the characteristics of the FKC that were determined to impart NRHP eligibility. Based on these findings, Reclamation concluded that a finding of No Adverse Effect is appropriate for this undertaking in accordance with 36 CFR Part 800.5(b).

Reclamation consulted by letter with the State Historic Preservation Officer (SHPO) on June 27, 2011. The SHPO concurred with Reclamation's finding on August 08, 2011. With this concurrence, Reclamation's responsibilities under Section 106 are fulfilled. Attached is an edited copy of the EA for this project (track changes on) with revisions in the cultural resources Sections 3.6, 4.3, and 6.

William E. Soule, M.A., Archaeologist
U.S. Bureau of Reclamation, Mid-Pacific Region
2800 Cottage Way, MP-153
Sacramento, CA 95825
Phone: 916-978-4694
Email: wsoule@usbr.gov

From: Inthavong, Michael T
Sent: Monday, August 08, 2011 11:18 AM
To: Soule, William E
Subject: RE: Cawelo Warren Act EA

Super duper…thanks Bill.

From: Soule, William E
Sent: Monday, August 08, 2011 11:16 AM
To: Inthavong, Michael T
Cc: Perry, Laureen (Laurie) M; Nickels, Adam M
Subject: RE: Cawelo Warren Act EA

Michael:

I spoke by phone with the SHPO reviewer this morning and he stated that the response letter is in for signature and should go out this week. When I have it, I will respond to you further.

Bill

William E. Soule, M.A., Archaeologist
U.S. Bureau of Reclamation, Mid-Pacific Region
2800 Cottage Way, MP-153
Sacramento, CA 95825
Phone: 916-978-4694
Email: wsoule@usbr.gov

From: Inthavong, Michael T
Sent: Monday, August 08, 2011 8:42 AM
To: Soule, William E
Subject: Cawelo Warren Act EA

Good Morning Bill,
Could I get an update on the Section 106 status for this project?

This EA has been logged as 11-SCAO-029. It is related to the 08-SCAO-066

Thanks,
Michael I

STATE OF CALIFORNIA – THE RESOURCES AGENCY EDMUND G. BROWN, JR., *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
1725 23rd Street, Suite 100
SACRAMENTO, CA 95816-7100
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov

August 08, 2011 Reply in Reference To: **BUR110628A**

Anastasia Leigh - Acting Regional Environmental Officer
United States Department of the Interior
Bureau of Reclamation, Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, CA 95825-1898

Re: Section 106 Compliance for the *Long Term Warren Act Contract with Cawelo Water District (CWD) Project in Kern County, California* (Project No. 11-SCAO-029)

Dear Ms. Leigh:

Thank you for consulting pursuant to 36 CFR Part 800 (as amended 8-05-04) regulations implementing Section 106 of the National Historic Preservation Act (NHPA). The Bureau of Reclamation (BUR) is the lead Federal agency for the above undertaking and is seeking concurrence on (1) the delineation of the Area of Potential Effect (APE), (2) resource identification efforts, and (3) concurrence on a finding of "*No Historic Properties Affected.*"

The current undertaking will be implemented as part of a long-term contract to transport non-CVP water from the Cawelo Water District to the Friant-Kern Canal (FKC) via the California Aqueduct and private canals. To provide for the discharge of water into the FKC, the current undertaking proposes to install a valve and meter on an 18-inch water pipe and, to accommodate access, construct a grated steel catwalk and stairway immediately adjacent the pipe. The current APE is located at milepost 133.43 on the FKC and, as described, encompasses approximately 0.01-of an acre. Resource identification efforts consisted of a search of pertinent records on file at the BUR as the undertaking is wholly located on BUR land. Identification work indicated the (circa 1945-1951) FKC as the only cultural property in the current APE.

Based on a review of your submitted letter report with construction diagrams, I have the following comments:

1. Pursuant to 36 CFR Parts 800.4(a)(1), please be advised that the current APE should include the FKC as the proposed undertaking is in direct physical contact with the canal itself. As such, please be advised that future consultations should strive to rectify this inconsistency with Federal regulations by using nomenclature such as the project footprint or the area of direct effect for undertakings implemented within the boundaries of geographically larger cultural resources.

2. Pursuant to 36 CFR Part 800.4(b)(1), I find the *Level of Effort* discussed above appropriate for identifying historic properties in support of the proposed undertaking.

3. Pursuant to 36 CFR Part 800.4(d)(1), I **concur** with your finding of "*No Historic Properties Affected*" as, per your description, the proposed undertaking represents a standard modification to the FKC that does not alter its characteristics nor change its primary function from that in which it was originally designed.

4. Please be advised that under certain circumstances, such as an unanticipated discovery or a change in project description, the BUR may have additional future responsibilities for this

undertaking under 36 CFR Part 800.

Thank you for considering historic properties as part of your project planning. Please contact Jeff Brooke of my staff at (916) 445-7003 or jbrooke@parks.ca.gov if you have any questions or concerns.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

IN REPLY REFER TO:

United States Department of the Interior

BUREAU OF RECLAMATION
1243 "N" Street
Fresno, CA 93727

December 1, 2011

MEMORANDUM

To: Michael T. Inthavong
Natural Resources Specialist

From: Jennifer L. Lewis
Endangered Species Act Branch

Subject: No-Effect Determination for Long-Term Warren Act Contract with Cawelo Water District (EA-06-066)

The Bureau of Reclamation (Reclamation) proposes to issue a 25-year Warren Act contract and a license to Cawelo Water District (CWD) for the erection, maintenance, and operation of structures, consisting of a discharge system and stairway for the purpose of pumping groundwater from the Lerdo Canal distribution system across Reclamation's right-of-way into the FKC at two locations, Lateral 8-25 and Lateral 8-17 (milepost 131.34 and milepost 133.43, respectively) (Figure 1). Protected species that have the potential to occur in the project area are San Joaquin kit fox (*Vulpes macrotis mutica*), Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*) (Figure 1), and Bakersfield cactus (*Opuntia treleasei*). However, Bakersfield cactus is along the eastern border of CWD service area and would not be affected by the proposed action. Habitat in the vicinity of the FKC is predominantly barren and has been subject to human disturbance for agricultural practices.

CWD would install a temporary diesel pump (12′ X 16′ X 12′) at Lateral 8-25 to discharge water into the FKC. Lateral 8-17 has an existing pipeline discharge but a stairway (14′ X 3′ and 16′ X 3′) would be placed over the existing embankment to provide safe access to and from the temporary pump. A shovel would be used to excavate holes (eight holes 3 feet deep and 1 foot in diameter) for the stairway support columns and steel traffic bollard, which would be encased with concrete. The concrete footings would be covered with native soil. There would be no changes to the existing canal lining.

Potential impacts to federally listed species from CWD proposed activities are covered under an existing Biological Opinion (BO) prepared by the United States Fish and Wildlife Service (USFWS) to Reclamation, dated February 17, 2005 (1-1-04-F-0368) (USFWS 2005), for a period of twenty-five years. Specific activities covered are listed in Table 1 (#57), and include construction of small structures (blockhouses, stilling wells ect.). Reclamation would obligate CWD to follow all Terms and Conditions associated with the installation a diesel pump and stairway, as covered by the BO (Table 2).

Reclamation's biological impacts determination relies on compliance with the applicable requirements described in the existing Biological Opinion (USFWS 2005), the absence of suitable habitat and ground disturbance occurs in existing disturbed areas. Prior to project initiation a report shall be provided to Reclamation with the results of a pre-construction survey conducted by a qualified biologist to or San

Joaquin kit fox and Tipton kangaroo rat. The project area and a buffer at least 200 feet outside of both Lateral 8-17 and Lateral 8-25 boundary would be conducted 14 to 30 days prior to initiation of any ground disturbance or construction activity (USFWS 2011). During the kit fox survey, any diagnostic sign for kangaroo rat (burrows, scats, tail drags, dust baths, precincts and hay stacking, etc.) and any potential kangaroo rats burrows must be noted in the biological report and submitted to a Reclamation biologist. If no sign or evidence of San Joaquin kit fox or kangaroo rat is found, it is likely that they are not present in the area of disturbance and would not be directly affected by the Proposed Action. However, if there is evidence of kit fox or kangaroo rat, the project would be halted immediately and Reclamation staff notified within two working days. The project would be placed on hold until further analysis with Reclamation staff, and if necessary, consultation with the USFWS is complete. If consultation is not required a written approval letter to initiate the project would be provided by Reclamation.

Conclusion

Reclamation has determined there would be *No Effect* to listed species with certain restrictions**,** as described above, under the Endangered Species Act (16 U.S.C. §1531 et. seq.).

Thank you,

Jennifer L. Lewis

Jennifer L. Lewis
Wildlife Biologist
Bureau of Reclamation
South-Central California Area Office
1243 "N" Street
Fresno CA 93721-1831

References

USFWS (United States Fish and Wildlife Service). 2005. Formal Endangered Species Consultation on the Operations and Maintenance Program Occurring on Bureau of Reclamation Lands within the South-Central California Area Office, 2004. 1 -1-04-F-0368, Sacramento, California.

