RECLAMATION

Managing Water in the West

Final Environmental Assessment

2016 Temporary Change in Water Quality Requirements for Groundwater Introduced into the Upper Portion of the Delta-Mendota Canal

EA-16-023

U.S. Department of the Interior
Bureau of Reclamation

August 2016

Mission Statements

The mission of the Department of the Interior is to protect and manage the Nation's natural resources and cultural heritage; provide scientific and other information about those resources; and honor 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.

Contents

Page

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Section 1 Introduction

The Bureau of Reclamation (Reclamation) provided the public with an opportunity to comment on the Draft Finding of No Significant Impact (FONSI) and Draft Environmental Assessment (EA) between July 28, 2016 and August 5, 2016. No comments were received. Changes between this Final EA and the Draft EA, which are not minor editorial changes, are indicated by vertical lines in the left margin of this document.

1.1 Background

The State of California has been and continues to experience unprecedented water management challenges due to severe drought in recent years. In 2014 and 2015, due to ongoing drought and regulatory requirements that limited available Central Valley Project (CVP) water supplies, the San Luis & Delta-Mendota Water Authority (Authority), on behalf of certain CVP contractors served by the Delta-Mendota Canal (DMC), requested approval from the Bureau of Reclamation (Reclamation) to temporarily change water quality requirements for introduction of groundwater into the DMC under the DMC Groundwater Pump-in Program. The DMC Groundwater Pump-in Program allows those CVP Contractors located north of O'Neill Forebay to cumulatively pump up to 50,000 acre-feet (AF) of groundwater into the DMC for storage and conveyance. Reclamation analyzed the DMC Groundwater Pump-in Program in Environmental Assessment (EA)-12-061 (Reclamation 2013). Based on specific environmental commitments required for the DMC Groundwater Pump-in Program, including water quality requirements, Reclamation determined that the cumulative introduction, storage, and conveyance of up to 50,000 AF per year of groundwater would not significantly affect the quality of the human environment and a Finding of No Significant Impact (FONSI) was signed on January 10, 2013.

All wells that participate in the DMC Groundwater Pump-in Program are required to meet Reclamation's then-current water quality requirements (Reclamation 2016). Under Reclamation's current requirements, the maximum acceptable concentration for selenium in the DMC is 2 parts per billion (ppb), based on the monthly average limit specified in the Water Quality Plan for the Sacramento River and San Joaquin River for Grasslands wetlands water supply channels (Central Valley Regional Water Quality Control Board 2011). The current limit for selenium in the lower San Joaquin River downstream of the Merced River is 5 ppb (four-day average).

In 2014, Reclamation approved the temporary change in its water quality requirements to allow 14 wells to pump groundwater into the upper portion of the DMC that had between 2 and 5 ppb of selenium through August 30, 2014. Reclamation analyzed the proposal in EA-14-031 (Reclamation 2014) and predicted that the action would not significantly affect the quality of the human environment and a FONSI was signed on August 4, 2014. The conclusion was supported by analysis of daily composite measurements of selenium in the canal before, during, and after the action occurred. The addition of 4,469 acre-feet water from the 14 wells in 2014 did not

cause a measurable increase in selenium in the canal as shown in Figure 1. In addition, selenium concentrations at Check 13 (O'Neill Forebay) did not exceed 0.4 ppb (see Figure 2). The results of all samples collected during the 2014 action were well below the water quality standard of 2 ppb.

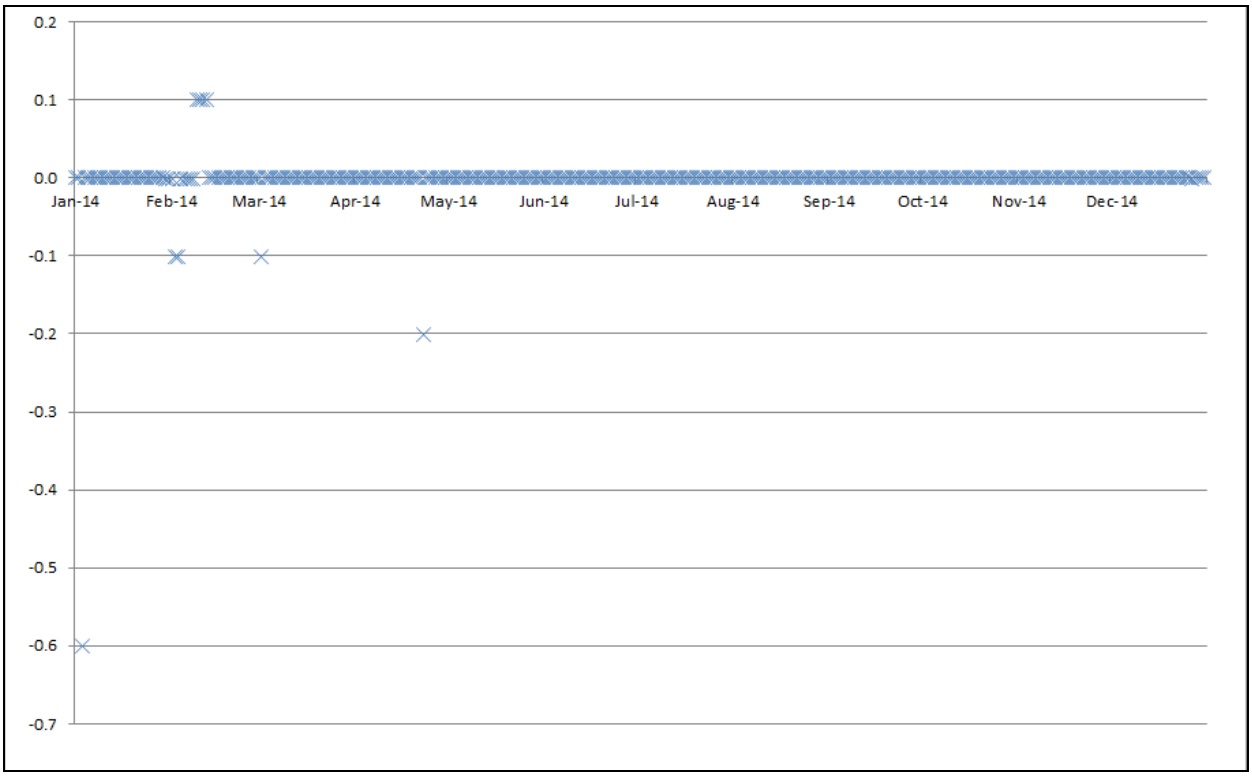

Figure 1 2014 Change in Selenium Concentration (DMC Headworks and Check 13)

