NEGATIVE DECLARATION
WIDREN WATER DISTRICT GROUNDWATER QUALITY, SUPPLY, AND DRAINAGE ENHANCEMENT PROGRAM

Widren Water District
259 I Street
Los Banos, California 93635

April 1, 2024

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ACRONYMS AND ABBREVIATIONS

AFY	Acre Feet per Year
bgs	below ground surface
BPSs	Best Performance Standards
CAL FIRE	California Department of Forestry and Fire Protection
CARB	California Air Resources Board
CCAP	Climate Change Action Plan
CEQA	California Environmental Quality Act
CFCs	Chlorofluorocarbons
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CVP	Central Valley Water Project
CVRWQCB	Central Valley Regional Water Quality Control Board
dB	Decibel
dBA	A-weighted decibel scale
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
EC	Electro-conductivity
Farmland	Farmland of Statewide Importance
GHGs	Greenhouse Gases
GSAs	Groundwater Sustainability Agency
HCFCs	Hydrochlorofluorocarbons
IS	Initial Study

ACRONYMS AND ABBREVIATIONS (Cont.)

ND	Negative Declaration
N_2O	Nitrous Oxide
NO	Nitric Oxide
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
Ozone	Ground-level Ozone
PM_{10}	Respirable Particulate Matter
$PM_{2.5}$	Fine Particulate Matter
Project	Widren Water District Water Quality, Supply, and Drainage Enhancement Program
RWQCB	Regional Water Quality Control Board
SJRRP	San Joaquin River Restoration Program
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLC	San Luis Canal
SO_2	Sulfur Dioxide
SWRCB	State Water Resources Control Board
TACs	Toxic Air Contaminants
TDS	Total Dissolved Solids
USBR	U.S. Bureau of Reclamation
USGS	U.S. Geological Survey
VOCs	Volatile Organic Compounds
WWD	Westlands Water District

1.0 INTRODUCTION

This Initial Study (IS) and Negative Declaration (ND) has been prepared in accordance with the California Environmental Quality Act (CEQA) and State Guidelines for Implementation of CEQA. It serves as the environmental document for the proposed Widren Water District Groundwater Water Quality, Supply, and Drainage Enhancement Program ("Project"). The primary intent of this document is to determine whether Project implementation would result in potentially significant or significant impacts to the environment.

In accordance with CEQA, projects that have potential to result in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, must undergo analysis to disclose the potential significant effects. The provisions of CEQA apply to California governmental agencies at all levels, including local agencies, regional agencies, State agencies, boards, commissions, and special districts. CEQA requires that an IS be prepared for a discretionary project. to determine the range of potential environmental impacts of that project and define the scope of the environment review document. As specified in the CEQA Guidelines Section 15064(f)(3), if the lead agency determines during the IS analysis there is no substantial evidence that the project may have a significant effect on the environment, the lead agency shall prepare a negative declaration. As the lead agency for the proposed Project, Widren Water District has the principal responsibility for conducting the CEQA environmental review to analyze the potential environmental effects associated with Project implementation. During the review process, it was determined there is no substantial evidence that the project may have a significant effect on the environment. Therefore, an ND has been prepared for the proposed Project.

2.0 PROJECT TITLE

Widren Water District Water Quality, Supply, and Drainage Enhancement Program

3.0 LEAD AGENCY NAME AND ADDRESS

Widren Water District
259 I Street
Los Banos, California 93635

4.0 CONTACT PERSON AND PHONE NUMBER

Damian Aragona
(209) 826-0342

5.0 APPLICANT

Widren Water District
259 I Street
Los Banos, California 93635

6.0 PROJECT OVERVIEW

The proposed Project is located on the westside of the San Joaquin Valley (Figure 1) and involves areas served by the Bureau of Reclamation ("Reclamation"), Widren Water District ("Widren" or "District"), Firebaugh Canal Water District, and Westlands Water District ("WWD"). Widren is in northwestern Fresno County within the Grassland Drainage Area (Figure 2).

The Grassland Drainage Area is known for subsurface drainage problems due to heavy clay soils that contain a variety of dissolved minerals including boron and selenium within a perched water table. The perched water table in the Grassland Drainage Area is often managed with subsurface (tile) drain systems and deep earthen channels which provide an outlet for the shallow groundwater (Exchange Contractors 2003). However, the subsurface drain water can be high in dissolved minerals including salt and selenium.

Consistent with the Westside Regional Drainage Plan (San Joaquin Valley Drainage Program 1990), Widren installed tile drains in approximately 460 acres within its boundary. Perched drainage water was lowered in this area; however, the remaining untiled area within the district continues to have perched groundwater with high concentrates of dissolved minerals. To address this, Widren constructed a Reverse Osmosis (RO) Treatment Plant to treat extracted perched groundwater for use within an in-district Reuse Area (Figure 1). In 2018, Widren initiated a pilot project in cooperation with Reclamation to collect data on water quality, subsidence, and groundwater in order to evaluate potential effects of a longer-term project that would involve the extraction and treatment of poor quality initially proposed by Widren, the discharge of treated groundwater into the Delta-Mendota Canal, and the transfer or exchange of the treated groundwater to Central Valley Project contractors.