Long-Term (25-year) Warren Act Contract with Cawelo Water District

Figure 1. CNDDB Records Near Proposed Action Area at Lateral 8-25 and Lateral 8-17. Last Updated: Oct. 2011

U.S. Department of the Interior
Bureau of Reclamation
Mid-Pacific Region

Project: EA-06-066

Table 1. Identification number for Operation and Maintenance Activities*. Taken from: USFWS 2005.

1. Aquatic Weed Contact Herbicide Application 2. Blading and Disking Of Right-Of-Way. 3. Blading of O&M Roads. 4. Canal Bank Revegetation. 5. Canal/Tunnel/Conduit Liner Repair. 6. Chain Dragging - Interior Of Canal. 7. Chain Dragging Outside Bank Vegetation. 8. Contact Herbicide Applications. 9. Copper Sulfate Applications. 10. Canal Dewatering. 11. Drain Ditch and Channel Maintenance 12. Grazing. 13. Hand Control of Vegetation. 14. Insecticidal Sprays. 15. Mudjacking/Injecting Grout. 16. Pre-emergent Herbicide Applications. 17. Prescribed Burning For Weed Control. 18. Right Of Way Dust Abatement. 19. Right-Of-Way Mowing. 20. Rip Rap. 21. Roadway Chipseal. 22. Squirrel Baiting. 23. Bargate / Fence Installations. 24. Bridge Maintenance (Running Pad Replacement). 25. Cableway Maintenance (Painting/Cleaning/Repair). 26. Canal System Operator Residence Repair. 27. Cattle Guard Rehabilitation. 28. Down Drain Installation 29. Drainage Improvements (Ditches or Pipe). 30. Electrical Repairs by Utility Companies (PG&E / SCE or Others). 31. Embankment Maintenance (Fill washes and Gullies).	32. Facilities Inspection. 33. Graffiti Removal from Concrete Structures. 34. Guardrail Installation. 35. Valve Rehabilitation. 36. Ladders/Safety Nets/Float Repair and Replacement. 37. Pull and Check Pumps. 38. Radial Gate Rehabilitation. 39. Recorder House Maintenance (Door Repair, Painting, Cleaning, Etc). 40. Removal of Trash from Canal. 41. Right-Of-Way Trash Removal. 42. SCADA System Repair and Upgrade. 43. Sign Repair. 44. Stilling Well Maintenance (Pumping/Backflush Etc.). 45. Sump Pump Maintenance (Electrical/Mechanical/Piping). 46. Turnout Repair (In-Channel Prism). 47. Turnout Sandblasting and Painting (In-Channel Prism 48. Utility Trenching (SCADA/Power/Miscellaneous.) 49. Wash and Paint Turnouts and Check Structures. 50. Wash Bridges. 51. Beach Belting. 52. Canal Liner Extension. 53. Canal Desilting Operations. 54. Major Road Construction/Rehabilitation. 55. Equalizing Reservoir Desilting. 56. Dead Pool Pumping / Basin Discharge 57. Structure Construction (Blockhouses, Stilling Wells Etc.) 58. Utility And Facilities Repair. 59. Pump-In System Set-Up During Flood Years.

*Specific CWD Activities consulted on for the FKC: 58.

Table 2.

Routine O&M Activities on Terrestrial SCCAO Facilities – 2004 Programmatic O&M Consultation				
	Comprehensive O&M Design Criteria			
Description of Routine O&M Activity	Species	Screening Process	Species Avoidance/ Take Minimization Steps	Residual Effects/Determination Statements
57. **Structure Construction (Blockhouses, stilling wells etc.)** Structures are constructed irregularly along the FK-Canal, when new operational facilities are added. Sites are graded and forms set for pouring concrete pads. Framing may use concrete block, metal or wood, with metal siding. Trenching may be done to provide underground utilities to the site. Ground disturbance occurs at the site, potentially damaging or destroying burrows potentially used by listed species or by their prey.	CTS, SJKF, TKR CH: CTS, Vernal pool species	Review LSM for species descriptions, their distributions and habitat use. Identify habitat(s) in which O&M actions will occur and which also support listed species. Determine where impacts to habitat(s) from the O&M action overlap with the potential for occurrence of listed species. Review the CNDDB records and maps for species records of occurrence and their range distribution within the action area. Conduct surveys for presence of listed species in the action area. If needed, visit the action area to assess habitat and survey for listed species by conducting activities such as USFWS/CDFG kit fox survey protocols, searches for kit fox dens, searches for burrows of small mammals, including those of listed kangaroo rats, or elderberry plants (following USFWS Plant Survey Guidelines).	Follow O&M Guidelines. Follow guidelines for soil disturbance that may affect kangaroo rats and SJKF. Pre-construction surveys will be required for all construction areas. Coordination with Service will occur before construction begins if any listed species is found. For SJKFA search to locate animal burrows occurring within 200 feet of a proposed work site will be made by field staff before undertaking the work. Any burrow with an entrance diameter greater than four inches and with a depth of greater than 12 inches will be assumed to be a potential kit fox den and will need to be examined by a biologist before maintenance work is begun. After grading, or other ground disturbing work, all culverts within the work area must be cleared. If a kit fox is in the culvert, it must be left undisturbed until the fox has left, after which time the culvert will be cleared. Work may not continue if listed kangaroo rats are sighted unless the animals are relocated under a plan pre-approved by Reclamation, Service and CDFG and/or a mitigation plan is developed in coordination with Reclamation and approved by Service and CDFG. SCCAO will visit the site and advise on approaches to help minimize impacts, if needed.	With implementation of the described avoidance /minimization there is no effect of this action on listed species. CH: WNM – With the required pre-construction surveys and other avoidance measures effects to the PCE's of the critical habitat will not reach the threshold of adverse modification.

Appendix E – Comments Received

ARVIN-EDISON WATER STORAGE DISTRICT

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MAILING ADDRESS: P.O. BOX 175
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DIVISION 9
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January 3, 2011

Transmitted via email, fax and regular mail

Patti Clinton
United States Bureau of Reclamation (USBR or Reclamation)
South-Central California Area Office
1243 N. Street
Fresno CA 93721

RE: Draft EA for Long-term Warren Act Contract with Cawelo Water District (EA 06-66)

Dear Patti,

Arvin-Edison Water Storage District (AEWSD or District) provides the following comments on the above-referenced draft EA for the Warren Act Contract with Cawelo Water District.

As a result of this proposed non-CVP water discharge into the Friant-Kern Canal (FKC), water quality is a major concern to AEWSD. As you may be aware, AEWSD's turnout is located at the terminus of the FKC and would be subject to this water quality, including but not limited to the increased salinity concerns to the District's surface and groundwater supplies, water banking programs, and associated negative impacts on crops and land uses in the District. Water Quality protection language in the EA is very vague and needs modifications with respect to defining thresholds of "impairment" or "degradation", etc. Reclamation's statement "The introduction of non-CVP Water into the CVP facilities will not degrade the quality of CVP water" appears unsubstantiated. Has Reclamation determined water introduced into the FKC under this action is of higher quality than FKC water, which Reclamation cites as "pristine"? If not, it is unclear how Reclamation will comply with the California's Anti-Degradation Policy and whether an NPDES Permit will be required.

The statements Reclamation makes as to their being no cumulative impacts also appear unsubstantiated. This is but one of dozens of programs of various sizes that could be implemented and of which Reclamation has not done any cumulative impact analysis. In the regard, Reclamation also makes the point that the amount of water proposed to be discharged into the FKC under this action is relatively small in comparison to the "basin". However, Reclamation fails to note the impacts of the water quality will NOT be spread basin-wide but impact solely those water users downstream of the point of introduction, such as AEWSD.

The District also explained its concerns regarding FKC water quality standards in the enclosed September 30, 2009 letter to the Friant Water Authority ("FWA"). Additionally, and as further specified in AEWSD's letter to Reclamation dated November 5, 2009 (regarding EA/FONSI 09-92), which we incorporate by reference into these comments, the District believes the existing USBR Water Quality Monitoring Policy (Policy) is deficient and lacks sufficient protections (or standards) for irrigation suitability. Although the current Policy is not directly referenced in the EA, the District believes Reclamation will rely upon it for various aspects going forward and to our knowledge a revised Policy has yet to be published.

AEWSD understands this non-CVP discharge into the FKC would be subject to available capacity; and Reclamation cites that Friant Water Authority would establish the usage priority, however the Friant Operational Guidelines (dated March 18, 2005), as published by Reclamation is the current document to establish and enforce such actions and should be specifically referenced.

Page 17 of the EA makes a statement that "by allowing CVC water to be added to the FKC there will be an increase in salinity in the FKC". While this statement is certainly true, this statement is confusing in the context of the proposed action and appears that it does not belong with this EA. If this EA is to assess such action then it needs to be rewritten and AEWSD reserves the right to comment on such assessment. The proposed action is to discharge non-CVP water (or groundwater) from Cawelo Water District into the FKC, not from the CVC into the FKC. Also, it shall be noted that the CVC Operations Agreement only allows for certain approved discharges from the CVC into the FKC because of its potential impact on AEWSD's FKC supply.

Lastly, we note that Exhibit D was not included so we could not comment at this time

Thank you for the opportunity to comment.