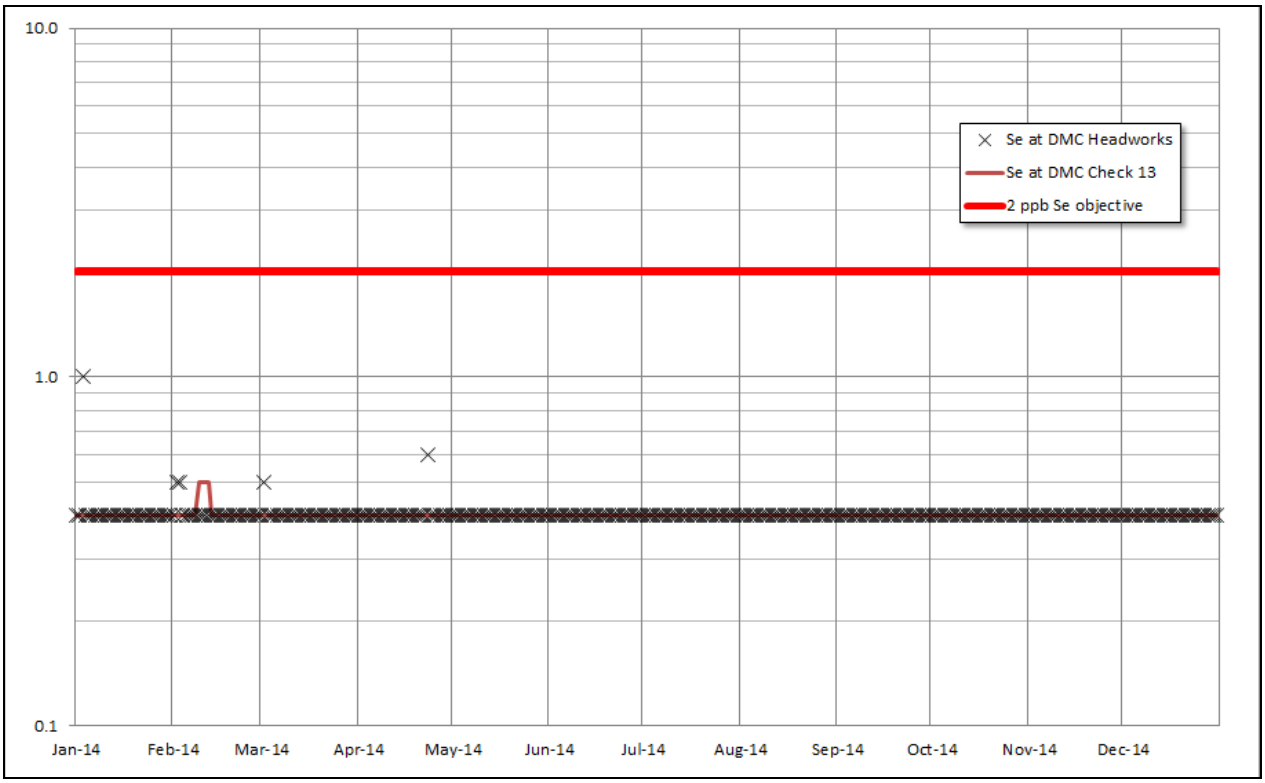

Figure 2 2014 Concentration of Selenium at DMC Headworks and Check 13 (in ppb)

In 2015, Reclamation approved a similar temporary water quality relaxation for 13 wells in the upper portion of the DMC. Reclamation analyzed the proposal in EA-15-040 (Reclamation 2015) and a FONSI was signed on July 27, 2015. The conclusion that the 2015 proposal would not significantly affect the quality of the human environmental was supported by the previous results of the 2014 action as well as the results during and after the 2015 action. Similar to the 2014 action, the addition of 3,555 acre-feet of water from the 13 wells in 2015 did not cause a measurable increase in selenium in the canal (Figure 3) and the concentration of selenium at Check 13 did not exceed 0.4 ppb (Figure 4). The results of all samples collected during the 2015 action were also well below the water quality standard of 2 ppb.

