

RECLAMATION

Managing Water in the West

Environmental Assessment 17-13-MP

Refuge Acquisition Agreement for Tertiary Treated Water Project for East Bear Creek Unit of the San Luis National Wildlife Refuge Complex

Refuge Water Supply Program
Bureau of Reclamation, Mid-Pacific Region
Sacramento, California



August 2017

Mission Statements

The Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated 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.

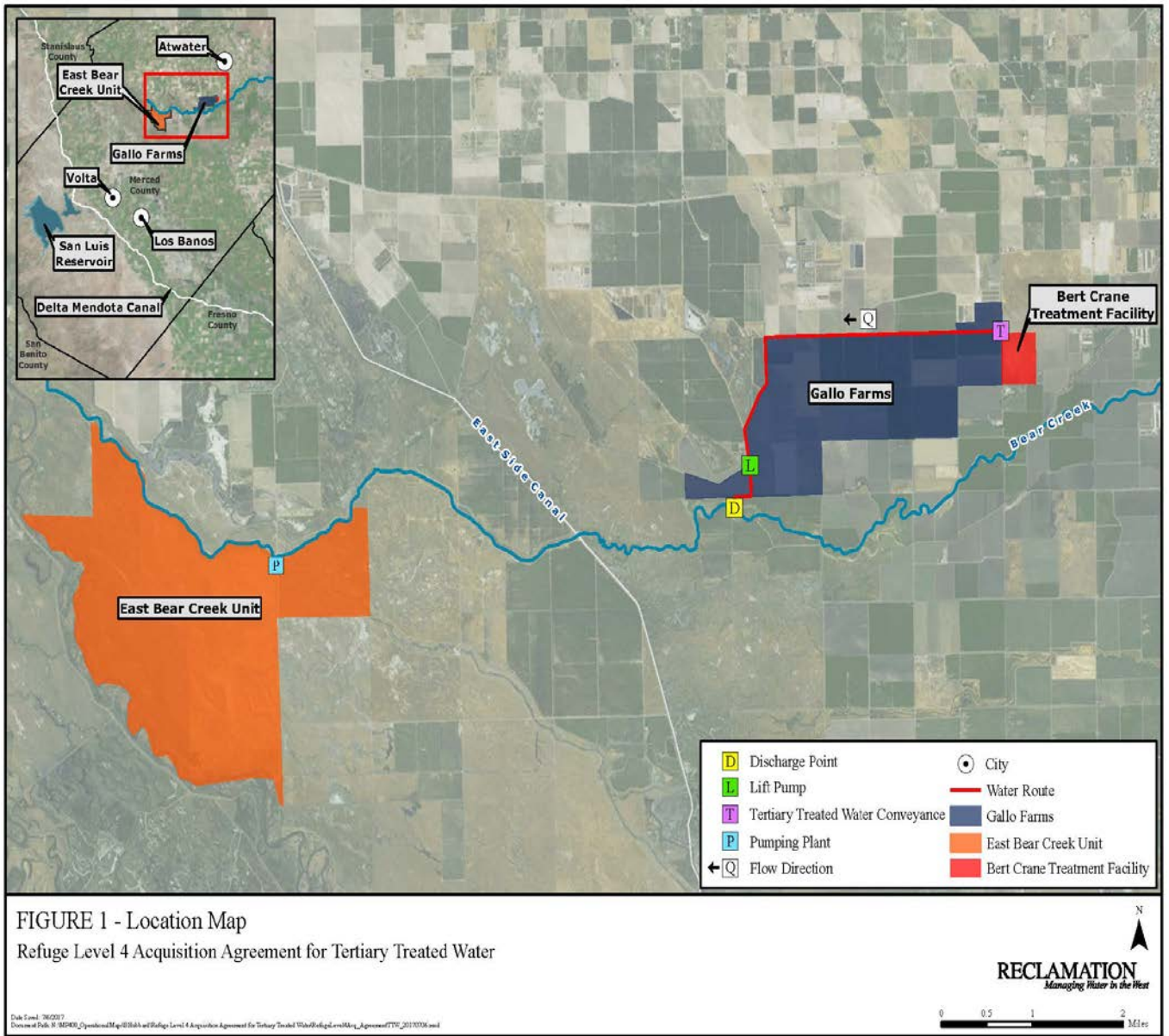
Section 1 Introduction

The Bureau of Reclamation (Reclamation) proposes entering into an agreement with Santa Rita Water, LCC (Santa Rita) for the purchase of tertiary treated recycled water (Proposed Action). The term of the Agreement will be one year and is expected to be executed in the fall of 2017.

The Proposed Action, located in Merced County, California (see **Figure 1**), would allow for the purchase of Level 4 (L4) tertiary treated water (Acquired Water). Santa Rita proposes to provide the East Bear Creek Unit of the San Luis National Wildlife Refuge complex (Refuge) up to 6,000 acre-feet (AF) of Acquired Water. The Acquired Water would leave the Gallo Farms Point of Discharge and likely join other instream flows before entering Bear Creek. The Acquired Water would travel down Bear Creek to the Refuge pump station approximately 5 miles west.

1.1 Need for the Proposal

The need for the Proposed Action is to provide L4 water supplies to the Refuge in accordance with requirements under Section 3406(d) of the Central Valley Improvement Act (CVPIA).



Section 2 Proposed Action and Alternatives

2.1 No Action Alternative

The No Action Alternative would consist of Reclamation not entering into an agreement with Santa Rita to fund the acquisition of L4 tertiary treated recycled water supplies to help meet Refuge demand. The delivery of water to the Refuge from Santa Rita for purposes defined in this EA would not occur. The portion of the water delivered as L2 would not be exchanged and would not provide water to other South of Delta (SOD) Central Valley Project Improvement Act (CVPIA) refuges.

2.2 Proposed Action Alternative

The Proposed Action involves Reclamation entering into an agreement with Santa Rita to purchase tertiary treated recycled water (Acquired Water). Santa Rita would provide Reclamation up to 6,000 acre feet (AF) of tertiary treated recycled water to be delivered to the Refuge; the Acquired Water would leave the Gallo Point of Discharge into a natural channel where there is an existing pipe inlet and standpipe to Bear Creek. The Acquired Water will then blend with other instream flows (if existing) in Bear Creek, the combined waters would travel to the Refuge pump station, approximately 5 miles west. The original source of the Acquired Water comes from the City of Atwood's Bert Crane Treatment Facility. The term of the Agreement will be one year and delivery of water is expected to begin in fall 2017.

The Acquired Water would be metered at the discharge point on Gallo Farms to measure the volume of tertiary treated recycled water being discharged. A conveyance loss factor of 10% has been estimated based on a review of the type of channel flow, time of year and current condition of the channel. Water quality sampling of the Acquired Water will be conducted according to a monitoring plan to provide representative concentrations of the tertiary treated recycled water quality being discharged to Bear Creek.

The Acquired Water would be pumped onto Refuge land and be used for the benefit of wildlife. Santa Rita will provide Reclamation up to 6,000 AF of Acquired Water for the Refuge. The Proposed Action would also provide up 3,000 AF of IL4 water to SOD CVPIA refuges.