Steve Collup,
Engineer-Manager

cc: Jeevan Muhar, Staff Engineer
Ron Jacobsma, Friant Water Authority
Rena Ballew, USBR
Ernest Conant

JSM:v:\usbr\corre.\longtermwarrentactcontractCL02.08

RECLAMATION
Managing Water in the West

Environmental Commitment Program

This form must accompany all Federal discretionary action approvals that require compliance with the National Environmental Policy Act and other applicable environmental laws.

Approval document[1]: [Warren Act Contract No. 10-WC-20-4085 and License No. 11-LC-20-0234]
Environmental Document[2]: [EA/FONSI-06-066]
On January 14, 2011 the President's Council on Environmental Quality (CEQ) issued guidance for Federal agencies to implement, monitor and evaluate environmental commitments identified in Environmental Assessments and Environmental Impact Statements completed for compliance with the National Environmental Policy Act (NEPA). This guidance also pertains to Categorical Exclusions when environmental commitments have been identified in order to meet the requirements for exclusion.

The Bureau of Reclamation's NEPA Handbook provides guidance on the establishment of an Environmental Commitment Program (ECP) to meet the CEQ guidance. The ECP is a system designed to implement, monitor and evaluate the environmental commitments identified in the NEPA document. These commitments fall under one or more of the following categories:

1. **Commitments where no construction or ground disturbance is involved**
   These commitments are typically associated with water transfers, exchanges, Warren Act contracts and similar actions.

   Required ☒ Not Required ☐

2. **Commitments where construction or ground disturbance is involved**
   These commitments are typically associated with short-term construction impacts resulting from modifications to Federal facilities or modifications to non-Federal facilities where there is a Federal nexus such as Federal funds or approvals.

   Required ☒ Not Required ☐

3. **Long-term commitments**
   These commitments are typically associated with larger construction or ground disturbing activities where impacts to resources such as wetlands, special status species habitat or water quality may occur that require long-term mitigation and monitoring.

   Required ☐ Not Required ☒

Note: If the "Not Required" boxes are checked on all three commitment categories, no further action is required. If any of the required boxes are checked please refer to the following Environmental Commitment table for a summary of the commitments required for environmental compliance. Please direct any questions or comments regarding the Environmental Commitment Program to:

Chuck Siek, Supervisory Natural Resources Specialist
Department of Interior, Bureau of Reclamation
1243 "N" Street, Fresno, CA 93721
(559) 487-5138 email at csiek@usbr.gov

[1] Approval document types include but are not limited to: contracts and agreements, permits, licenses and grants.
[2] Environmental Document types include: Categorical Exclusion, Environmental Assessment/Finding of No Significant Impact and Environmental Impact Statement/Record of Decision

RECLAMATION
Managing Water in the West

Environmental Commitment Table **South-Central California Area Office**

Approval document: [Warren Act Contract No. 10-WC-20-4085 and License No. 11-LC-20-0234]

Environmental Document: [EA/FONSI-06-066]

[Michael Inthavong – Natural Resources Specialist, minthavong@usbr.gov, 559-487-5044] [Jennifer Lewis - Biologist, jllewis@usbr.gov, 559-487-5197] [Rena Ballew – Repayment Specialist, rballew@usbr.gov, 559-487-5504]						To be completed by [proponent]		
Resource	Commitment Category[3]	Summary of Environmental Commitments[4]	Timeframe for Implementation[5]	Verification of Compliance[6]		[Proponent] Point of Contact[7]	Verification of Compliance (Authorizing Official)	
				Initials	Date		Initials	Date
Water Quality	1	In order to be in compliance with Reclamation's water quality standards for introducing non-CVP water into the Friant-Kern Canal, that quality of water must be tested and at a minimum, meet the standards as outlined in California's Title 22 Standards . Please refer to the most recent version of Reclamation's, *Policy for Accepting Non-Project Water into the Friant-Kern and Madera Canals, Water Quality Monitoring Requirements – 2011* (attached to this document are pages from Reclamation's policy). A copy of the water quality testing data must be provided to Reclamation prior to introducing this source of non-CVP water into the Friant-Kern Canal.	Each well proposed to be pumped as the source of non-CVP water will be tested annually.					
Biological 1	2	Must comply with the applicable requirements described in the existing Biological Opinion (USFWS 2005; Service reference number *1-1-04-0368*) and include a pre-construction survey is to be conducted by an approved biologist of both project sites (Laterals 8-17 and 8-25) for evidence of kit fox. Please refer to the U.S. Fish and Wildlife Service's San Joaquin kit fox avoidance and minimization measures dated 2011 (see attached No Effect Memo and kit fox measures). A summary report of the pre-construction survey is to be provided to Reclamation prior to ground disturbance.	The pre-construction survey is to be completed within 14-30 days of project implementation for installation of the temporary diesel pump and metal stairway.					

[3]List category numbers checked on first page
[4] Summarize environmental commitments from environmental document completed for action
[5] List when environmental commitments must start/end
[6] Verification by Reclamation that all environmental commitments have been implemented and a summary report has been completed as required
[7] Proponent point of contact may be the individual responsible for a specific commitment or the Authorizing Official responsible for overall environmental compliance

[Michael Inthavong – Natural Resources Specialist, minthavong@usbr.gov, 559-487-5044] [Jennifer Lewis - Biologist, jllewis@usbr.gov, 559-487-5197] [Rena Ballew – Repayment Specialist, rballew@usbr.gov, 559-487-5504]				To be completed by [proponent]				
Resource	Commitment Category[3]	Summary of Environmental Commitments[4]	Timeframe for Implementation[5]	Verification of Compliance[6]		[Proponent] Point of Contact[7]	Verification of Compliance (Authorizing Official)	
				Initials	Date		Initials	Date
Biological 2	2	Must comply with the applicable requirements described in the existing Biological Opinion (USFWS 2005; Service reference number *1-1-04-0368*). To insure that the Proposed Action will avoid disturbances, injury or mortality to Tipton kangaroo rats, direct observation for the species and searching for diagnostic sign (burrows, scats, tail drags, dust baths, precincts and hay stacking, etc.) and any potential kangaroo rats burrows must be noted during pre-construction surveys for San Joaquin kit fox. Include information for this survey with that required for the kit fox survey.	To be completed same time as pre-construction survey for San Joaquin kit fox.					

Existing environmental documents: Reclamation would continue to require compliance with all commitments imposed by existing environmental documents, such as Biological Opinions and Programmatic Agreements.

Funding: The project proponent is responsible for all direct costs to implement, monitor and evaluate the environmental commitments described in the following table. The project proponent is also responsible for the costs incurred by Reclamation staff to monitor and evaluate the environmental commitments.

2011 Policy to Accept Non-Project Water
Friant Division
Water Quality Monitoring Program

Table 3. Water Quality Constituents

CONSTITUENT OR PARAMETER	Units	California DHS Maximum Contaminant Level (1)	Note	Irrigation Suitablility Standards (2)	Detection Limit for Reporting	Note	CAS Registry Number
Primary Constituents (CCR § 64431)							
Aluminum	µg/L	1,000	1		50	2	7429-90-5
Antimony	µg/L	6	1		6	2	7440-36-0
Arsenic	µg/L	50	16		2	2	7440-38-2
Asbestos	MFL > 10µm	7	1, 18		0.2	2	1332-21-4
Barium	µg/L	1,000	1		100	2	7440-39-3
Beryllium	µg/L	4	1		1	2	7440-41-7
Cadmium	µg/L	5	1		1	2	7440-43-9
Chromium (total)	µg/L	50	1		10	2	7440-47-3
Cyanide	µg/L	150	1		100	2	57-12-5
Fluoride	µg/L	2,000	1, 19		100	2	16984-48-8
Mercury (inorganic)	µg/L	2	1		1	2	7439-97-6
Nickel	µg/L	100	1		10	2	7440-02-0
Nitrate (as NO3)	mg/L	45	1, 20		2	2	7727-37-9
Total Nitrate + Nitrite (as Nitrogen)	mg/L	10	1				
Nitrite (as Nitrogen)	mg/L	1	1		0.4	2	14797-65-0
Selenium	µg/L	50	1		5	2	7782-49-2
Thallium	µg/L	2	1		1	2	7440-28-0
Secondary Constituents (CCR § 64449)							
Aluminum	µg/L	200	6		50	2	7429-90-5
Chloride	mg/L	250	7, 21	107			16887-00-6
Color	units	15	6				
Copper	µg/L	1,000	6				7440-50-8
Foaming agents (MBAS)	µg/L	500	6				
Iron	µg/L	300	6				7439-89-6
Manganese	µg/L	50	6				7439-96-5
Methyl-tert-butyl ether (MtBE)	µg/L	5	6				1634-04-4
Odor - Threshold	threshold units	3	6				
Silver	µg/L	100	6				7440-22-4
Specific conductance (EC)	µS/cm	900	7, 23	700			
Sulfate	mg/L	250	7, 21				14808-79-8
Thiobencarb	µg/L	1	6				28249-77-6
Total dissolved solids (TDS)	mg/L	500	7, 24	450			
Turbidity	NTU	5	6				
Zinc	µg/L	5,000	6				7440-66-6
Other required analyses (CCR § 64449 (b)(2); CCR § 64670)							
Bicarbonate	mg/L		8	92			
Boron	mg/L			1			
Calcium	mg/L		8, 12				7440-70-2
Carbonate	mg/L		8				
Copper	mg/L	1.3	14, 22		0.05	12	7440-50-8
Hardness	mg/L		8				
Hydroxide alkalinity	mg/L		8, 12				
Lead	µg/L	15	14, 22		5	12	7439-92-1
Magnesium	mg/L		8				7439-95-4
Orthophosphate	mg/L		12				
pH	units		8, 12, 25	6.5 - 8.4			