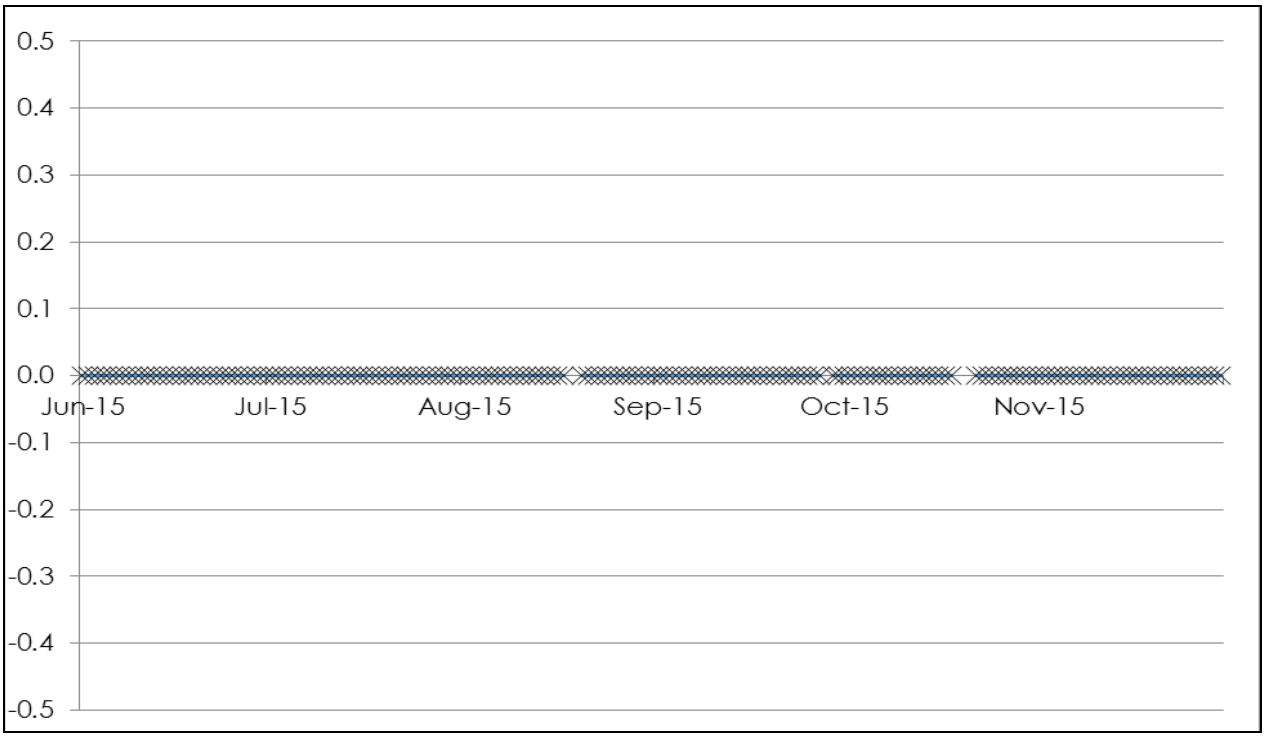

Figure 3 2015 Change in Selenium Concentration (DMC Headworks and Check 13)

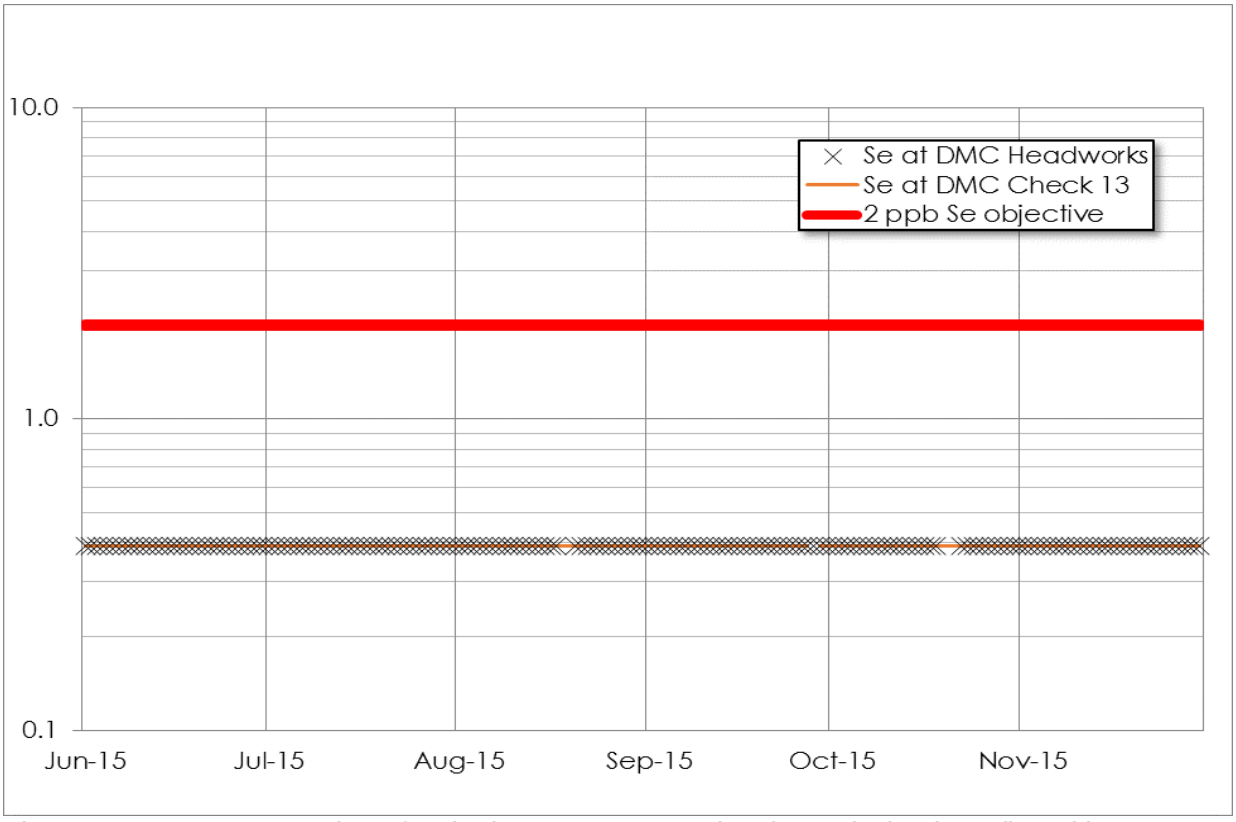

Figure 4 2015 Concentration of Selenium at DMC Headworks and Check 13 (in ppb)

Due to ongoing drought and regulatory requirements that limit available CVP water supplies, the Authority has again requested a temporary change in water quality requirements for introduction of groundwater with up to 5 ppb selenium into the DMC.