Section 3 Affected Environment and Environmental Consequences

This section discusses the affected environment and environmental consequences of the Proposed Action and the No Action Alternative, in addition to environmental trends and conditions that currently exist.

Potential impacts to the following resources were considered and found to be minor. Brief explanations for the impacts are provided below:

- **Indian Trust Assets (ITA):** ITAs are legal interests in assets that are held in trust by the United States for federally recognized Indian tribes or individuals. The closest ITA to the Proposed Action activity is a Public Domain allotment about 45 miles to the northwest. Based on the nature of the planned work it does not appear to be in an area that will impact Indian hunting or fishing resources or water rights nor is the proposed activity on actual Indian lands. The Proposed Action does not have the potential to affect ITAs.
- **Indian Sacred Sites:** The Proposed Action would not affect and/or prohibit access to and ceremonial use of Indian sacred sites.
- **Cultural Resources:** Reclamation has determined that the Proposed Action is the type of undertaking that does not have the potential to cause effects on historic properties, should such properties be present, pursuant to 36 CFR § 800.3(a)(1). As such, Reclamation has no further obligations under 54 U.S.C. § 306108, commonly known as Section 106 of the National Historic Preservation Act (NHPA).
- **Environmental Justice:** Executive Order 12898 requires each Federal agency to identify and address disproportionately high and adverse human health or environmental effects, including social and economic effects of its program, policies, and activities on minority populations and low-income populations. No significant changes in refuge management or in agricultural communities or practices would result from the Proposed Action. Accordingly, the Proposed Action would not have disproportionately negative impacts on low-income or minority populations within the study area.

The overall study area includes specific analysis for each resource that may be directly or indirectly affected by the use of Acquired Water for habitat management purposes within the Refuge. The overall study area also includes Santa Rita's boundaries. The Refuge and Gallo Farms are located in Merced County (**Figure 1**). The counties are bounded by the Sierra Nevada Mountains to the east and the Pacific coastal range to the west. The study area region is characterized by flat valley lowland wetlands and agricultural lands, with a climate that is cool and moist in the winter and hot and dry in the summer.

3.1 Surface Water Resources

3.1.1 Affected Environment

Bear Creek

Bear Creek is an ephemeral stream with some minimal flood control features to limit potential for damages as it makes its way through the City of Merced, but is otherwise largely uncontrolled. At times, Bear Creek within the Proposed Action area has flows during the summer due to spill from Merced Irrigation District's delivery system. Flood flows that are not diverted make their way to the San Joaquin River. There are water rights associated with Bear Creek with diversions at various points including the Eastside Canal, but much of the flow in the lower reaches of Bear Creek are the result of releases of Merced River water into Bear Creek as operational spills or for subsequent diversion by downstream water users. Since fall of 2016, San Joaquin River Restoration Project (SJRRP) Restoration Flows have entered Bear Creek upstream of the Refuge. SJRRP anticipates that there will be year-round flows in most years, thus causing Bear Creek to no longer be an ephemeral channel due to the SJRRP flows.

Water quality in Bear Creek is generally good; however, the State Water Resources Control Board (SWRCB) has identified water quality impairments in 84 miles of Bear Creek (from Bear Valley to the San Joaquin River) located within Mariposa and Merced counties which includes the Proposed Action area (SWRCB 2014). Impairments are due to *Escherichia coli* and unknown toxicity although sources of the contaminants are unknown. The SWRCB has listed this section of Bear Creek as a Category 5 (a water segment where standards are not met and a Total Maximum Daily Load [TMDL] is required, but not yet completed, for at least one of the pollutants being listed for the segment). TMDLs are scheduled to be completed by 2021 (SWRCB 2014).

Gallo Farm Lands - Agricultural Areas

Gallo Farms is located northeast of the Refuge in Merced County as shown on **Figure 1**. Gallo Farms grows cattle feed to support its dairies and cheese manufacturing operation. Historically, Gallo Farms received secondary treated wastewater from the City of Atwater's previous wastewater treatment plant (WWTP) located near Freeway 99. With the completion of the City's new WWTP located on South Bert Crane Road, as shown on **Figure 1**, Gallo Farms now receives disinfected tertiary treated water from the new WWTP. The treated water has been used to irrigate seasonal corn crops for use as cattle feed at their dairies. With recent modifications to its cropping pattern and conservation efforts Gallo Farms has the capability to make the treated water it receives available to Reclamation for delivery to the Refuge.

East Bear Creek Unit Refuge

The Refuge is located east of the San Joaquin River, in Merced County, and contains native uplands, seasonal wetlands, vernal pools, and riparian floodplain habitat. The Refuge is managed primarily for migratory waterfowl, shorebirds, marsh, water birds, and riparian birds and their associated habitat types, as well as for listed species. The Refuge provides critically important habitat for both resident species and the migratory waterfowl that utilize the Pacific Flyway, and requires substantial water supplies.

Historically, the water supplies delivered to the Refuge have been obtained by diverting water from Bear Creek via its riparian water rights or water annually acquired by Reclamation's Refuge Water Supply Program (RWSP) from willing sellers. The average annual supply purchased for the Refuge has been approximately 3,103 AF, substantially less than the optimal amount. As a result, the Refuge remains underdeveloped for optimum wetland management in support of migratory birds.

3.1.2 Environmental Consequences

No Action

Under the No Action Alternative, the Refuge would rely upon available Bear Creek flows or some acquisitions from other sources as they have in the past. The Refuge utilizes water during the spring irrigation season from intermittent Bear Creek flows, if they are available. Refuge L2 water would not be exchanged and made available to SOD refuges as IL4.

Proposed Action

This action would not adversely affect CVP operations. Surface water would be provided for reasonable and beneficial use within the Refuge, to meet habitat needs for wildlife.

Cumulative Impacts

No adverse impacts to surface water resources would result from implementation of the Proposed Action, therefore, the Proposed Action would not contribute to cumulative impacts to surface water resources.

3.2 Water Quality

3.2.1 Affected Environment

City of Atwater and Gallo Farm Land

The City of Atwater's tertiary treated water sent to Gallo Farms has been extensively monitored since receiving the National Pollutant Discharge Elimination System permit. The most recent water quality monitoring results are attached in **Appendix B** for reference.

East Bear Creek Unit Refuge

The surface water taken from Bear Creek via the pumping plant and provided to the Refuge for habitat purposes has always been of acceptable quality. Regional groundwater quality is highly variable on lands to the east of the San Joaquin River with the best water quality being reported in areas served by shallow wells associated with recharge areas supplied by east-side tributaries such as the Merced River and Bear Creek with poorer water quality reported from deeper wells closer to the San Joaquin River. Water quality in the above-Corcoran semi-confined aquifer is affected by the regional flow system that is influenced by recharge from local streams and surface water conveyances and drainage into the San Joaquin River to the west. Newer man-made channels which cut through sandy formations within the shallow groundwater aquifer may experience high rates of seepage. Older natural channels may seal over time as fine grained materials plug the interstices between sand grains and hence experience low rates of seepage. In the latter case, the rate of seepage is dictated by the permeability of the streambed rather than the permeability of the shallow aquifer.