Table 3. Water Quality Constituents

CONSTITUENT OR PARAMETER	Units	California DHS Maximum Contaminant Level (1)	Note	Irrigation Suitability Standards (2)	Detection Limit for Reporting	Note	CAS Registry Number
Silica	mg/L		12				
Sodium	mg/L		8	69			7440-23-5
Sodium Adsorption Ratio				3			
Temperature	degrees C		12				
Radiochemistry (CCR § 64442)							
Radioactivity, Gross Alpha	pCi/L	15	3		3	3	
Microbiology							
Cryptosporidium	org/liter	No MCL, measure for presence (surface water only)					
Fecal Coliform	MPN/100ml	No MCL, measure for presence (surface water only)					
Giardia	org/liter	No MCL, measure for presence (surface water only)					
Total Coliform bacteria	MPN/100ml	No MCL, measure for presence (surface water only)					
Organic Constituents (CCR § 64444)							
EPA 504.1 method							
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	0.2	4		0.01	5	96-12-8
Ethylene dibromide (EDB)	µg/L	0.05	4		0.02	5	206-93-4
EPA 505							
Chlordane	µg/L	0.1	4		0.1	5	57-74-9
Endrin	µg/L	2	4		0.1	5	72-20-8
Heptachlor	µg/L	0.01	4		0.01	5	76-44-8
Heptachlor epoxide	µg/L	0.01	4		0.01	5	1024-57-3
Hexachlorobenzene	µg/L	1	4		0.5	5	118-74-1
Hexachlorocyclopentadiene	µg/L	50	4		1	5	77-47-4
Lindane (gamma-BHC)	µg/L	0.2	4		0.2	5	58-89-9
Methoxychlor	µg/L	30	4		10	5	72-43-5
Polychlorinated biphenyls	µg/L	0.5	4		0.5	5	1336-36-3
Toxaphene	µg/L	3	4		1	5	8001-35-2
EPA 508 Method							
Alachlor	µg/L	2	4		1	5	15972-60-8
Atrazine	µg/L	1	4		0.5	5	1912-24-9
Simazine	µg/L	4	4		1	5	122-34-9
EPA 515.3 Method							
Bentazon	µg/L	18	4		2	5	25057-89-0
2,4-D	µg/L	70	4		10	5	94-75-7
Dalapon	µg/L	200	4		10	5	75-99-0
Dinoseb	µg/L	7	4		2	5	88-85-7
Pentachlorophenol	µg/L	1	4		0.2	5	87-86-5
Picloram	µg/L	500	4		1	5	1918-02-1
2,4,5-TP (Silvex)	µg/L	50	4		1	5	93-72-1
EPA 524.2 Method (Volatile Organic Chemicals)							
Benzene	µg/L	1	4		0.5	5	71-43-2
Carbon tetrachloride	µg/L	0.5	4		0.5	5	56-23-5
1,2-Dibromoethane	µg/L	0.05			0.5	5	106-93-4
1,2-Dichlorobenzene	µg/L	600	4		0.5	5	95-50-1
1,4-Dichlorobenzene	µg/L	5	4		0.5	5	106-46-7
1,1-Dichloroethane	µg/L	5	4		0.5	5	75-34-3
1,2-Dichloroethane	µg/L	0.5	4		0.5	5	107-06-2
1,1-Dichloroethylene	µg/L	6	4		0.5	5	75-35-4
cis-1,2-Dichloroethylene	µg/L	6	4		0.5	5	156-59-2
trans-1,2-Dichloroethylene	µg/L	10	4		0.5	5	156-60-5
Dichloromethane	µg/L	5	4		0.5	5	75-09-2

Table 3. Water Quality Constituents

CONSTITUENT OR PARAMETER	Units	California DHS Maximum Contaminant Level (1)	Note	Irrigation Suitability Standards (2)	Detection Limit for Reporting	Note	CAS Registry Number
1,2-Dichloropropane	µg/L	5	4		0.5	5	78-87-5
1,3-Dichloropropene	µg/L	0.5	4		0.5	5	542-75-6
Ethylbenzene	µg/L	300	4		0.5	5	100-41-4
Methyl-tert-butyl ether (MtBE)	µg/L	13	4		3	5	1634-04-4
Monochlorobenzene	µg/L	70	4		0.5	5	108-90-7
Styrene	µg/L	100	4		0.5	5	100-42-5
1,1,2,2-Tetrachloroethane	µg/L	1	4		0.5	5	79-34-5
Tetrachloroethylene (PCE)	µg/L	5	4		0.5	5	127-18-4
Toluene	µg/L	150	4		0.5	5	108-88-3
1,2,4-Trichlorobenzene	µg/L	5	4		0.5	5	120-82-1
1,1,1-Trichloroethane	µg/L	200	4		0.5	5	71-55-6
1,1,2-Trichloroethane	µg/L	5	4		0.5	5	79-00-5
Trichloroethylene (TCE)	µg/L	5	4		0.5	5	79-01-6
Trichlorofluoromethane	µg/L	150	4		5	5	75-69-4
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	1,200	4		10	5	76-13-1
Total Trihalomethanes	ug/L	80	10				
Vinyl chloride	µg/L	0.5	4		0.5	5	75-01-4
Xylene(s)	µg/L	1,750	4		0.5	5	1330-20-7
EPA 525.2 Method							
Benzo(a)pyrene	µg/L	0.2	4		0.1	5	50-32-8
Di(2-ethylhexyl)adipate	µg/L	400	4		5	5	103-23-1
Di(2-ethylhexyl)phthalate	µg/L	4	4		3	5	117-81-7
Molinate	µg/L	20	4		2	5	2212-67-1
Thiobencarb	µg/L	70	4		1	5	28249-77-6
EPA 531.1 Method							
Carbofuran	µg/L	18	4		5	5	1563-66-2
Oxamyl	µg/L	50	4		20	5	23135-22-0
EPA 547 Method							
Glyphosate	µg/L	700	4		25	5	1071-83-6
EPA 548.1 Method							
Endothal	µg/L	100	4		45	5	145-73-3
EPA 549.2 Method							
Diquat	µg/L	20	4		4	5	85-00-7
EPA 613 Method							
2,3,7,8-TCDD (Dioxin)	µg/L	0.00003	4		0.000005	5	1746-01-6

Source Data:

Adapted from Marshack, Jon B. August 2003. A Compilation of Water Quality Goals. Prepared for the California Environmental Protection Agency, Regional Water Quality Control Board. Tables revised August 2007.

References:

(1) State of California, Code of Regulations, Title 22, Division 4, Environmental Health, Chapter 15, Domestic Water Quality, and Monitoring Regulations (Sections 64401 et seq.), as amended.

(2) Ayers, R. S. and D. W. Westcot, Water Quality for Agriculture, Food and Agriculture Organization of the United Nations - Irrigation and Drainage Paper No. 29, Rev. 1, Rome (1985).

Notes for Table 3

State of California, Code of Regulations, Title 22, Division 4 Environmental Health, Chapter 15, Domestic Water Quality, and Monitoring Regulations (Sections 64401 et seq.), as amended.