1.2 Need for the Proposed Action

Based on hydrologic conditions and regulatory requirements, Reclamation declared a 5 percent allocation for south of Delta CVP agricultural contractors for the 2016 Contract Year. As a result, CVP contractors have a need to find alternative sources of water to fulfill demands.

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Section 2 Alternatives Including the Proposed Action

This EA considers two possible actions: the No Action Alternative and the Proposed Action. The No Action Alternative reflects future conditions without the Proposed Action and serves as a basis of comparison for determining potential effects to the human environment.

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not temporarily change the maximum acceptable concentration of selenium measured at the well head from 2 ppb to 5 ppb through September 30, 2016. Only wells that meet the water quality requirements specifically described in Reclamation's water quality monitoring plan (Reclamation 2016) would be allowed to pump groundwater into the DMC as previously approved under the existing DMC Groundwater Pump-in Program.

2.2 Proposed Action

For groundwater introduced into the upper portion of the DMC, Reclamation proposes to temporarily change the maximum acceptable concentration of selenium measured at the well head from 2 ppb to 5 ppb. The change would only be in effect through September 30, 2016. The maximum allowable selenium concentration for wells in the lower portion of the DMC would be unchanged. The temporary change would allow an additional 11 wells (see Table 1) to cumulatively pump up to 21 cubic feet per second (cfs) of groundwater into the upper portion of the DMC (Figure 3) under the existing DMC Groundwater Pump-in Program. This would provide approximately 42 AF per day (21 cfs x 1.98 AF conversion factor) for a total of about 2,462 acre-feet. This water would be included in the cumulative total (50,000 AF per year) allowed under the DMC Groundwater Pump-in Program.

Table 1 Wells with Selenium Concentrations between 2 ppb and 5 ppb

District	Well ID	Discharge Point at the DMC	Flow (cfs)	Selenium (ppb)	Recent Water Quality Test
Del Puerto WD	Brown Field 7	21.12L	2.0	3.0	3/4/2016
Del Puerto WD	Brown Field 3	21.12L	2.0	3.9	3/3/2016
Del Puerto WD	Brown	21.86L	2.0	3.0	3/3/2016
Del Puerto WD	Athwal	29.95R	1.4	3.0	1/27/2016
Del Puerto WD	Bays	30.43L	3.2	5.5	1/27/2016
Del Puerto WD	Athwal	31.60L	2.0	3.6	1/27/2016
Del Puerto WD	Athwal	32.35L	1.2	4.9	1/27/2016
Del Puerto WD	Lucich/Santos	36.45R	2.5	2.5	2/12/2016
Del Puerto WD	Lucich/Santos	36.68L	2.0	3.1	2/11/2016
San Luis WD	Craven Well 1	48.97L	2.0	2.4	4/26/2016
San Luis WD	Craven Well 2	48.97L	2.9	2.5	4/26/2016

The Proposed Action is subject to the following conditions:

- Selenium concentrations in the DMC measured at Check 13 may not exceed 2 ppb.
- Reclamation will monitor salinity in the canal using the real-time data to identify daily changes caused by the conveyance of groundwater. While there is no direct correlation between salinity and selenium concentration, Reclamation will direct the Authority to shut off the most saline wells if those wells are causing the salinity of water in the DMC to increase above 2,200 μS/cm[1].
- Reclamation will continue to measure selenium in the canal. If the addition of groundwater to the canal causes selenium concentrations in the DMC to exceed 2 ppb, Reclamation will direct the Authority to immediately shut off wells with the highest concentrations of selenium until water the proposed criteria are met.

In addition to the conditions described above and the criteria included in Reclamation's then-current water quality requirements (Reclamation 2016), the Authority and participating member agencies shall continue to implement the following environmental commitments as required for the DMC Groundwater Pump-in Program (Table 2).

Table 2 DMC Groundwater Pump-in Program Environmental Commitments

Each district would be required to confirm that the proposed pumping of groundwater would be compatible with local ordinances. Each district would be limited to pumping a quantity below the "safe yield" as established in applicable ordinances or their groundwater management plan, in order to prevent groundwater overdraft and avoid adverse impacts.
No groundwater pumping would occur in Management Areas 2 and 3 since these areas are subject to inelastic subsidence.
All districts participating in the DMC Groundwater Pump-in Program must annually provide the depth to groundwater in every well prior to start of pumping.
Though most of the wells are privately owned, the Districts must provide access to each well for Reclamation and Authority staff.
All compliance monitoring data collected by the Authority would be entered into worksheets and presented each week to Reclamation via e-mail. Reclamation would review the data to identify potential changes in the local aquifer that could lead to overdraft or subsidence,
Groundwater measurements have been collected by the Authority since May 1995. Annually, the current depth to groundwater in each well would be compared to the measured depths. If the current depth exceeds the maximum measured depth, Reclamation would recommend that the District stop pumping from that well until the depth of water recovers to an agreed depth, such as the median observed depth.
The water shall be used for beneficial purposes and in accordance with Federal Reclamation law and guidelines, as applicable.
Use of the water shall comply with all federal, state, local, and tribal law, and requirements imposed for protection of the environment and Indian Trust Assets.
The water shall be used within the permitted place of use.
No land conversions may occur and no construction or other ground disturbing activity may occur as part of the Proposed Action.
No native or untilled land (fallow for three years or more) may be cultivated with the water involved with these actions. Most of the water would be used to sustain existing permanent crops (orchards, vineyards).