3.2.2 Environmental Consequences

No Action

The No Action Alternative would consist of Reclamation not entering into an agreement with Santa Rita to purchase tertiary treated water to help meet the Refuge's L4 water demands.

Proposed Action

The Proposed Action would include implementation of a water quality monitoring plan (see **Appendix A**) to ensure that water quality standards are not exceeded. If water quality monitoring indicates unsuitable water quality, water deliveries to Bear Creek and to the Refuge deliveries would be modified or curtailed as necessary to stay in compliance with established thresholds. Further detail is provided in the WQMP included in **Appendix A**. The WQMP includes monitoring of specific Chemicals of Emerging Concern (CECs) in addition to the monitoring that the City of Atwater undertakes.

Surface Water Quality

Under the Proposed Action, surface water quality sampling and analysis will be conducted in Bear Creek to help ensure compliance with surface water quality objectives set for the Proposed Action. If a surface water quality objective is exceeded water discharged into Bear Creek and pumped into the Refuge will be modified or curtailed until surface water quality objectives are met. The water quality monitoring and reporting for the Proposed Action is described in the WQMP.

Cumulative Impacts

Under the Proposed Action, impacts to water quality would not be significant and monitoring would occur along with any follow-on actions required under the WQMP. Therefore, the Proposed Action would not contribute to cumulative impacts to water quality.

3.3 Biological Resources

3.3.1 Affected Environment

The habitats present at the Refuge are natural valley grasslands and developed marsh. The Refuge is managed primarily for migratory waterfowl, shorebirds, marsh and water birds, and their associated habitat types as well as for listed species. The Refuge provides wetland habitat as a major wintering ground and migratory stopover point for large concentrations of waterfowl, shorebirds and other waterbirds (Service 2012a). A rich botanical community of native bunchgrasses, native and exotic annual grasses, forbs, native shrubs, trees, and a variety of animal species are found within these areas.

Managed heavily for migratory waterfowl and their associated habitat types, the Refuge has additional implications with the Migratory Bird Treaty Act (MBTA). Many species of birds protected under the MBTA occur within the Proposed Action project area.

Riparian

There are no large or sensitive riparian habitats that occur in the Proposed Action area or near the water delivery areas.

Agricultural Lands

Agricultural lands within and adjacent to the study area include flood irrigated pastures, orchards, and row crops. Pastures are typically cultivated in alfalfa (*Medicago sativa*), rescue grass (*Bromus catharticus*), Johnson's grass (*Sorghum halepense*), tall fescue (*Festuca arundinaceae*), and Italian ryegrass (*Festuca perennis*). Some of the key orchard crops in the vicinity of the Proposed Action are apricot (*Prunus armeniaca*), English walnut (*Juglans regia*), and almond (*Prunus dulcis*) cultivars. Row crops include broccoli (*Brassica oleracea*), corn (*Zea mays*), and tomatoes (*Solanum lycopersicum*), among others. Flood irrigated pastures provide food, cover, and nesting grounds for wildlife species; the value of the habitat varies with crop type and agricultural practices. Bird diversity can be high in irrigated pastures. Species commonly utilizing pasture lands include red-winged blackbird (*Agelaius phoeniceus*), Brewer's blackbird (*Euphagus cyanocephalus*), western meadowlarks (*Sturnella neglecta*), European startling (*Sturnus vulgaris*), house finch (*Carpodacus mexicanus*), killdeer (*Charadrius vociferous*), American crow (*Corvus brachyrhynchos*), and American kestrel (*Falco sparverius*). Some pasture lands and crop fields provide suitable breeding habitat for northern harrier (*Circus cyaneus*). Small mammals in flood irrigated pasture and row crops provide important prey resources for raptors such as red-tailed hawk (*Buteo jamaicensis*) and Swainson's hawk (*Buteo swainsoni*).

Wildlife

The list of federally listed, proposed and candidate species is included in **Appendix C** (USFWS 2017). Although there are 14 species identified in the list, only those species that could potentially occur in the action area are analyzed in detail.

Giant Garter Snake

The giant garter snake inhabits wetland habitats and vegetated permanent water channels in scattered subpopulations in the Central Valley from Butte County in the north to Fresno County in the south. It is believed to be extirpated from the vicinity of Buena Vista and Tulare Lakes south of Fresno County. Giant garter snakes are always found in close proximity to permanent or semi-permanent water with vegetated perimeters. Giant garter snakes are aquatic feeders specializing in capturing small fish and frogs in or under water. The giant garter snake spends the winter in upland retreats above the high water level.

Swainson's Hawk

This species is the most migratory of all North American Buteos. It breeds and summers in the arid and semiarid regions of western North America and winters on the pampas of Argentina. The breeding population in California has declined by an estimated 90 percent. In 1979, the breeding population in California was estimated at 375 pairs.

San Joaquin Kit Fox

The San Joaquin kit fox, a state-listed threatened and federally listed endangered species, is a small nocturnal canid which now occurs in scattered populations from Contra Costa County south to Kern County. Historically, this species occupied extensive areas of semiarid lands in the San Joaquin Valley. Flat topography in valley bottoms with valley sink scrub, valley saltbush scrub, interior coast range saltbush scrub, nonnative grassland and alkali playa plain communities (described in Holland, 1986) are the typical habitat, but substantial populations have always inhabited the surrounding low foothills where slopes do not exceed 40 degrees (O'Farrell 1983). Agricultural, industrial, and urban developments have caused rapidly increasing rates of habitat loss.

The San Joaquin kit fox is an obligate year-round burrow dweller which feeds largely upon lagomorphs and kangaroo rats (but would utilize whatever prey is locally abundant). Numerous dens are excavated and inhabited in the course of a year and individuals may cover great distances while foraging and/or dispersing.

The San Joaquin kit fox is considered here because of the potential foraging habitat (irrigated pasture and seasonally flooded grassland and alkali sink scrub). No known active or potential kit fox dens have been observed within the study area.

3.3.2 Environmental Consequences

No Action

Conditions would remain the same as existing conditions if no action were taken. There would be no negative impacts to wildlife, including threatened and endangered species, their critical habitat, or general habitat types.

Proposed Action

The conveyance of tertiary treated water from Santa Rita to the Refuge would not adversely affect aquatic species or their habitat. Habitat for Delta smelt, Chinook salmon (spring and winter run), Central Valley steelhead, or green sturgeon would not be affected because no construction or major flow modifications are proposed on natural waterways. There would be no effect to federally listed fish species mentioned above and there would be no modification of critical habitat for the species as a result of the Proposed Action.

Water is expected to continue to be of suitable quality for other aquatic species at the Refuge. Water quality would be tested during the Proposed Action at the discharge point from Gallo Farms and at the Refuge pumping plant's intake. If water quality is determined to be of unsuitable quality, pumping into the Refuge conveyance system would be modified or curtailed.