[1] Table 64431-A, Maximum Contaminant Levels, Inorganic Chemicals
[2] Table 64432-A, Detection Limits for Purpose of Reporting (DLRs) for Regulated Inorganic Chemicals
[3] Table 644442, Radionuclide Maximum contaminant Levels (MCLs) and Detection Levels for Reporting (DLRs) Picocuries per liter; including Radium-226 but excluding Radon and Uranium.
[4] Table 64444-A, Maximum Contaminant Levels Organic Chemicals
[5] Table 64445.1-A, Detection Limits for Reporting (DLRs) for Regulated Organic Chemicals
[6] Table 64449-A, Secondary Maximum Contaminant Levels "Consumer Acceptance Levels"
[7] Table 64449-B, Secondary Maximum Contaminant Levels "Consumer Acceptance Levels"
[8] § 64449(b)(2)
[9] Table 64450, Unregulated Chemicals
[10] Appendix 64481-A, Typical Origins of Contaminants with Primary MCLs
[11] Table 64533-A, Maximum Contaminant Levels and Detection Limits for Reporting Disinfection Byproducts
[12] § 64670.(c)
[13] Table 64678-A, DLRs for Lead and Copper
[14] § 64678 (d)
[15] § 64678 (e)
[16] New Federal standard as of 1/23/2006 in 10 ppb
[17] Dept Health Services Drinking Water Notification Levels (June 2006)
[18] MFL = million fibers per liter; limited to fibers longer than 10 um.
[19] Optimal fluoride level and (range) vary with annual average of maximum daily air temperature; 50.0 to 53.7 degrees F - 1.2 (1.1 to 1.7) mg/L; 53.8 to 58.3 degrees F - 1.1 (1.0 to 1.7) mg/L; 58.4 to 63.8 degrees F - 1.0 (0.9 to 1.5) mg/L; 63.9 to 70.6 degrees F - 0.9 (0.8 to 1.4) mg/L; 70.7 to 79.2 degrees F - 0.8 (0.7 to 1.3) mg/L; 79.3 to 90.5 degrees F - 0.7 (0.6 to 1.2) mg/L.
[20] As NO3; in addition, MCL for total nitrate plus nitrite = 10,000 ug/L (as N).
As nitrogen (N); in addition, limit for total nitrate + nitrite = 10,000 ug/L (as N).
[21] Recommended level; Upper level = 500 mg/L; Short-term level = 600 mg/L.
[22] MCL includes this "Action level" to be exceeded in no more than 10% of samples at the tap.
[23] Recommended level; Upper level = 1600 umhos/cm; Short-term level = 2200 umhos/cm.
[24] Recommended level; Upper level = 1000 mg/L; Short-term level = 1500 mg/L.
[25] This limit has a range of values between the first and second numbers shown.
[26] Agricultural water quality limit
[27] Carcinogen; limit based on cancer risk.
[28] First number is the Notification Level, above which local government notification is required and customer notification is recommended. Second number is the Response Level, at which the drinking water source is recommended to be taken out of service.
[29] Calculated from published Reference Dose using assumptions of 70 kg body weight, 2 liters/day water consumption, and 20% relative source contribution from drinking water. An additional uncertainty factor of 10 i used for Class C and S carcinogens. (US EPA IRIS Reference dose as drinking water level
[30] For 1,2- and 1-3-dichlorobenzenes.
[31] The sum of aldicarb, aldicarb sulfoxide and aldicarb sulfone should not exceed 7 ug/L because of similar mode of action. Administrative stay of the effective date.
[32] For total trihalomethanes (sum of bromoform, bromodichloromethane, chloroform and dibromochloromethane); based largely on technology and economics.
[33] For five haloacetic acids (sum of monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid).
[34] Treatment Technique: Not to exceed 0.01% residual when dosed at 20 mg/L for drinking water treatment.
[35] Measured as ClO2. Maximum residual disinfectant level.
[36] Measured as Cl2. Maximum residual disinfectant level.
[37] Cancer risk at Notification Level is 1 in 100,000. 1 in 1,000,000 cancer risk at 0.001 ug/L.
[38] Draft / tentative / provisional

Table 4. Approved Laboratory List for the Mid-Pacific Region Environmental Monitoring Branch

APPL Laboratory	**Address**	908 North Temperance Avenue, Clovis, CA 93611
	Contact	Diane Anderson (Project Manager) or Cynthia Clark
	P/F	(559) 275-2175 / (559) 275-4422
	Email	danderson@applinc.com; cclark@applinc.com
	Methods	*Approved for inorganic and organic parameters in water and soil*
Basic Laboratory	**Address**	2218 Railroad Avenue Redding, CA 96001 USA
	Contact	Nathan Hawley, Melissa Hawley, Ricky Jensen
	P/F	(530) 243-7234 / (530) 243-7494
	Email	nhawley@basiclab.com (QAO), mhawley@basiclab.com (PM), sthomas@basiclab.com (quotes)
		porlar@basiclab.com (sample custody), khawley@basiclab.com (sample custody)
	CC Info	nhawley@basiclab.com, Jennifer Rawson (ext. 203 - invoices)
		Reanalysis requests need to always be addressed to Melissa Hawley and CC'd to Nathan Hawley
		Quotes address to Sabrina Thomas and cc Nathan Hawley
	Methods	*Approved for inorganic organic parameters*
Block Environmental Services	**Address**	2451 Estand Way Pleasant Hill, CA 94523 USA
	Contact	David Block
	P/F	(925) 682-7200 / (925) 686-0399; (925) 382-9760 Cell
	Email	dblock@blockenviron.com
	Methods	*Approved for Toxicity Testing*
California Laboratory Services	**Address**	3249 Fitzgerald Road Rancho Cordova, CA 95742
	Contact	Scott Pieters
	P/F	(916) 638-7301 / (916) 638-4510
	Email	scottp@californialab.com (p.m.), janetm@californialab.com (QA)
	Methods	*Approved for inorganic, organic, and microbiological parameters.*
Caltest Analytical Laboratory	**Address**	1885 N. Kelly Rd. Napa, CA 94558
	Contact	Mike Hamilton
	P/F	(707) 258-4000/(707) 226-1001
	Email	Mike_Hamilton@caltestlabs.com; info@caltestlabs.com
	Methods	*Approved for inorganic parameters. Need to touch base with Bill frequently to insure TAT.*
Dept. of Fish & Game - WPCL	**Address**	2005 Nimbus Road Rancho Cordova, CA 95670 USA
	Contact	David B. Crane - Laboratory Director Patty Bucknell - Inorganic Chemist
		Gail Chow - QA Manager + re-analysis requests (916) 358-2840
	P/F	(916) 358-2858 / (916) 985-4301, Sample Receiving: (916) 358-0319 Scott or Mary
	Email	dcrane@ospr.dfg.ca.gov; pbucknell@ospr.dfg.ca.gov; gcho@ospr.dfg.ca.gov
	Methods	*Approved only for metals analysis in tissue, organics pending*, ***lab closes at 4:30 pm, best to call fir***
Fruit Growers Laboratory	**Address**	853 Corporation Street Santa Paula, CA 93060 USA
	Contact	David Terz, QA Director
	P/F	(805) 392-2024 / (805) 525-4172
	Email	davidt@fglinc.com
	Methods	*Approved for all inorganic and organic parameters in drinking water and general physical analysis in soils.*

Table 4. Approved Laboratory List for the Mid-Pacific Region Environmental Monitoring Branch

Montgomery Watson/Harza Laboratories	**Address**	750 Royal Oaks Drive Ste. 100 Monrovia, CA 91016 USA
	Contact	Bradley Cahoon and Rita Reeves (Project Managers - Sacramento), Linda Geddes* (Project Manager - Monrovia) *Work with Linda after samples arrive at laboratory
	P/F	(916) 418-8358, (626) 386-1100, Linda - (626) 386-1163, Rita cell 916-996-5929
	Email	Bradley.Cahoon@us.mwhglobal.com, linda.geddes@mwhglobal.com
	CC Info	cc. Rita on all communications to Bradley.
	Methods	*Approved for all inorganic, organic, and radiochemistry parameters in drinking water*
Moore Twining Laboratories, Inc.	**Address**	2527 Fresno Street Fresno, CA 93721 USA
	Contact	Julio Morales (PM), Maria Manuel (QA Officer), Sample Control (Bottle Orders), Juli Adams (Lab Director); Lisa Montijo (Assistant PM)
	P/F	(559) 268-7021 / (559) 268-0740
	Email	juliom@mooretwining.com; mariam@mooretwining.com; julia@mooretwining.com; lisam@mooretwining.com
	Methods	*Approved for COD by SM5220D and general chemistry including boron analysis (not TOC)*
Olson Biochemistry Laboratories	**Address**	SDSU: Box 2170, ACS Rm. 133 Brookings, SD 57007 USA
	Contact	Nancy Thiex, Laboratory Director
	P/F	(605) 688-5466 / (605) 688-6295
	Email	Nancy.Thiex@sdstate.edu
	CC Info	For re-analysis: contact Zelda McGinnis-Schlobohm and Nancy Anderson
		Zelda.Schobohm@SDSTATE.EDU, Nancy.Anderson@SDSTATE.EDU
		For analysis questions only: just CC. Nancy Anderson
	Methods	*Approved for boron, selenium, and molybdenum analyses (except boron in soil; Olson does not have the capability). Boron by EPA 200.7 not recommended over other laboratories unless requesting a specialty method like vegetation and tissue. It's a direct analysis, so if digestion is needed make sure to specify on the C.O.C. If vegetation or tissue is requested, request an MDL study and have it attached to the report. Se 0.4 ug L MDL study on file.*
Sierra Foothill Laboratory, Inc.	**Address**	255 Scottsville Blvd, Jackson, CA 95642
	Contact	Sandy Nurse (Owner) or Dale Gimble (QA Officer)
	P/F	(209) 223-2800 / (209) 223-2747
	Email	sandy@sierrafoothilllab.com, CC: dale@sierrafoothilllab.com
	Methods	*Approved for all inorganic parameters, microbiological parameters, acute and chronic toxicity.*
TestAmerica	**Address**	880 Riverside Parkway West Sacramento, CA 95605 USA
	Contact	Linda Laver
	P/F	(916) 374-4362 / (916) 372-1059 fax
	Email	Linda.Laver@TestAmericaInc.com
	Methods	*Approved for all inorganic parameters and hazardous waste organics. Ag analysis in sediment, when known quantity is present, request 6010B*
Western Environmental Testing Laboratories	**Address**	475 East Greg Street # 119 Sparks, NV 89431 USA
	Contact	Erin Pfau (Client Services), Andy Smith (Lab Dretr)
	P/F	(775) 355-0202 / (775) 355-0817
	Email	erinp@wetlaboratory.com, andy@wetlaboratory.com
	Methods	*Approved for inorganic parameters (metals, general chemistry) and coliforms.*

revised: 2/14/2011

United States Department of the Interior

BUREAU OF RECLAMATION
1243 "N" Street
Fresno, CA 93727

TAKE PRIDE IN AMERICA

December 1, 2011

MEMORANDUM

To: Michael T. Inthavong
Natural Resources Specialist

From: Jennifer L. Lewis
Endangered Species Act Branch

Subject: No-Effect Determination for Long-Term Warren Act Contract with Cawelo Water District (EA-06-066)