[1] Equivalent to 1,500 mg/L total dissolved solids

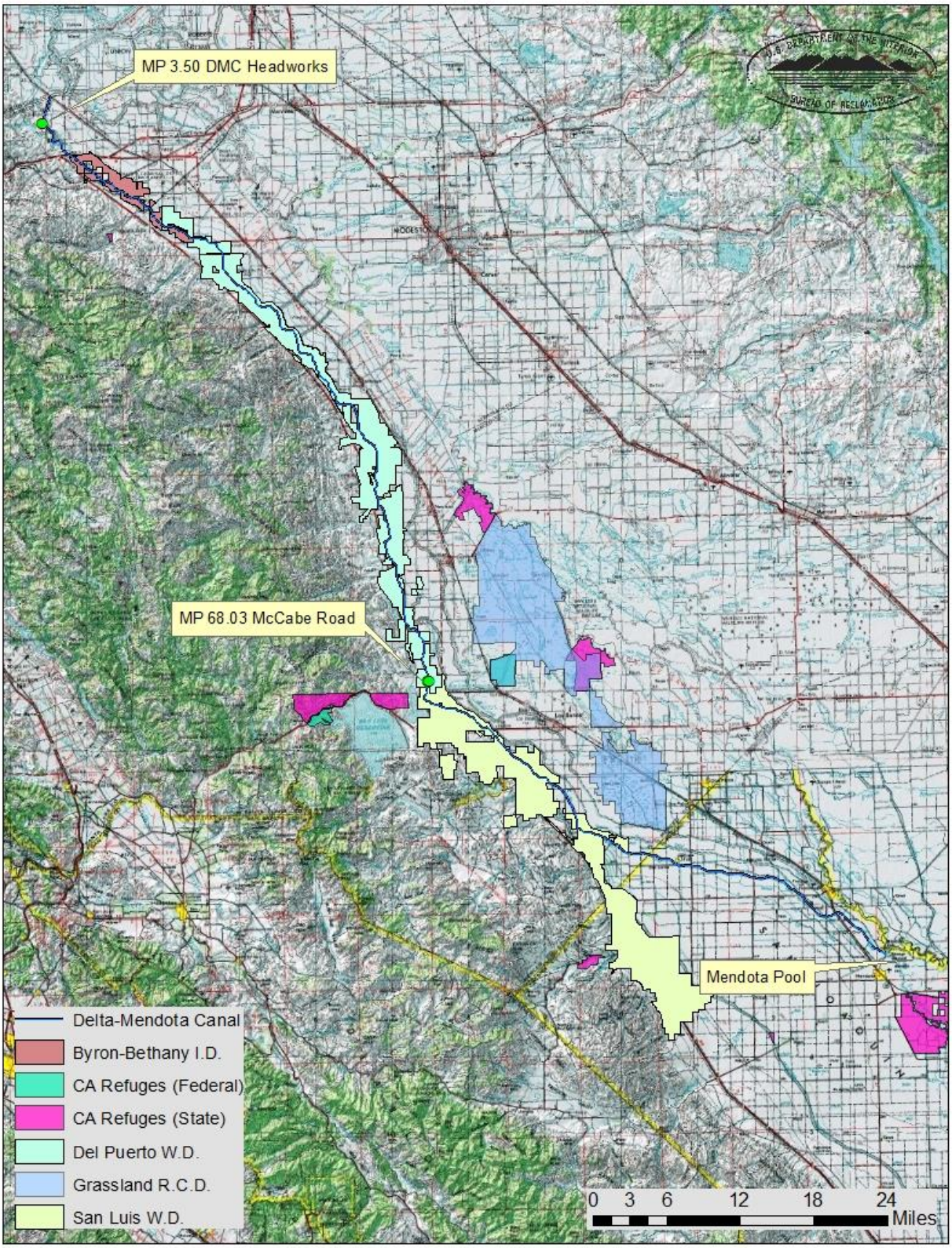

Figure 5 Proposed Action area

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Section 3 Affected Environment and Environmental Consequences

This section identifies the potentially affected environment and the environmental consequences involved with the Proposed Action and the No Action Alternative, in addition to environmental trends and conditions that currently exist.

3.1 Resources Eliminated from Further Analysis

Reclamation analyzed the affected environment and determined that the Proposed Action did not have the potential to cause direct, indirect, or cumulative adverse effects to the resources listed in Table 3.

Table 3 Resources Eliminated from Further Analysis

Resource	Reason Eliminated
Air Quality	The pumping of wells for the DMC Groundwater Pump-in Program was previously analyzed in EA-12-061 which found emissions of all of the proposed pumps, including those under the Proposed Action considered here, to be well below the *de minimis* thresholds for the San Joaquin Valley Air Pollution Control District. As such, there would be no additional impacts beyond those previously covered and a conformity analysis pursuant to the Clean Air Act is not required.
Cultural Resources	The Proposed Action would facilitate the flow of water through existing facilities to existing users. As no construction or modification of facilities would be needed in order to complete the Proposed Action, Reclamation has determined that these activities have no potential to cause effects to historic properties pursuant to 36 CFR Part 800.3(a)(1). See Appendix A for Reclamation's determination.
Environmental Justice	The Proposed Action would not cause dislocation, changes in employment, or increase flood, drought, or disease nor would it disproportionately impact economically disadvantaged or minority populations.
Geology	All 10 wells are included in the subsidence monitoring program required for the DMC Groundwater Pump-in Program. As these have previously been covered, no additional effects would occur as a result of the Proposed Action.
Global Climate and Energy Use	The pumping of wells for the DMC Groundwater Pump-in Program was previously analyzed in EA-12-061 which found emissions of all of the proposed pumps, including those under the Proposed Action considered here, to be well below the *de minimis* thresholds for the Environmental Protection Agency. As such, there would be no additional impacts beyond those previously covered.
Indian Sacred Sites	The Proposed Action would not limit access to or ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites.
Indian Trust Assets	The Proposed Action would not impact Indian Trust Assets as there are none in the Proposed Action area. The nearest Indian Trust Asset is approximately 35 miles from the Proposed Action area.
Land Use	The addition of up to 40 AF per day through September 30, 2016 would be used to irrigate existing permanent crops. The water would not be used to place untilled or new lands into production, or to convert undeveloped land to other uses.
Socioeconomics	The Proposed Action would have beneficial impacts on socioeconomic resources for south of Delta CVP contractors as the additional groundwater would be used to help sustain existing crops and maintain farming within the districts.