Overall, the Proposed Action would provide a benefit to waterfowl, shorebirds, and raptors, as the water would be used for refuge management. The Proposed Action would not adversely affect any riparian habitats.

Cumulative Impacts

Implementation of the Proposed Action would not result in adverse effects to biological resources, and therefore could not contribute to cumulative impacts.

Section 4 Consultation and Coordination

4.1 Public Review Period

This EA will be made available for a two week period from August 17 to August 31, 2017.

4.2 Resource Management Agencies

Reclamation has coordinated closely with USFWS during the planning and development of the short term project. USFWS has reviewed and provided input on the WQMP.

Section 5 References

Holland, Robert F. 1986. (Holland 1986), *Preliminary Descriptions of the Terrestrial Natural Communities of California*. Dated October 1986.

O'Farrell, T.P. 1983. (O'Farrell 1983) *San Joaquin kit fox recovery plan*. Prepared for the U.S. Fish and Wildlife Service, Portland, OR.

Panoche Water District Water Management Plan. 2014 (5 Year Update). (PWD 2014).
Website: [CA Department of Water Resources](#). Accessed: June 15, 2016.

San Luis Water District 2011/2012 Water Management Plan. 2013 (SLWD 2013).
Website: [San Luis Water District Water Management Plan](#). Accessed: June 17, 2016.

U.S. Bureau of Reclamation (Reclamation). 2014. (Reclamation 2014) Environmental Assessment, *Warren Act Contract for Conveyance and Storage of Groundwater from 4-S Ranch and SHS Ranch to Del Puerto Water District*, Dated July 30, 2014.

U.S. Fish & Wildlife Service. August 15, 2017. Species List Generator, Project Area within Merced, Stanislaus, and San Joaquin Counties. ([USFWS Species List Generator](#))

Appendix A – Water Quality Monitoring Plan

RECLAMATION

Managing Water in the West

East Bear Creek Water Quality Monitoring Plan



U.S. Department of the Interior
Bureau of Reclamation

August 2017

Mission Statements

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RECLAMATION

Managing Water in the West

East Bear Creek Water Quality Monitoring Plan

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Introduction

The United States Bureau of Reclamation (Reclamation) will monitor the quality of water delivered to the East Bear Creek Refuge (Refuge, managed by the U.S. Fish and Wildlife Service or USFWS). Water delivered for the Proposed Project is treated municipal wastewater delivered to the Gallo Farms from the City of Atwater.

This monitoring effort is being developed in support of a provision in the *The Purchase of Tertiary Treated Water for Refuge Level 2 Water between the United States and Santa Rita, LLC (Gallo Farms)* (Agreement). Under the Agreement, Reclamation is responsible for implementing a water quality monitoring plan (WQMP) for water developed pursuant to the Agreement.

Surface and groundwater monitoring is carried out by Reclamation's Environmental Affairs Division, Environmental Monitoring Branch (MP-157) for Reclamation's Resources Division, Program Management Branch (MP-410).

Goals and Objectives

The principal intent of the WQMP is to ensure that water provided to the Refuge is of suitable quality to protect the beneficial uses of Refuge waters.

Background

Section 3406(d) of the Central Valley Project Improvement Act (CVPIA), Public Law 102-575, Title 34 (1992), authorizes and directs the Secretary of the Interior, through Reclamation, to deliver firm water supplies of suitable quality to 19 federal, state, and private wetland habitats, wildlife areas and wildlife refuges (collectively referred to as Refuges) located in the Central Valley.

The Refuge and Santa Rita have agreed to transfer up to 6,000 acre-feet (AF) per year (AFY) of tertiary-treated wastewater and managed waters from Gallo farmlands to the Refuge over a one-year period. Transferred waters would leave the Gallo Point of Discharge (see Fig 1, Water Transfer Route) and join instream flows, entering first at Bear Creek, then the East Side Canal, and then Bear Creek again until reaching the Refuge's pump station approximately 5 miles west. The lift pump on the Gallo property has a flow meter to measure the volume of discharge water to the natural channel. An existing pipe inlet and standpipe along the slough connection to Bear Creek provides the ability to discharge to the natural channel of Bear Creek that flows west to the location of the Refuge Lift Pump Facility. A conveyance loss factor of ten percent has been determined based on the review of the type of channel flow, time of year and current condition of the channel. Transfer waters are mostly a blend of the tertiary-treated wastewater, storm drainage flows and return flows from on-farm irrigation are infrequent flows, this blended flow will once again be blended with the existing waters in Bear Creek (the main facility to transport the waters), which will have a varying flow volume over the course of the year. Current sampling programs of the

tertiary-treated wastewater are available to provide a continuous monitoring of the water quality prior to discharge to Bear Creek. Transferred waters would be pumped onto refuge land and used in wetland areas for the benefit of wildlife and use on lands within the refuge boundary.

Transferred wastewater would be conveyed, in part, through the East Side Canal. The non-Central Valley Project (CVP) water would be used for irrigation on existing lands in the Refuge that currently receives CVP water (43 U.S.C. §523, Warren Act of 1911). Sections 3406(d)(1) and (d)(2) of the CVPIA authorize and direct the Secretary of the interior to acquire and provide sufficient water supplies necessary to meet the Level 4 Refuge Water Needs as identified in the San Joaquin Basin Action Plan/Kesterson Mitigation Plan Report. This water delivery will provide a portion of the water Level 4 water needs for the Refuge.

Reclamation Responsibilities – Water Quality Monitoring

Monitoring Sites

Monitoring will occur at three surface water sites (Table 1; Appendix A). Surface water sites were selected to be representative of surface water entering East Bear Creek via Gallo conveyance (Peck Drain) and water entering the Refuge (East Bear Creek Pump Station).

Target Analytes

Target analytes will be as follows: total dissolved solids, boron and selenium; and common physical water quality indicators – pH and electrical conductivity. (Table 2).

Field Methods and Materials

Water Quality Sample Collection

Design

The purpose of this sampling program is to characterize specific analytes in the above-described water supply, and to characterize the quality of the water delivered from Santa Rita and to further characterize that water after it has mixed with water in Bear Creek at its delivery point to the Refuge.

Surface water will be sampled from the discharge to East Bear Creek. Surface water will again be sampled from the East Bear Creek Pump Station discharge.

Schedule

Water quality samples for the constituents of primary concern (Table 2; Appendix A) will be collected monthly.

In order to allow time for quality assurance activities and for shipped samples to arrive at the analytical laboratory on a weekday, samples will not be collected on a Thursday, Friday or Saturday.

Exact sampling dates will be coordinated with the Refuge Manager and/or Santa Rita. To determine/confirm appropriate sampling dates for the quarterly monitoring, the Environmental Monitoring (MP-157) project lead will contact the Refuge Manager and/or Santa Rita one week prior to sampling.