The Bureau of Reclamation (Reclamation) proposes to issue a 25-year Warren Act contract and a license to Cawelo Water District (CWD) for the erection, maintenance, and operation of structures, consisting of a discharge system and stairway for the purpose of pumping groundwater from the Lerdo Canal distribution system across Reclamation's right-of-way into the FKC at two locations, Lateral 8-25 and Lateral 8-17 (milepost 131.34 and milepost 133.43, respectively) (Figure 1). Protected species that have the potential to occur in the project area are San Joaquin kit fox (*Vulpes macrotis mutica*), Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*) (Figure 1), and Bakersfield cactus (*Opuntia treleasei*). However, Bakersfield cactus is along the eastern border of CWD service area and would not be affected by the proposed action. Habitat in the vicinity of the FKC is predominantly barren and has been subject to human disturbance for agricultural practices.

CWD would install a temporary diesel pump (12′ X 16′ X 12′) at Lateral 8-25 to discharge water into the FKC. Lateral 8-17 has an existing pipeline discharge but a stairway (14′ X 3′ and 16′ X 3′) would be placed over the existing embankment to provide safe access to and from the temporary pump. A shovel would be used to excavate holes (eight holes 3 feet deep and 1 foot in diameter) for the stairway support columns and steel traffic bollard, which would be encased with concrete. The concrete footings would be covered with native soil. There would be no changes to the existing canal lining.

Potential impacts to federally listed species from CWD proposed activities are covered under an existing Biological Opinion (BO) prepared by the United States Fish and Wildlife Service (USFWS) to Reclamation, dated February 17, 2005 (1-1-04-F-0368) (USFWS 2005), for a period of twenty-five years. Specific activities covered are listed in Table 1 (#57), and include construction of small structures (blockhouses, stilling wells ect.). Reclamation would obligate CWD to follow all Terms and Conditions associated with the installation a diesel pump and stairway, as covered by the BO (Table 2).

Reclamation's biological impacts determination relies on compliance with the applicable requirements described in the existing Biological Opinion (USFWS 2005), the absence of suitable habitat and ground disturbance occurs in existing disturbed areas. Prior to project initiation a report shall be provided to Reclamation with the results of a pre-construction survey conducted by a qualified biologist to or San

Joaquin kit fox and Tipton kangaroo rat. The project area and a buffer at least 200 feet outside of both Lateral 8-17 and Lateral 8-25 boundary would be conducted 14 to 30 days prior to initiation of any ground disturbance or construction activity (USFWS 2011). During the kit fox survey, any diagnostic sign for kangaroo rat (burrows, scats, tail drags, dust baths, precincts and hay stacking, etc.) and any potential kangaroo rats burrows must be noted in the biological report and submitted to a Reclamation biologist. If no sign or evidence of San Joaquin kit fox or kangaroo rat is found, it is likely that they are not present in the area of disturbance and would not be directly affected by the Proposed Action. However, if there is evidence of kit fox or kangaroo rat, the project would be halted immediately and Reclamation staff notified within two working days. The project would be placed on hold until further analysis with Reclamation staff, and if necessary, consultation with the USFWS is complete. If consultation is not required a written approval letter to initiate the project would be provided by Reclamation.

Conclusion

Reclamation has determined there would be *No Effect* to listed species with certain restrictions, as described above, under the Endangered Species Act (16 U.S.C. §1531 et. seq.).

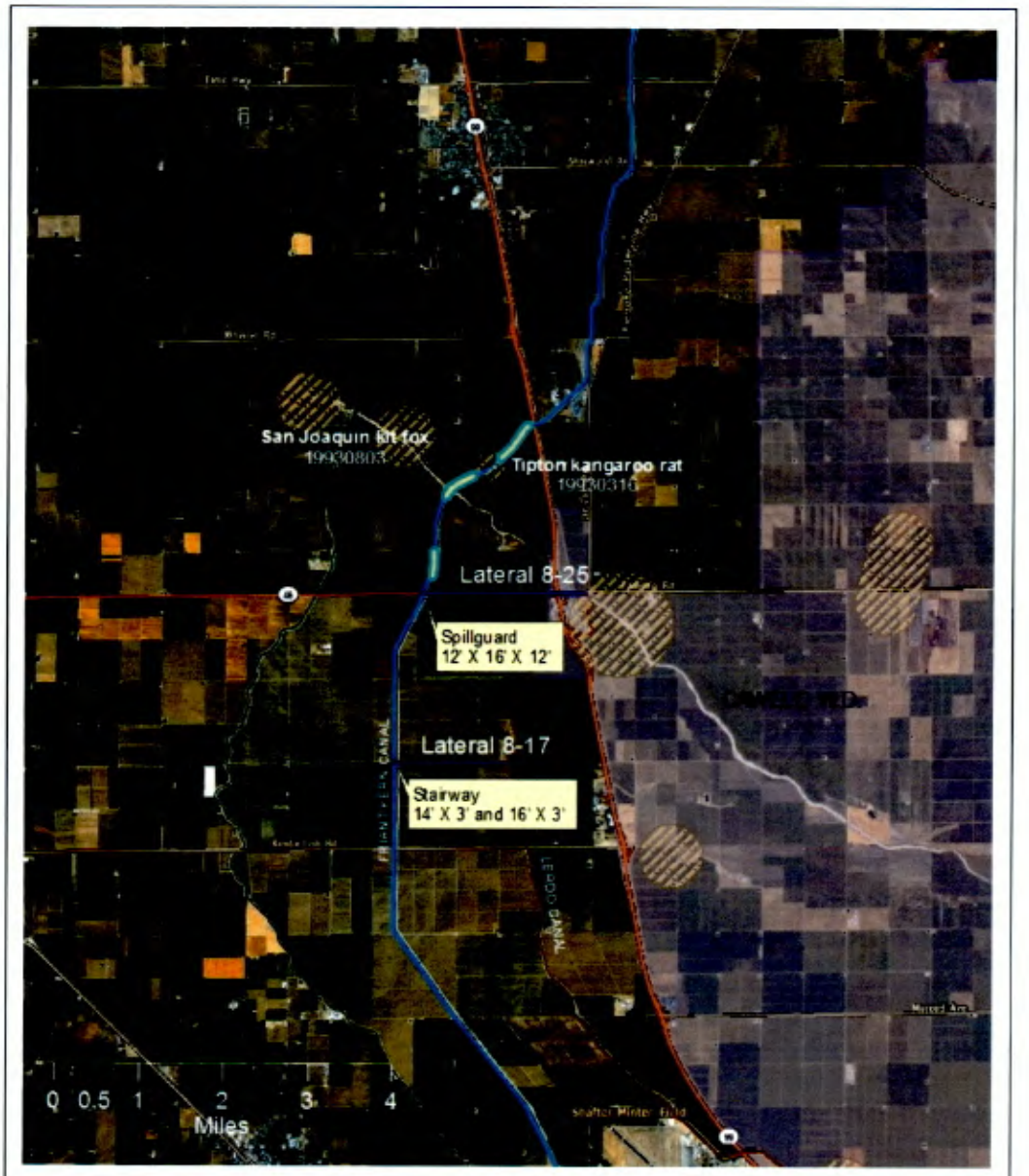
Thank you,

Jennifer L. Lewis

Jennifer L. Lewis
Wildlife Biologist
Bureau of Reclamation
South-Central California Area Office
1243 "N" Street
Fresno CA 93721-1831

References

USFWS (United States Fish and Wildlife Service). 2005. Formal Endangered Species Consultation on the Operations and Maintenance Program Occurring on Bureau of Reclamation Lands within the South-Central California Area Office, 2004. 1 -1-04-F-0368, Sacramento, California.



Long-Term (25-year) Warren Act Contract with Cawelo Water District	Figure 1. CNDDB Records Near Proposed Action Area at Lateral 8-25 and Lateral 8-17. Last Updated: Oct. 2011
U.S. Department of the Interior Bureau of Reclamation Mid-Pacific Region	Project: EA-06-066

Table 1. Identification number for Operation and Maintenance Activities*. Taken from: USFWS 2005.