3.2 Biological Resources

3.2.1 Affected Environment

The Proposed Action area includes the upper portion of the DMC, the San Luis Reservoir, the Del Puerto Water District, and the San Luis Water District. The Proposed Action area consists primarily of agricultural lands, including pasture, row crops, vineyards, and orchards; some limited urban development and remnant patches of natural habitat are also present.

Reclamation requested an official species list, for the Proposed Action area, from the U.S. Fish and Wildlife Service (Service) via the Service's website, http://ecos.fws.gov/ipac/, on July 22, 2016. The California Department of Fish and Wildlife's California Natural Diversity Database (CNDDB) was also queried for records of protected species near the Proposed Action area (CNDDB 2016). The information collected above, in addition to information within Reclamation's files, was combined to determine the likelihood of protected species occurrence within the Proposed Action area.

Table 4 Federally Listed Species and Critical Habitat that may occur within the Action area

Listed Species	Status[1]	ESA Effects[2]	Basis for Effects Determination
AMPHIBIANS			
California red-legged frog (*Rana draytonii*)	T, X	NE	There are no records of this species occurring in or near the Proposed Action area. The Proposed Action would not result in any land use changes or conversion of habitat which may be suitable for this species.
California tiger salamander, central population (*Ambystoma californiense*)	T, X	NE	There are records of this species occurring near the Proposed Action area (CNDDB 2016). The Proposed Action would not involve any construction, land use changes, or conversion of habitat which may be suitable for this species.
BIRDS			
California condor (*Gymnogyps californianus)*	E, X	NE	There are no records of this species occurring in or near the Proposed Action area, and this species has likely been extirpated from areas to the north of the San Luis Reservoir. The Proposed Action would not result in any land use changes or conversion of habitat which may be suitable for this species.
Least Bell's vireo (*Vireo bellii pusillus*)	E, X	NE	There are no records of this species within the Proposed Action area and suitable riparian habitat for this species appears to be lacking from the Proposed Action area. The Proposed Action would not result in any land use changes or conversion of habitat which may be suitable for this species.
Yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	T, PX	NE	There are no records of this species within the Proposed Action area, and suitable nesting and foraging habitat for this species appears to be lacking from the Proposed Action area (they need extensive cottonwood-willow forests). The Proposed Action would not result in any land use changes or conversion of habitat which may be suitable for this species.

Listed Species	Status[1]	ESA Effects[2]	Basis for Effects Determination
CRUSTACEANS			
Conservancy fairy shrimp (*Branchinecta conservation*)	E, X	NE	There are no records of this species occurring within the Proposed Action area, but this species may be present if suitable vernal pool habitat exists within the Action Area. The Proposed Action would not involve any ground disturbing activities, changes in land use, or conversion of suitable vernal pool habitat.
Longhorn fairy shrimp (*Branchinecta longiantenna*)	E, X	NE	There are no records of this species occurring within the Proposed Action area, but this species may be present if suitable vernal pool habitat exists within the Action Area. The Proposed Action would not involve any ground disturbing activities, changes in land use, or conversion of suitable vernal pool habitat.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	T,X	NE	There are no records of this species occurring in or near the Proposed Action area. The Proposed Action would not involve any ground disturbing activities, changes in land use, or conversion of suitable vernal pool habitat.
Vernal Pool tadpole shrimp (*Lepidurus packardi*)	T,X	NE	There are no records of this species occurring within the Proposed Action area (CNDDB 2016), but this species may be present if suitable vernal pool habitat exists within the Action Area. The Proposed Action would not involve any ground disturbing activities, changes in land use, or conversion of suitable vernal pool habitat.
FISH			
Delta smelt (*Hypomesus transpacificus*)	T,X	NE	This species occupies brackish waters in the Delta, and does not occur within the DMC. The Proposed Action would have No Effect on waterways within this species' range.
Steelhead, Central Valley DPS (*Oncorhynchus mykiss*)	T, X NMFS	NE	This species does not occur within the DMC and the Proposed Action would have No Effect on waterways that are inhabited by this species, nor its critical habitat.
FLOWERING PLANTS			
Large-Flowered fiddleneck (*Amsinckia grandiflora*)	E,X	NE	This species does not occur within the Proposed Action area.
Palmate-bracted bird's beak (*Cordylanthus palmatus*)	E	NE	This species does not occur within the Proposed Action area.
San Joaquin woolly-threads (*Monolopia congdonii*)	E	NE	This species does not occur within the Proposed Action area.
INSECTS			
San Bruno Elfin butterfly (*Callophrys mossii bayensis*)	E	NE	There are no records of this species in or near the Proposed Action area and suitable coastal scrub and cliff habitat for this species is not present.
Valley Elderberry Longhorn beetle (*Desmocerus californicus dimorphus*)	T,X	NE	There are no records of this species within the Proposed Action area (CNDDB 2016); however, this species may occur if its host plant, the elderberry bush, is present. The Proposed Action would not involve any construction, changes in land use, or conversion of habitat which may be suitable for this species.