Sample Constituents and Frequency					
Location	Flow Rate	EC, Temp, pH	Methyl Mercury	Constituents of Primary Concern (Table 1)	Constituents of Emerging Concern (CEC) (Table 3)
Gallo Farms Point of Discharge	Continuous	Weekly	Once Initially	Monthly	Quarterly –Full list first then quarterly review
East Bear Creek Pump Station	Continuous (Refuge)	Weekly	-	Monthly	Once prior to Project commencement then Quarterly –Full list first then quarterly review

Procedures

All sample collection, sample transportation, and record keeping procedures will be performed in accordance with MP-157 standard operating procedures (Reclamation, 2012). At all times, care will be taken to ensure collection of environmental samples that are representative of the water as it exists in the environment. Nitrile gloves will be worn for all sample collection activities, only pre-cleaned equipment and bottles will be used, and samples will be preserved appropriately to ensure that sample chemical characteristics are not altered after collection.

Surface water grab samples will be collected using an HDPE sample churn splitter and then transferred to appropriate sample bottles (Table 2, Appendix A). At the time of sample collection, physical characteristics of water quality samples will be measured *in situ* using a pre-calibrated YSI 600 XL or YSI EXO multi-parameter Sonde.

Surface water grab samples will be collected where water is well mixed. Ground water samples will be collected at the well head; samples will be collected only after wells have been purged for at least three full minutes – or until pumped water appears clear and free of sediment for at least one full minute – whichever occurs later.

Analytical Methods

Chemical analyses will be performed by private analytical laboratories following standard analytical methods (Table 2, Appendix A). Specific analytical procedures are described in analytical methods documents which are available on-line and by request from Reclamation's Quality Assurance (QA) and Data Management Branch (MP-156) personnel.

Analytical methods were selected to have reporting limits (RLs) below the lowest applicable water quality limit (Table 3, Appendix A). Note that due to matrix effects and other sample-specific analytical complexities, achieved RLs will not always match method RLs.

Quality Assurance Methods

Field practices, laboratory practices, and analytical results are evaluated by Reclamation QA personnel in order to ensure that monitoring data and results are of the highest possible quality. For an in-depth description of the QA procedures associated with this project, see the *Quality Assurance Project Plan for Water Quality Monitoring for the CDFW R-4 Wildlife Areas Water Development Project* (Reclamation, 2016) and the *MP-156 Standard Operating Procedures Manual for Quality Assurance* (Reclamation, 2014).

Data Assessment Methods

Water quality will be assessed by comparing constituent concentrations with water quality standards for the protection of the beneficial uses.

Reporting and Other Actions

For any water quality data results of concern, MP-157 will immediately notify Reclamation's Refuge Water Acquisition Project Manager and the USFWS. Data for each water year will be assessed on a yearly basis and reports submitted to the Refuge Water Acquisition Program, Program Management Branch (MP-410) for review.

WQMP Revision Process

An annual review of the WQMP and associated QA Project Plan will identify and document any procedural changes necessary to the monitoring plan. WQMP and QA Project Plan revisions will reflect potential changes in contracted analytical laboratories, contact information, water quality standards, changes mandated through the adaptive management process, and any other circumstances affecting the monitoring effort.

Contact Information

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Analytical Laboratory

To be determined

Safety

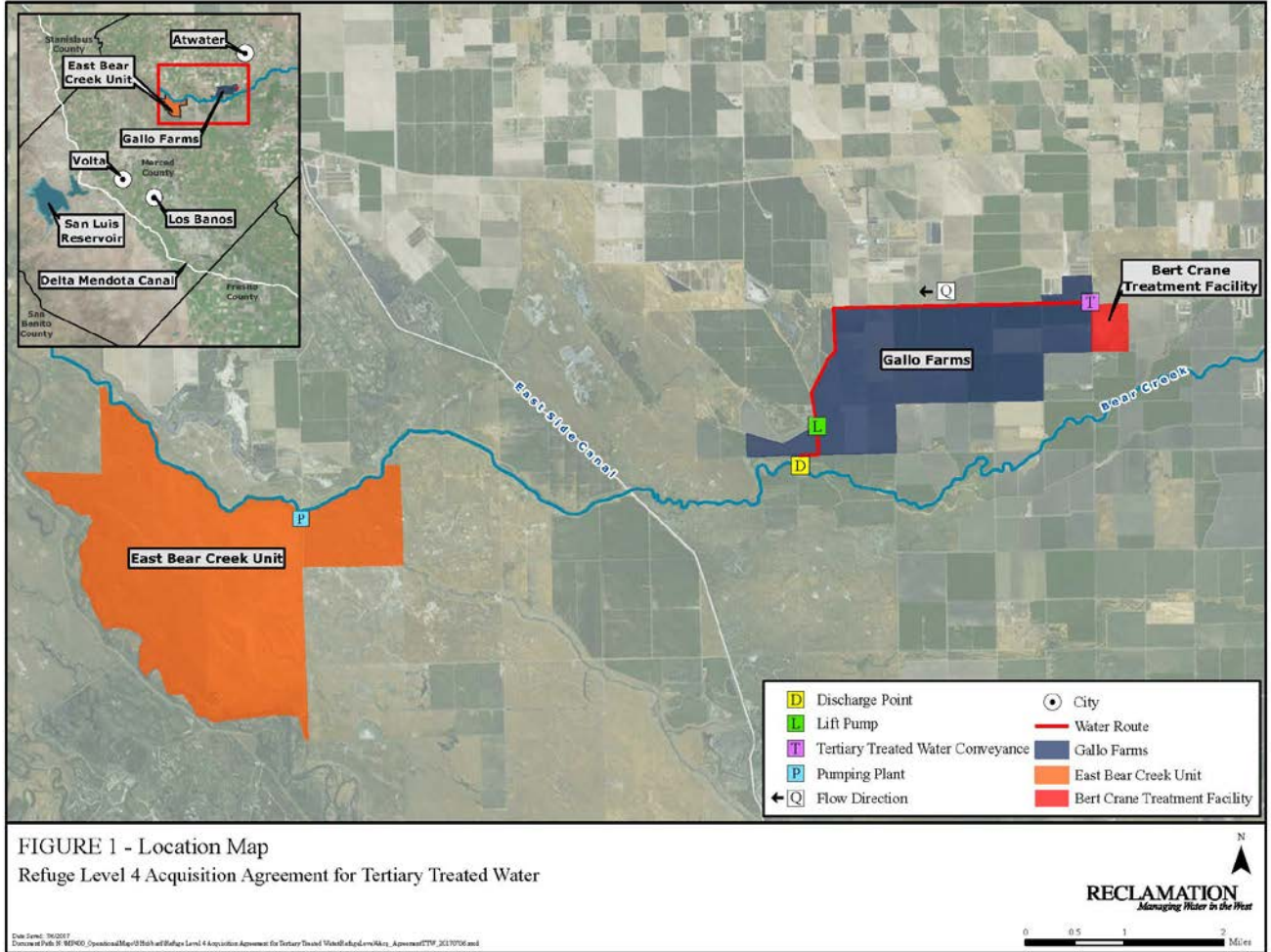
- Denise Arbuckle, Reclamation Safety Office
Office: 916 978-5579

References

- Reclamation, 2012, Standard Operating Procedures for Environmental Monitoring, United States Bureau of Reclamation, Mid Pacific Region, Environmental Monitoring and Hazardous Materials Branch, April, 133p.
- Reclamation, 2014, Standard Operating Procedures for Quality Assurance, United States Bureau of Reclamation, Mid Pacific Region, Environmental Monitoring and Hazmat Branch. Print.
- Reclamation, 2016. Quality Assurance Project Plan for Water Quality Monitoring for the CDFW R-4 Wildlife Areas Water Development Project: United States Bureau of Reclamation, Mid Pacific Region, Environmental Monitoring and Hazmat Branch, Version 2. Print.