1. Aquatic Weed Contact Herbicide Application 2. Blading and Disking Of Right-Of-Way. 3. Blading of O&M Roads. 4. Canal Bank Revegetation. 5. Canal/Tunnel/Conduit Liner Repair. 6. Chain Dragging - Interior Of Canal. 7. Chain Dragging Outside Bank Vegetation. 8. Contact Herbicide Applications. 9. Copper Sulfate Applications. 10. Canal Dewatering. 11. Drain Ditch and Channel Maintenance 12. Grazing. 13. Hand Control of Vegetation. 14. Insecticidal Sprays. 15. Mudjacking/Injecting Grout. 16. Pre-emergent Herbicide Applications. 17. Prescribed Burning For Weed Control. 18. Right Of Way Dust Abatement. 19. Right-Of-Way Mowing. 20. Rip Rap. 21. Roadway Chipseal. 22. Squirrel Baiting. 23. Bargate / Fence Installations. 24. Bridge Maintenance (Running Pad Replacement). 25. Cableway Maintenance (Painting/Cleaning/Repair). 26. Canal System Operator Residence Repair. 27. Cattle Guard Rehabilitation. 28. Down Drain Installation 29. Drainage Improvements (Ditches or Pipe). 30. Electrical Repairs by Utility Companies (PG&E / SCE or Others). 31. Embankment Maintenance (Fill washes and Gullies).	32. Facilities Inspection. 33. Graffiti Removal from Concrete Structures. 34. Guardrail Installation. 35. Valve Rehabilitation. 36. Ladders/Safety Nets/Float Repair and Replacement. 37. Pull and Check Pumps. 38. Radial Gate Rehabilitation. 39. Recorder House Maintenance (Door Repair, Painting, Cleaning, Etc). 40. Removal of Trash from Canal. 41. Right-Of-Way Trash Removal. 42. SCADA System Repair and Upgrade. 43. Sign Repair. 44. Stilling Well Maintenance (Pumping/Backflush Etc.). 45. Sump Pump Maintenance (Electrical/Mechanical/Piping). 46. Turnout Repair (In-Channel Prism). 47. Turnout Sandblasting and Painting (In-Channel Prism 48. Utility Trenching (SCADA/Power/Miscellaneous.) 49. Wash and Paint Turnouts and Check Structures. 50. Wash Bridges. 51. Beach Belting. 52. Canal Liner Extension. 53. Canal Desilting Operations. 54. Major Road Construction/Rehabilitation. 55. Equalizing Reservoir Desilting. 56. Dead Pool Pumping / Basin Discharge 57. Structure Construction (Blockhouses, Stilling Wells Etc.) 58. Utility And Facilities Repair. 59. Pump-In System Set-Up During Flood Years.

*Specific CWD Activities consulted on for the FKC: 58.

Table 2.

Routine O&M Activities on Terrestrial SCCAO Facilities – 2004 Programmatic O&M Consultation				
		Comprehensive O&M Design Criteria		
Description of Routine O&M Activity	Species	Screening Process	Species Avoidance/ Take Minimization Steps	Residual Effects/Determination Statements
57. **Structure Construction (Blockhouses, stilling wells etc.)** Structures are constructed irregularly along the FK-Canal, when new operational facilities are added. Sites are graded and forms set for pouring concrete pads. Framing may use concrete block, metal or wood, with metal siding. Trenching may be done to provide underground utilities to the site. Ground disturbance occurs at the site, potentially damaging or destroying burrows potentially used by listed species or by their prey.	CTS, SJKF, TKR CH: CTS, Vernal pool species	Review LSM for species descriptions, their distributions and habitat use. Identify habitat(s) in which O&M actions will occur and which also support listed species. Determine where impacts to habitat(s) from the O&M action overlap with the potential for occurrence of listed species. Review the CNDDB records and maps for species records of occurrence and their range distribution within the action area. Conduct surveys for presence of listed species in the action area. If needed, visit the action area to assess habitat and survey for listed species by conducting activities such as USFWS/CDFG kit fox survey protocols, searches for kit fox dens, searches for burrows of small mammals, including those of listed kangaroo rats, or elderberry plants (following USFWS Plant Survey Guidelines).	Follow O&M Guidelines. Follow guidelines for soil disturbance that may affect kangaroo rats and SJKF. Pre-construction surveys will be required for all construction areas. Coordination with Service will occur before construction begins if any listed species is found. For SJKFA search to locate animal burrows occurring within 200 feet of a proposed work site will be made by field staff before undertaking the work. Any burrow with an entrance diameter greater than four inches and with a depth of greater than 12 inches will be assumed to be a potential kit fox den and will need to be examined by a biologist before maintenance work is begun. After grading, or other ground disturbing work, all culverts within the work area must be cleared. If a kit fox is in the culvert, it must be left undisturbed until the fox has left, after which time the culvert will be cleared. Work may not continue if listed kangaroo rats are sighted unless the animals are relocated under a plan pre-approved by Reclamation, Service and CDFG and/or a mitigation plan is developed in coordination with Reclamation and approved by Service and CDFG. SCCAO will visit the site and advise on approaches to help minimize impacts, if needed.	With implementation of the described avoidance /minimization there is no effect of this action on listed species. CH: WNM – With the required pre-construction surveys and other avoidance measures effects to the PCE's of the critical habitat will not reach the threshold of adverse modification.

U.S. FISH AND WILDLIFE SERVICE STANDARDIZED RECOMMENDATIONS FOR PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX PRIOR TO OR DURING GROUND DISTURBANCE

Prepared by the Sacramento Fish and Wildlife Office
January 2011

INTRODUCTION

The following document includes many of the San Joaquin kit fox (*Vulpes macrotis mutica*) protection measures typically recommended by the U. S. Fish and Wildlife Service (Service), prior to and during ground disturbance activities. **However, incorporating relevant sections of these guidelines into the proposed project is not the only action required under the Endangered Species Act of 1973, as amended (Act) and does not preclude the need for section 7 consultation or a section 10 incidental take permit for the proposed project.** Project applicants should contact the Service in Sacramento to determine the full range of requirements that apply to your project; the address and telephone number are given at the end of this document. Implementation of the measures presented in this document may be necessary to avoid violating the provisions of the Act, including the prohibition against "take" (defined as killing, harming, or harassing a listed species, including actions that damage or destroy its habitat). These protection measures may also be required under the terms of a biological opinion pursuant to section 7 of the Act resulting in incidental take authorization (authorization), or an incidental take permit (permit) pursuant to section 10 of the Act. The specific measures implemented to protect kit fox for any given project shall be determined by the Service based upon the applicant's consultation with the Service.

The purpose of this document is to make information on kit fox protection strategies readily available and to help standardize the methods and definitions currently employed to achieve kit fox protection. The measures outlined in this document are subject to modification or revision at the discretion of the Service.

IS A PERMIT NECESSARY?

Certain acts need a permit from the Service which includes destruction of any known (occupied or unoccupied) or natal/pupping kit fox dens. Determination of the presence or absence of kit foxes and /or their dens should be made during the environmental review process. All surveys and monitoring described in this document must be conducted by a qualified biologist and these activities do not require a permit. A qualified biologist (biologist) means any person who has completed at least four years of university training in wildlife biology or a related science and/or has demonstrated field experience in the identification and life history of the San Joaquin kit fox. In addition, the biologist(s) must be able to identify coyote, red fox,

gray fox, and kit fox tracks, and to have seen a kit fox in the wild, at a zoo, or as a museum mount. Resumes of biologists should be submitted to the Service for review and approval prior to an6y survey or monitoring work occurring.

SMALL PROJECTS

Small projects are considered to be those projects with small foot prints, of approximately one acre or less, such as an individual in-fill oil well, communication tower, or bridge repairs. These projects must stand alone and not be part of, or in any way connected to larger projects (i.e., bridge repair or improvement to serve a future urban development). The Service recommends that on these small projects, the biologist survey the proposed project boundary and a 200-foot area outside of the project footprint to identify habitat features and utilize this information as guidance to situate the project to minimize or avoid impacts. If habitat features cannot be completely avoided, then surveys should be conducted and the Service should be contacted for technical assistance to determine the extent of possible take.

Preconstruction/preactivity surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San Joaquin kit fox. Kit foxes change dens four or five times during the summer months, and change natal dens one or two times per month (Morrell 1972). Surveys should identify kit fox habitat features on the project site and evaluate use by kit fox and, if possible, assess the potential impacts to the kit fox by the proposed activity. The status of all dens should be determined and mapped (see Survey Protocol). Written results of preconstruction/preactivity surveys must be received by the Service within five days after survey completion and prior to the start of ground disturbance and/or construction activities.

If a natal/pupping den is discovered within the project area or within 200-feet of the project boundary, the Service shall be immediately notified and under no circumstances should the den be disturbed or destroyed without prior authorization. If the preconstruction/preactivity survey reveals an active natal pupping or new information, the project applicant should contact the Service immediately to obtain the necessary take authorization/permit.

If the take authorization/permit has already been issued, then the biologist may proceed with den destruction within the project boundary, except natal/pupping den which may not be destroyed while occupied. A take authorization/permit is required to destroy these dens even after they are vacated. Protective exclusion zones can be placed around all known and potential dens which occur outside the project footprint (conversely, the project boundary can be demarcated, see den destruction section).