Listed Species	Status[1]	ESA Effects[2]	Basis for Effects Determination
MAMMALS			
Fresno kangaroo rat (*Dipodomys nitratoides exilis*)	E, X	NE	There are no records of this species occurring within the Proposed Action area (CNDDB 2016), and a majority of the Proposed Action area is outside of the known range of this species. The Proposed Action would not involve any construction, changes in land use, or conversion of habitat which may be suitable for this species, nor its critical habitat.
Giant kangaroo rat (*Dipodomys ingens*)	E	NE	There is one record of this species within the San Luis Water District (CNDDB 2016). The Proposed Action would not involve any construction, changes in land use, or conversion of habitat which may be suitable for this species.
Riparian brush rabbit (*Sylvilagus bachmani riparius*)	E	NE	This species does not occur within the Proposed Action area.
Riparian woodrat (*Neotoma fuscipes riparia*)	E	NE	This species does not occur within the Proposed Action area.
San Joaquin kit fox (*Vulpes macrotis mutica*)	E	NE	There are multiple records of this species within the Proposed Action area (CNDDB 2016). The Proposed Action would not involve any ground disturbance, changes in land use, or conversion of habitat which may be suitable for this species.
REPTILES			
Alameda whipsnake (*Masticophis lateralis euryxanthus*)	T, X	NE	There are no records of this species within the Proposed Action area (CNDDB 2016). The Proposed Action would not involve any construction, changes in land use, or conversion of habitat which may be suitable for this species.
Blunt-nosed leopard lizard (*Gambelia sila*)	E	NE	There are records of this species within the San Luis Water District (CNDDB 2016). The Proposed Action would not involve any construction, changes in land use, or cultivation of native or untilled lands which may provide habitat for this species.
Giant garter snake (*Thamnophis gigas*)	T	NE	There are records of this species near the Proposed Action area (CNDDB 2016), and this species may occupy portions of the DMC, or nearby irrigation ditches. The Proposed Action would not involve any ground disturbance, land conversion or construction, and all water introduced into the canal would comply with water quality requirements in order to avoid potential effects to the species.

1 Status= Federally protected species under the Endangered Species Act, unless otherwise specified.
E: Listed as Endangered.
NMFS: Species under the jurisdiction of the National Marine Fisheries Service.
T: Listed as Threatened.
P: Proposed for federal listing.
PX: Proposed Critical Habitat – critical habitat proposed for a species already listed.
X: Critical Habitat designated for this species.
2 ESA Effects = Effect determination for Endangered Species Act Analysis
NE: No Effect from the Proposed Action to federally listed species

3.2.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would not allow groundwater with selenium concentrations from 2 to 5 ppb to be temporarily pumped into the DMC under the existing DMC Groundwater Pump-in Program. Because conditions would remain the same as existing conditions, there would be no impact to biological resources.

Proposed Action

The water associated with the Proposed Action would be used to sustain existing permanent crops during the current severe drought, and would not be used to convert natural lands, or lands which have been fallowed or untilled for three or more years. The infrastructure required to carry out the Proposed Action is already in place and no ground disturbance, modification of facilities, or construction would occur as a result of the Proposed Action.

Selenium is an essential micronutrient that occurs naturally, but is also a bio-accumulative pollutant which can be toxic at elevated concentrations (EPA 2015a). A substantial increase in selenium concentrations within the DMC could negatively affect wildlife species that are associated with aquatic habitats, including certain federally listed species like the giant garter snake. Toxic exposure to selenium occurs primarily through the consumption of selenium-contaminated prey, rather than direct exposure to selenium in the water (EPA 2015a). Currently, the Environmental Protection Agency's (EPA) water quality criteria recommend a maximum selenium concentration of 5 ppb for the protection of freshwater aquatic life (EPA 2015b); however, the EPA is currently in the process of updating their criteria to reflect more recent scientific knowledge and, pending external peer review and approval, the EPA is suggesting a new maximum selenium concentration of 4.8 ppb (EPA 2015a; EPA 2015b). As discussed in Section 3.2.2, baseline selenium concentrations in the DMC (0.4 ppb on average) are expected to increase by about 0.05 ppb as a result of the Proposed Action, and would, therefore, remain well below the EPA's current and proposed selenium criteria for the protection of aquatic wildlife, and below the 2 ppb selenium criteria set for the DMC.

On August 4, 2014, Reclamation approved a similar action which allowed 14 wells, with selenium concentrations between 2 ppb and 5 ppb, to pump groundwater into the upper portion of the DMC through August 30, 2014. Before approval of the 2014 action, it was estimated that selenium concentrations in the DMC would increase by 0.5 ppb (Reclamation 2014). However, daily composite measurements of selenium in the DMC taken before, during, and after the 2014 action occurred showed that the addition of water from the 14 wells caused no measurable increase in selenium concentrations within the canal. Furthermore, selenium concentrations at Check 13 (O'Neill Forebay) did not exceed 0.4 ppb, and remained well below the water quality standard of 2 ppb during that time (see Figures 1 and 2). A similar action also occurred in 2015 for 13 wells. As shown in Figures 3 and 4, there was no measureable change in selenium concentrations within the DMC or at Check 13.

Potential effects to giant garter snakes, or aquatic birds, would only be expected to occur if selenium concentrations in the DMC exceed water quality criteria sufficiently long enough to affect prey or federally protected species. Reclamation will continue real-time monitoring of water quality in the DMC and if the addition of groundwater under the Proposed Action causes

selenium concentrations to exceed 2 ppb, Reclamation will order wells with the highest selenium concentrations to be shut off immediately. The brief delay between the detection of exceeded water quality standards, the subsequent shut down of the pumps, and the resulting reduction in selenium concentrations would take no more than a day or two. This process would further avoid any adverse effects to wildlife because water quality standards would quickly return to baseline conditions and would remain well below the EPA's recommended 5 ppb criteria for the protection of aquatic wildlife.