Figures

Appendix A - Site Location Map



Tables

Table 1 Site Names and Locations

Site Name	Water Type	Latitude (N)	Longitude (W)
Gallo Farms Point of Discharge to Bear Creek	Surface Water	37° 15' 26.06"	-120° 41' 15.20"
East Bear Creek Pump Station	Surface Water	37° 15' 07.67"	-120° 46' 45.31"

Table 2 Analytes, Analytical Methods, QA Samples and Bottle Requirements

Analyte	Water Quality Threshold	Desired Method Reporting Limit (RL)
Selenium (µg/L)	Not to exceed 2	0.4
Boron (mg/L)	4	0.1
Total Dissolved Solids (mg/L)	-	10
Specific Conductance (µs/cm)	1,000	10
Aluminum (ug/L)	87	29
Arsenic (ug/L)	100	33
Beryllium (ug/L)	100	33
Cadmium (ug/L)	1.1	0.4
Chloride (mg/L)	106	35
Chromium III (ug/L)	84	28
Cobalt (ug/L)	50	17
Copper (ug/L)	4.1	1.4
Fluoride (mg/L)	1	0.33
Iron (ug/L)	1,000	330
Lead (ug/L)	0.92	0.3
Manganese (ug/L)	200	67
Mercury (ug/L)	0.77	0.26
Molybdenum (ug/L)	10	3.33
Nickel (ug/L)	24	8
Nitrate + Nitrite as N (ug/L)	10,000	3,300
pH	6.5-8.4	-
Silver (ug/L)	0.71	0.24
Sodium (ug/L)	-	-
Specific Conductance (ug/L)	1,000	330
Zinc (ug/L)	54	18

Table 3 - CEC List (Eurofins, Eaton Analytical test #DX_ABI_EDC)

2,4-D	Caffeine
4-nonylphenol - semi quantitative	Carbadox
4-tert-octylphenol	Carbamazepine
Acesulfame-K	Carisoprodol
Bendroflumethiazide	Chloridazon
BPA	Chlorotoluron
Butalbital	Cimetidine
Butylparben	Cotinine
Chloramphenicol	Cyanazine
Clofibric Acid	DACT
Diclofenac	DEA
Estradiol	DEET
Estrone	Dehydronifedipine
Ethinyl Estradiol - 17 alpha	DIA
Ethylparaben	Diazepam
Gemfibrozil	Dilantin
Ibuprofen	Diltiazem
Iohexal	Diuron
Iopromide	Erythromycin
Isobutylparaben	Flumequine
Methylparaben	Fluoxetine
Naproxen	Isoproturon
Propylparaben	Ketoprofen
Sucralose	Ketorolac
Triclocarban	Lidocaine
Triclosan	Lincomycin
Warfarin	Linuron
1,7-Dimethylxanthine	Lopressor
Acetaminophen	Meclofenamic Acid
Albuterol	Meprobamate
Amoxicillin (semi-quantitative)	Metazachlor
Androstenedione	Metolachlor
Atenolol	Nifedipine
Atrazine	Norethisterone
Azithromycin	OUST (Sulfameturon,methyl)
Bezafibrate	Oxolinic acid
Bromacil	Pentoxifylline

Phenazone
 Primidone
 Progesterone
 Propazine
 Quinoline
 Simazine
 Sulfachloropyridazine
 Sulfadiazine
 Sulfadimethoxine
 Sulfamerazine
 Sulfamethazine

Sulfamethizole
 Sulfamethoxazole
 Sulfathiazole
 TCEP
 TCPP
 TDCPP
 Testosterone
 Theobromine
 Theophylline
 Thiabendazole
 Trimethoprim

Table 4 Analytical Methods and Desired Reporting Limits

Analyte	Lowest Applicable WQ Standard		Desired RL (µg/L)	Method RL (µg/L)
	Objective	Limit (µg/L)		
TDS	FWAL - CC	87	≤ 20	≤ 20
Boron (total)	IR	100	≤ 20	≤ 0.5
Selenium (total)	BP	2	0.4	0.4
Temperature	BP	< 5 ° F above receiving temp	Not Applicable	
Conductivity	BP	240 µS/cm		
pH	BP	6.5-8.5 units		

FWAL-CC: protection of chronically exposed fresh water aquatic life
 BP: Basin Plan protections
 IR: protection of agricultural uses (irrigation suitability).

Appendix B – City of Atwater WWTP Water Quality Results 2016

City of Atwater Effluent Waste Water Treatment Plant Water Quality Data 2016

Monitoring Point	Parameter	Results/Qualifier	Units	Sample Date
EFF-001	Asbestos	ND	Fibers/L	11/1/2016
EFF-001	Chromium (VI) Total Recoverable	ND	ug/L	11/21/2016
EFF-001	Boron, Total Recoverable	0.18	mg/L	11/1/2016
EFF-001	Antimony, Total Recoverable	0.52	ug/L	11/1/2016
EFF-001	Arsenic, Total Recoverable	5.3	ug/L	11/1/2016
EFF-001	Beryllium, Total Recoverable	ND	ug/L	11/1/2016
EFF-001	Cadmium, Total Recoverable	ND	ug/L	11/1/2016
EFF-001	Chromium (III) Total Recoverable	0.62	ug/L	11/21/2016
EFF-001	Chromium, Total Recoverable	0.62	ug/L	11/1/2016
EFF-001	Chromium, Total Recoverable	0.62	ug/L	11/21/2016
EFF-001	Copper, Total Recoverable	2	ug/L	11/1/2016
EFF-001	Lead, Total Recoverable	ND	ug/L	11/1/2016
EFF-001	Nickel, Total Recoverable	1.1	ug/L	11/1/2016
EFF-001	Selenium, Total Recoverable	ND	ug/L	11/1/2016
EFF-001	Silver, Total Recoverable	ND	ug/L	11/1/2016
EFF-001	Thallium, Total Recoverable	ND	ug/L	11/1/2016
EFF-001	Zinc, Total Recoverable	34	ug/L	11/1/2016
EFF-001	Mercury, Total Recoverable	0.81	ug/L	11/1/2016
EFF-001	4,4-DDD	ND	ug/L	11/1/2016
EFF-001	4,4-DDE	ND	ug/L	11/1/2016
EFF-001	4,4-DDT	ND	ug/L	11/1/2016
EFF-001	alpha-BHC	ND	ug/L	11/1/2016
EFF-001	beta-BHC	ND	ug/L	11/1/2016
EFF-001	Chlordane	ND	ug/L	11/1/2016
EFF-001	delta-BHC	ND	ug/L	11/1/2016
EFF-001	Dieldrin	ND	ug/L	11/1/2016
EFF-001	Endosulfan I	ND	ug/L	11/1/2016
EFF-001	Endosulfan II	ND	ug/L	11/1/2016
EFF-001	Endosulfan Sulfate	ND	ug/L	11/1/2016
EFF-001	Endrin	ND	ug/L	11/1/2016