OTHER PROJECTS

It is likely that all other projects occurring within kit fox habitat will require a take authorization/permit from the Service. This determination would be made by the Service during the early evaluation process (see Survey Protocol). These other projects would include, but are not limited to: Linear projects; projects with large footprints such as urban development; and projects which in themselves may be small but have far reaching impacts (i.e., water storage or conveyance facilities that promote urban growth or agriculture, etc.).

The take authorization/permit issued by the Service may incorporate some or all of the protection measures presented in this document. The take authorization/permit may include measures specific to the needs of the project and those requirements supersede any requirements found in this document.

EXCLUSION ZONES

In order to avoid impacts, construction activities must avoid their dens. The configuration of exclusion zones around the kit fox dens should have a radius measured outward from the entrance or cluster of entrances due to the length of dens underground. The following distances are **minimums**, and if they cannot be followed the Service must be contacted. Adult and pup kit foxes are known to sometimes rest and play near the den entrance in the afternoon, but most above-ground activities begin near sunset and continue sporadically throughout the night. Den definitions are attached as Exhibit A.

Potential den**	50 feet
Atypical den**	50 feet
Known den*	100 feet
Natal/pupping den (occupied and unoccupied)	Service must be contacted

*Known den: To ensure protection, the exclusion zone should be demarcated by fencing that encircles each den at the appropriate distance and does not prevent access to the den by kit foxes. Acceptable fencing includes untreated wood particle-board, silt fencing, orange construction fencing or other fencing as approved by the Service as long as it has openings for kit fox ingress/egress and keeps humans and equipment out. Exclusion zone fencing should be maintained until all construction related or operational disturbances have been terminated. At that time, all fencing shall be removed to avoid attracting subsequent attention to the dens.

**Potential and Atypical dens: Placement of 4-5 flagged stakes 50 feet from the den entrance(s) will suffice to identify the den location; fencing will not be required, but the exclusion zone must be observed.

Only essential vehicle operation on existing roads and foot traffic should be permitted. Otherwise, all construction, vehicle operation, material storage, or any other type of surface-disturbing activity should be prohibited or greatly restricted within the exclusion zones.

DESTRUCTION OF DENS

Limited destruction of kit fox dens may be allowed, if avoidance is not a reasonable alternative, provided the following procedures are observed. The value to kit foxes of potential, known, and natal/pupping dens differ and therefore, each den type needs a different level of protection. **Destruction of any known or natal/pupping kit fox den requires take authorization/permit from the Service.**

Destruction of the den should be accomplished by careful excavation until it is certain that no kit foxes are inside. The den should be fully excavated, filled with dirt and compacted to ensure that kit foxes cannot reenter or use the den during the construction period. If at any point during excavation, a kit fox is discovered inside the den, the excavation activity shall cease immediately and monitoring of the den as described above should be resumed. Destruction of the den may be completed when in the judgment of the biologist, the animal has escaped, without further disturbance, from the partially destroyed den.

Natal/pupping dens: Natal or pupping dens which are occupied will not be destroyed until the pups and adults have vacated and then only after consultation with the Service. Therefore, project activities at some den sites may have to be postponed.

Known Dens: Known dens occurring within the footprint of the activity must be monitored for three days with tracking medium or an infra-red beam camera to determine the current use. If no kit fox activity is observed during this period, the den should be destroyed immediately to preclude subsequent use.

If kit fox activity is observed at the den during this period, the den should be monitored for at least five consecutive days from the time of the observation to allow any resident animal to move to another den during its normal activity. Use of the den can be discouraged during this period by partially plugging its entrances(s) with soil in such a manner that any resident animal can escape easily. Only when the den is determined to be unoccupied may the den be excavated under the direction of the biologist. If the animal is still present after five or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant, for example during the animal's normal foraging activities. **The Service encourages hand excavation, but realizes that soil conditions may necessitate the use of excavating equipment. However, extreme caution must be exercised.**

Potential Dens: If a take authorization/permit has been obtained from the Service, den destruction may proceed without monitoring, unless other restrictions were issued with the take authorization/permit. If no take authorization/permit has been issued, then potential dens should be monitored as if they were known dens. If any den was considered to be a potential den, but is later determined during monitoring or destruction to be currently, or previously used by kit fox (e.g., if kit fox sign is found inside), then all construction activities shall cease and the Service shall be notified immediately.

CONSTRUCTION AND ON-GOING OPERATIONAL REQUIREMENTS

Habitat subject to permanent and temporary construction disturbances and other types of ongoing project-related disturbance activities should be minimized by adhering to the following activities. Project designs should limit or cluster permanent project features to the smallest area possible while still permitting achievement of project goals. To minimize temporary disturbances, all project-related vehicle traffic should be restricted to established roads, construction areas, and other designated areas. These areas should also be included in preconstruction surveys and, to the extent possible, should be established in locations disturbed by previous activities to prevent further impacts.

1. Project-related vehicles should observe a daytime speed limit of 20-mph throughout the site in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. Night-time construction should be minimized to the extent possible. However if it does occur, then the speed limit should be reduced to 10-mph. Off-road traffic outside of designated project areas should be prohibited.

2. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2-feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the Service and the California Department of Fish and Game (CDFG) shall be contacted as noted under measure 13 referenced below.

3. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe

may be moved only once to remove it from the path of construction activity, until the fox has escaped.

4. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers and removed at least once a week from a construction or project site.

5. No firearms shall be allowed on the project site.

6. No pets, such as dogs or cats, should be permitted on the project site to prevent harassment, mortality of kit foxes, or destruction of dens.

7. Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the Service. If rodent control must be conducted, zinc phosphide should be used because of a proven lower risk to kit fox.

8. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the Service.

9. An employee education program should be conducted for any project that has anticipated impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and/or agency personnel involved in the project. The program should include the following: A description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.

10. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is

disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the Service, California Department of Fish and Game (CDFG), and revegetation experts.

11. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service should be contacted for guidance.

12. Any contractor, employee, or military or agency personnel who are responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFG immediately in the case of a dead, injured or entrapped kit fox. The CDFG contact for immediate assistance is State Dispatch at (916)445-0045. They will contact the local warden or Mr. Paul Hoffman, the wildlife biologist, at (530)934-9309. The Service should be contacted at the numbers below.

13. The Sacramento Fish and Wildlife Office and CDFG shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFG contact is Mr. Paul Hoffman at 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670, (530) 934-9309.

14. New sightings of kit fox shall be reported to the California Natural Diversity Database (CNDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the Service at the address below.

Any project-related information required by the Service or questions concerning the above conditions or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at:

Endangered Species Division
2800 Cottage Way, Suite W2605
Sacramento, California 95825-1846
(916) 414-6620 or (916) 414-6600

EXHIBIT "A" - DEFINITIONS

"Take" - Section 9 of the Endangered Species Act of 1973, as amended (Act) prohibits the "take" of any federally listed endangered species by any person (an individual, corporation, partnership, trust, association, etc.) subject to the jurisdiction of the United States. As defined in the Act, take means " . . . to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct". Thus, not only is a listed animal protected from activities such as hunting, but also from actions that damage or destroy its habitat.

"Dens" - San Joaquin kit fox dens may be located in areas of low, moderate, or steep topography. Den characteristics are listed below, however, the specific characteristics of individual dens may vary and occupied dens may lack some or all of these features. Therefore, caution must be exercised in determining the status of any den. Typical dens may include the following: (1) one or more entrances that are approximately 5 to 8 inches in diameter; (2) dirt berms adjacent to the entrances; (3) kit fox tracks, scat, or prey remains in the vicinity of the den; (4) matted vegetation adjacent to the den entrances; and (5) manmade features such as culverts, pipes, and canal banks.

"Known den" - Any existing natural den or manmade structure that is used or has been used at any time in the past by a San Joaquin kit fox. Evidence of use may include historical records, past or current radiotelemetry or spotlighting data, kit fox sign such as tracks, scat, and/or prey remains, or other reasonable proof that a given den is being or has been used by a kit fox. The Service discourages use of the terms "active" and "inactive" when referring to any kit fox den because a great percentage of occupied dens show no evidence of use, and because kit foxes change dens often, with the result that the status of a given den may change frequently and abruptly.

"Potential Den" - Any subterranean hole within the species' range that has entrances of appropriate dimensions for which available evidence is insufficient to conclude that it is being used or has been used by a kit fox. Potential dens shall include the following: (1) any suitable subterranean hole; or (2) any den or burrow of another species (e.g., coyote, badger, red fox, or ground squirrel) that otherwise has appropriate characteristics for kit fox use.

"Natal or Pupping Den" - Any den used by kit foxes to whelp and/or rear their pups. Natal/pupping dens may be larger with more numerous entrances than dens occupied exclusively by adults. These dens typically have more kit fox tracks, scat, and prey remains in the vicinity of the den, and may have a broader apron of matted dirt and/or vegetation at one or more entrances. A natal den, defined as a den in which kit fox pups are actually whelped but not necessarily reared, is a more restrictive version of the pupping den. In practice, however, it is difficult to distinguish between the two, therefore, for purposes of this definition either term applies.

"Atypical Den" - Any manmade structure which has been or is being occupied by a San Joaquin kit fox. Atypical dens may include pipes, culverts, and diggings beneath concrete slabs and buildings.