State Wildlife Areas (e.g. refuges) generally receive their water from the DMC via Mendota Pool or the Volta Wasteway. Although water from the Proposed Action may reach these areas it would have no effect on wildlife because selenium concentrations were previously shown to stay well below 2 ppb and would be closely monitored to ensure that they would remain below the 2 ppb criteria for the DMC.

Although certain federally listed species are expected to occur in areas of suitable habitat within the Proposed Action area (see Table 6), the Proposed Action would not involve any construction, ground disturbance, or changes in land use; so areas of suitable habitat, and the species that depend on them, would not be affected. Selenium concentrations are not predicted to increase more than 0.5 ppb during the Proposed Action, well below the 2 ppb criteria for the DMC. In addition, when the same action was carried out in 2014 and 2015 (with additional wells) selenium concentrations in the canal did not measurably change as shown in Figures 1 through 4.

Based upon the discussion above, and with the implementation of avoidance measures listed in Table 2, Reclamation has determined there would be No Effect to proposed or listed species or critical habitat under the Endangered Species Act of 1973, as amended (16 U.S.C. §1531 et seq.) and No Take of birds protected under the Migratory Bird Treaty Act (16 U.S.C. §703 et seq.).

Cumulative Impacts

As the Proposed Action would not result in any direct or indirect impacts to federally listed, proposed, or candidate species, or critical habitat, it would not contribute cumulatively to any impacts to these resources.

3.3 Water Resources

3.3.1 Affected Environment

The affected environment is the same as described in Section 3.1 of EA-12-061 (Reclamation 2013), Section 3.2 in EA-14-031, and Section 3.2 in EA-15-040 which are incorporated by reference into this EA. Rather than repeating the same information, the affected environment and environmental consequences section in this EA will focus on updates or changes.

Water Quality Results for the DMC in 2014 and 2015

As described in Section 1.1, Reclamation previously approved a temporary change in its water quality requirements in 2014 and 2015. As shown in Figures 1 through 4, the selenium concentrations during the previous actions did not change the concentration of selenium in the DMC and the selenium concentrations at Check 13 (near O'Neill Forebay as shown in Figure 3) remained well below the 2 ppb requirement.

Reclamation and the Authority continuously monitor water quality within the DMC. A summary of water quality test results for the DMC over the last two years, including the headworks and Check 13, are included in Appendix B.

3.2.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would not temporarily change the maximum acceptable concentration of selenium at the well head for the 11 wells included in Table 1 from 2 ppb to 5 ppb through September 30, 2016. Only wells that meet the current water quality requirements specifically described in Reclamation's water quality monitoring plan (Reclamation 2016) would be allowed to pump groundwater into the DMC under the previously approved DMC Groundwater Pump-in Program. South of Delta CVP contractors would not have an additional supply, up to 40 AF per day, available for use on existing crops.

Proposed Action

Under the Proposed Action, Reclamation would temporarily change the maximum acceptable concentration of selenium for the wells listed in Table 1 from 2 ppb to 5 ppb. All of these wells are located between within the upper portion of the DMC and all have selenium concentrations below 5 ppb. The temporary change, which would only be in effect through September 30, 2016, would allow up to 2,462[2] AF to be introduced under the previously approved DMC Groundwater Pump-in Program. This water would be used to sustain existing permanent crops during this period of severe drought.

As shown in Appendix B, daily average selenium concentrations measured at the DMC headworks and at Check 13 have been less than 0.4 ppb. At both locations monthly average selenium concentrations were less than 0.4 ppb, below the 2 ppb monthly average objective for selenium in the Grasslands wetlands water supply channels specified in the Basin Plan (Central Valley Water Quality Control Board 2011).

Based on the background selenium concentration and base flows in the DMC, Reclamation has calculated the effect of adding the groundwater pump-ins from these 11 wells on the baseline concentration of selenium in the DMC (see Table 5). In addition, Reclamation reviewed recent lab analyses results of the 11 wells. The range of selenium measured is between 2.4 and 4.9 ppb, with a flow-weighted average of 3.2 ppb (see Table 1 and Table 5). Full mixing of the groundwater from the 11 wells is expected to occur as the groundwater pump-ins are spread over approximately 44 miles of the DMC. Reclamation predicts that the concentration of selenium in the DMC is expected to increase to 0.6 ppb with the addition of water from the 11 wells (see Table 5). The effect of the groundwater pump-ins would, therefore, result in water in the DMC remaining well below the 2 ppb selenium concentration requirement as occurred in 2015 and 2014.

[2] Estimate based on operation between August 1 – September 30, 2016 = 60 days x 21 cfs x 1.9835.

Table 5 2016 Projected Monthly Contribution of Pump-ins to DMC Selenium Concentrations

	Number of wells	Flow (cfs)	Selenium concentration** (ppb)	Total Dissolved Solids* (mg/L)
Baseline (DMC headworks)		798	<0.4	196
Approved wells (less than 2 ppb selenium)	21	61	2.0	667
Proposed wells (2 – 5 ppb selenium)	11	21	3.2	563
Blend of all wells and canal	33	880	0.6	237
Predicted change in the canal			0.2	41
Notes: DMC baseline data for 21 July 2016; *flow weighted concentrations.				

Cumulative Impacts

As shown in Table 5, selenium concentrations in the DMC is predicted to temporarily increase slightly due to groundwater pump-ins from the 11 wells. However, as selenium concentrations would remain well below the set water quality criteria of 2 ppb, no cumulatively adverse water quality impacts would occur.

Section 4 Consultation and Coordination

Reclamation has coordinated with the following regarding the Proposed Action:

- San Luis & Delta-Mendota Water Authority
- Del Puerto Water District
- San Luis Water District

4.1 Public Review Period

Reclamation provided the public with an opportunity to comment on the Draft FONSI and Draft EA between July 28, 2016 and August 5, 2016. No comments were received.

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