EFF-001	Endrin Aldehyde	ND	ug/L	11/1/2016
EFF-001	gamma-BHC	ND	ug/L	11/1/2016
EFF-001	Heptachlor	ND	ug/L	11/1/2016
EFF-001	Heptachlor Epoxide	ND	ug/L	11/1/2016
EFF-001	PCB-1016	ND	ug/L	11/1/2016
EFF-001	PCB-1221	ND	ug/L	11/1/2016
EFF-001	PCB-1232	ND	ug/L	11/1/2016
EFF-001	PCB-1242	ND	ug/L	11/1/2016
EFF-001	PCB-1248	ND	ug/L	11/1/2016
EFF-001	PCB-1254	ND	ug/L	11/1/2016
EFF-001	PCB-1260	ND	ug/L	11/1/2016
EFF-001	1,2-Dichloropropane	ND	ug/L	11/1/2016
EFF-001	1,2-Diphenylhydrazine	ND	ug/L	11/1/2016
EFF-001	1,3-Dichlorobenzene	ND	ug/L	11/1/2016
EFF-001	1,4-Dichlorobenzene	ND	ug/L	11/1/2016
EFF-001	2,4,6-Trichlorophenol	ND	ug/L	11/1/2016
EFF-001	2,4-Dichlorophenol	ND	ug/L	11/1/2016
EFF-001	2,4-Dimethylphenol	ND	ug/L	11/1/2016
EFF-001	2,4-Dinitrophenol	ND	ug/L	11/1/2016
EFF-001	2,4-Dinitrotoluene	ND	ug/L	11/1/2016
EFF-001	2,6-Dinitrotoluene	ND	ug/L	11/1/2016
EFF-001	2-Chloronaphthalene	0.25	ug/L	11/1/2016
EFF-001	2-Chlorophenol	ND	ug/L	11/1/2016
EFF-001	2-Nitrophenol	ND	ug/L	11/1/2016
EFF-001	3,3-Dichlorobenzidine	ND	ug/L	11/1/2016
EFF-001	4,6-Dinitro-2-methylphenol	ND	ug/L	11/1/2016
EFF-001	4-Bromophenyl Phenyl Ether	ND	ug/L	11/1/2016
EFF-001	4-Chloro-3-methylphenol	0.53	ug/L	11/1/2016
EFF-001	4-Chlorophenyl Phenyl Ether	ND	ug/L	11/1/2016
EFF-001	4-Nitrophenol	ND	ug/L	11/1/2016
EFF-001	Acenaphthene	ND	ug/L	11/1/2016
EFF-001	Acenaphthylene	ND	ug/L	11/1/2016
EFF-001	Acrolein	ND	ug/L	11/21/2016
EFF-001	Acrylonitrile	ND	ug/L	11/21/2016
EFF-001	Aldrin	ND	ug/L	11/1/2016
EFF-001	Anthracene	ND	ug/L	11/1/2016
EFF-001	Benzidine	ND	ug/L	11/1/2016
EFF-001	Benzo(a)anthracene	ND	ug/L	11/1/2016
EFF-001	Benzo(a)pyrene	ND	ug/L	11/1/2016
EFF-001	Benzo(b)fluoranthene	ND	ug/L	11/1/2016
EFF-001	Benzo(ghi)perylene	ND	ug/L	11/1/2016
EFF-001	Benzo(k)fluoranthene	ND	ug/L	11/1/2016
EFF-001	Bis (2-Chloroethoxy) Methane	ND	ug/L	11/1/2016
EFF-001	Bis (2-Chloroethyl) Ether	ND	ug/L	11/1/2016
EFF-001	Bis (2-Chloroisopropyl) Ether	ND	ug/L	11/1/2016

EFF-001	Bis (2-Ethylhexyl) Phthalate	1.6	ug/L	11/1/2016
EFF-001	Butylbenzyl Phthalate	ND	ug/L	11/1/2016
EFF-001	Carbon Tetrachloride	ND	ug/L	11/1/2016
EFF-001	Chrysene	ND	ug/L	11/1/2016
EFF-001	cis-1,3-Dichloropropene	ND	ug/L	11/1/2016
EFF-001	Dibenzo(a,h)anthracene	ND	ug/L	11/1/2016
EFF-001	Diethyl Phthalate	ND	ug/L	11/1/2016
EFF-001	Dimethyl Phthalate	ND	ug/L	11/1/2016
EFF-001	Di-n-butyl Phthalate	ND	ug/L	11/1/2016
EFF-001	Di-n-octyl Phthalate	ND	ug/L	11/1/2016
EFF-001	Fluoranthene	ND	ug/L	11/1/2016
EFF-001	Fluorene	ND	ug/L	11/1/2016
EFF-001	Hexachlorobenzene	ND	ug/L	11/1/2016
EFF-001	Hexachlorobutadiene	ND	ug/L	11/1/2016
EFF-001	Hexachlorocyclopentadiene	ND	ug/L	11/1/2016
EFF-001	Hexachloroethane	ND	ug/L	11/1/2016
EFF-001	Indeno (1,2,3-cd) Pyrene	ND	ug/L	11/1/2016
EFF-001	Isophorone	ND	ug/L	11/1/2016
EFF-001	Naphthalene	ND	ug/L	11/1/2016
EFF-001	Nitrobenzene	ND	ug/L	11/1/2016
EFF-001	N-Nitrosodimethylamine	ND	ug/L	11/1/2016
EFF-001	N-Nitrosodi-n-Propylamine	ND	ug/L	11/1/2016
EFF-001	N-Nitrosodiphenylamine	ND	ug/L	11/1/2016
EFF-001	Pentachlorophenol	ND	ug/L	11/1/2016
EFF-001	Phenanthrene	ND	ug/L	11/1/2016
EFF-001	Phenol, Single Compound	ND	ug/L	11/1/2016
EFF-001	Pyrene	ND	ug/L	11/1/2016
EFF-001	Tetrachloroethene	ND	ug/L	11/1/2016
EFF-001	Toxaphene	ND	ug/L	11/1/2016
EFF-001	trans-1,2-Dichloroethene	ND	ug/L	11/1/2016
EFF-001	trans-1,3-Dichloropropene	ND	ug/L	11/1/2016
EFF-001	Cyanide, Total (as CN)	ND	mg/L	11/1/2016
EFF-001	1,1,1-Trichloroethane	ND	ug/L	11/1/2016
EFF-001	1,1,2,2-Tetrachloroethane	ND	ug/L	11/1/2016
EFF-001	1,1,2-Trichloroethane	ND	ug/L	11/1/2016
EFF-001	1,1-Dichloroethane	ND	ug/L	11/1/2016
EFF-001	1,1-Dichloroethylene	ND	ug/L	11/1/2016
EFF-001	1,2,4-Trichlorobenzene	ND	ug/L	11/1/2016
EFF-001	1,2-Dichlorobenzene	ND	ug/L	11/1/2016
EFF-001	1,2-Dichloroethane	ND	ug/L	11/1/2016
EFF-001	2-Chloroethylvinyl Ether	ND	ug/L	11/21/2016
EFF-001	Benzene	ND	ug/L	11/1/2016
EFF-001	Bromoform	ND	ug/L	11/1/2016
EFF-001	Bromomethane	ND	ug/L	11/1/2016
EFF-001	Chlorobenzene	ND	ug/L	11/1/2016

EFF-001	Chloroethane	ND	ug/L	11/1/2016
EFF-001	Chloroform	ND	ug/L	11/1/2016
EFF-001	Chloromethane	ND	ug/L	11/1/2016
EFF-001	Dibromochloromethane	ND	ug/L	11/1/2016
EFF-001	Dichlorobromomethane	ND	ug/L	11/1/2016
EFF-001	Ethylbenzene	ND	ug/L	11/1/2016
EFF-001	Methylene Chloride	ND	ug/L	11/1/2016
EFF-001	Toluene	ND	ug/L	11/1/2016
EFF-001	Trichloroethene	ND	ug/L	11/1/2016
EFF-001	Vinyl Chloride	ND	ug/L	11/1/2016

Appendix C – Federally Listed, Proposed & Candidate Species



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To:
Consultation Code: 08ESMF00-2016-SLI-1704
Event Code: 08ESMF00-2017-E-08057

August 15, 2017

Project Name: Refuge Level 2 Exchange Agreement for Tertiary Treated Water Project - 2017

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

NOAA National Marine Fisheries Service Species List

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to

utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

US Fish and Wildlife Service Endangered Species List

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: US Fish and Wildlife Service Migratory Birds and Towers <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2016-SLI-1704

Event Code: 08ESMF00-2017-E-08057

Project Name: Refuge Level 2 Exchange Agreement for Tertiary Treated Water Project - 2017

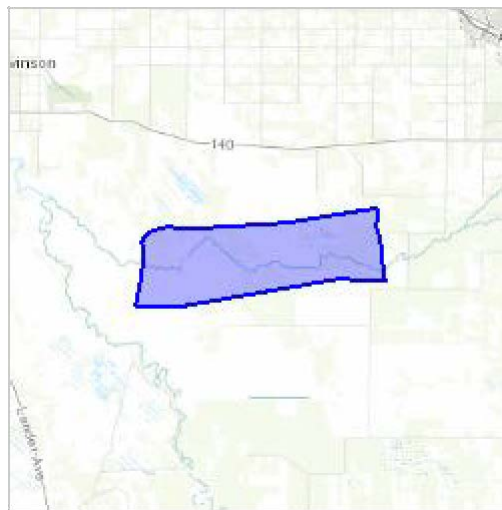
Project Type: WATER SUPPLY / DELIVERY

Project Description: The Proposed Action involves Reclamation entering into an agreement with Santa Rita, LLC to exchange water for tertiary treated water acquired by Santa Rita from the Gallo Farmland Company. Santa Rita would provide the East Bear Creek Unit of the San Luis NWR Refuge complex up to 6,000 acre-feet (AF) per year (AFY) of treated water from Gallo farmlands to the Refuge. Treated water would leave the Gallo Point of Discharge and join instream flows, entering at Bear Creek until reaching the Refuge pump station approximately 5 miles west.

Project Location:

Approximate location of the project can be viewed in Google Maps:

<https://www.google.com/maps/place/37.25615372891342N120.72344774297972W>



Counties: Merced, CA

Endangered Species Act Species

There is a total of 14 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

Mammals

NAME	STATUS
<p>Fresno Kangaroo Rat <i>Dipodomys nitratooides exilis</i></p> <p>There is a final critical habitat designated for this species. Your location is outside the designated critical habitat.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/5150</p>	Endangered
<p>San Joaquin Kit Fox <i>Vulpes macrotis mutica</i></p> <p>No critical habitat has been designated for this species.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/2873</p>	Endangered

Reptiles

NAME	STATUS
<p>Blunt-nosed Leopard Lizard <i>Gambelia silus</i></p> <p>No critical habitat has been designated for this species.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/625</p>	Endangered
<p>Giant Garter Snake <i>Thamnophis gigas</i></p> <p>No critical habitat has been designated for this species.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/4482</p>	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is a final critical habitat designated for this species. Your location is outside the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (Central CA DPS) There is a final critical habitat designated for this species. Your location is outside the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is a final critical habitat designated for this species. Your location is outside the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened
Steelhead <i>Oncorhynchus</i> (=Salmo) <i>mykiss</i> Population: Northern California DPS There is a final critical habitat designated for this species. Your location is outside the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1007	Threatened

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i> There is a final critical habitat designated for this species. Your location is outside the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME

STATUS

Conservancy Fairy Shrimp *Branchinecta conservatio*

Endangered

There is a **final critical habitat** designated for this species. Your location overlaps the designated critical habitat.

Species profile: <https://ecos.fws.gov/ecp/species/8246>

Vernal Pool Fairy Shrimp *Branchinecta lynchi*

Threatened

There is a **final critical habitat** designated for this species. Your location overlaps the designated critical habitat.

Species profile: <https://ecos.fws.gov/ecp/species/498>

Vernal Pool Tadpole Shrimp *Lepidurus packardii*

Endangered

There is a **final critical habitat** designated for this species. Your location overlaps the designated critical habitat.

Species profile: <https://ecos.fws.gov/ecp/species/2246>

Flowering Plants

NAME

STATUS

Colusa Grass *Neostapfia colusana*

Threatened

There is a **final critical habitat** designated for this species. Your location overlaps the designated critical habitat.

Species profile: <https://ecos.fws.gov/ecp/species/5690>

Hoover's Spurge *Chamaesyce hooveri*

Threatened

There is a **final critical habitat** designated for this species. Your location overlaps the designated critical habitat.

Species profile: <https://ecos.fws.gov/ecp/species/3019>

Critical habitats

There are 5 critical habitats wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Colusa Grass <i>Neostapfia colusana</i> https://ecos.fws.gov/ecp/species/5690#crithab	
Conservancy Fairy Shrimp <i>Branchinecta conservatio</i> https://ecos.fws.gov/ecp/species/8246#crithab	
Hoover's Spurge <i>Chamaesyce hooveri</i> https://ecos.fws.gov/ecp/species/3019#crithab	
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> https://ecos.fws.gov/ecp/species/498#crithab	
Vernal Pool Tadpole Shrimp <i>Lepidurus packardi</i> https://ecos.fws.gov/ecp/species/2246#crithab	