Reclamation prepared two environmental assessments in connection with the pilot project. Reclamation's initial environmental assessment (EA) was prepared in 2017 and analyzed the direct, indirect, and cumulative impacts of the proposed Pilot Project to the following resources: air quality, biology, cultural resources, environmental justice, global climate change, Indian Sacred Sites, Indian Trust Assets, land use, and water resources. Based on specific environmental commitments required for the Pilot Project, Reclamation determined that there would be no significant affect to the quality of the human environment and a Finding of No Significant Impact (FONSI) was issued on November 14, 2017. The 2017 FONSI and EA (Reclamation 2017) are hereby incorporated by reference. As Widren's Warren Act contract expired in December 2018, Widren requested a new Warren Act contract to continue gathering data. Reclamation analyzed a proposed three-year extension of the Pilot Project in another EA.

(Reclamation 2019). Reclamation's second EA, prepare in 2019, addressed the same resources analyzed in the 2017 EA and due to continued implementation of the same environmental commitments and analysis of data gathered since the 2017 EA, Reclamation determined that the project would not have a significant impact and a FONSI was issued on March 4, 2019. The 2019 FONSI and EA (Reclamation 2019) are hereby incorporated by reference

Figure 1
Map Depicting Area of Proposed Project

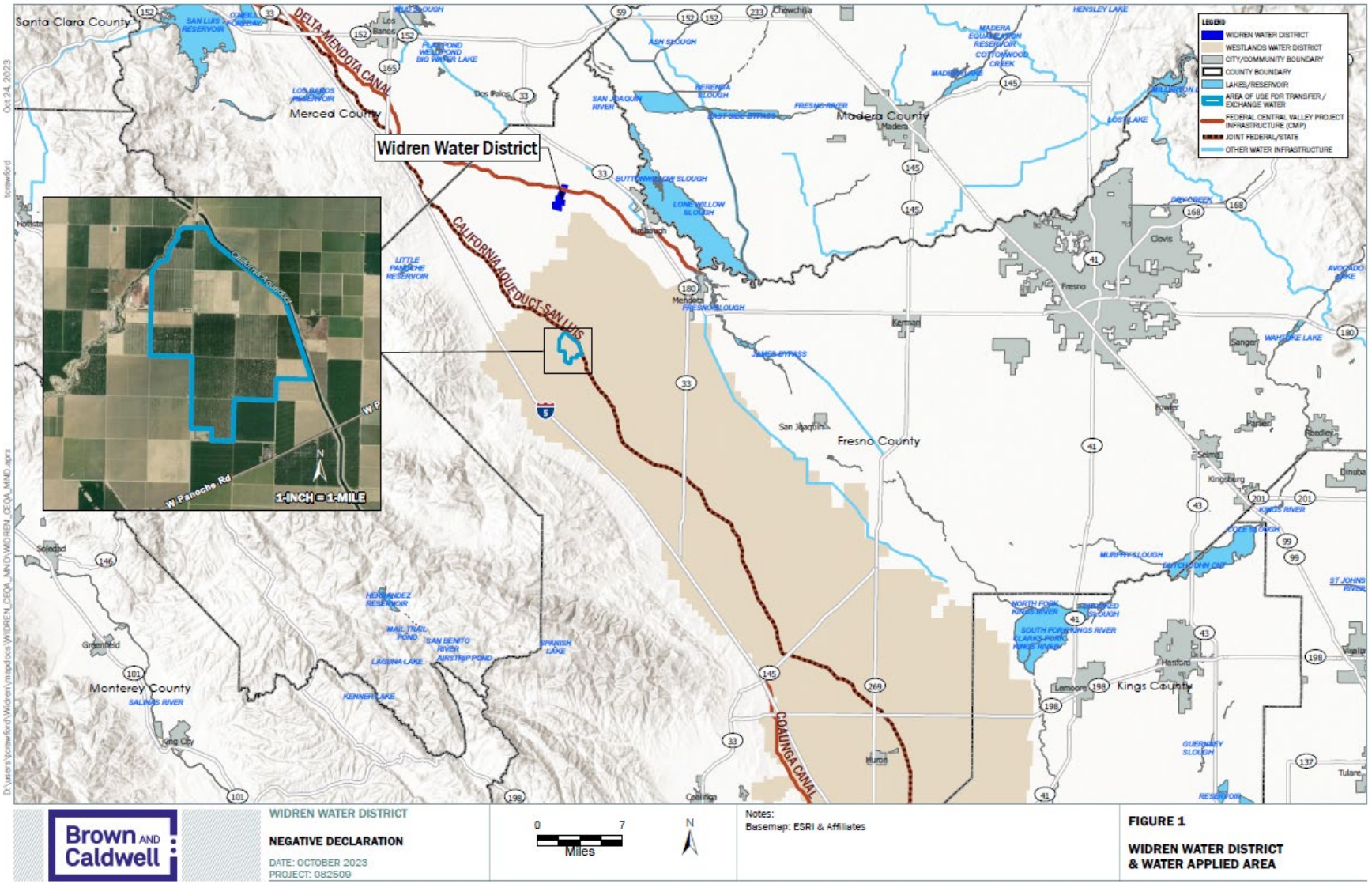


Figure 2
Widren Water District Location

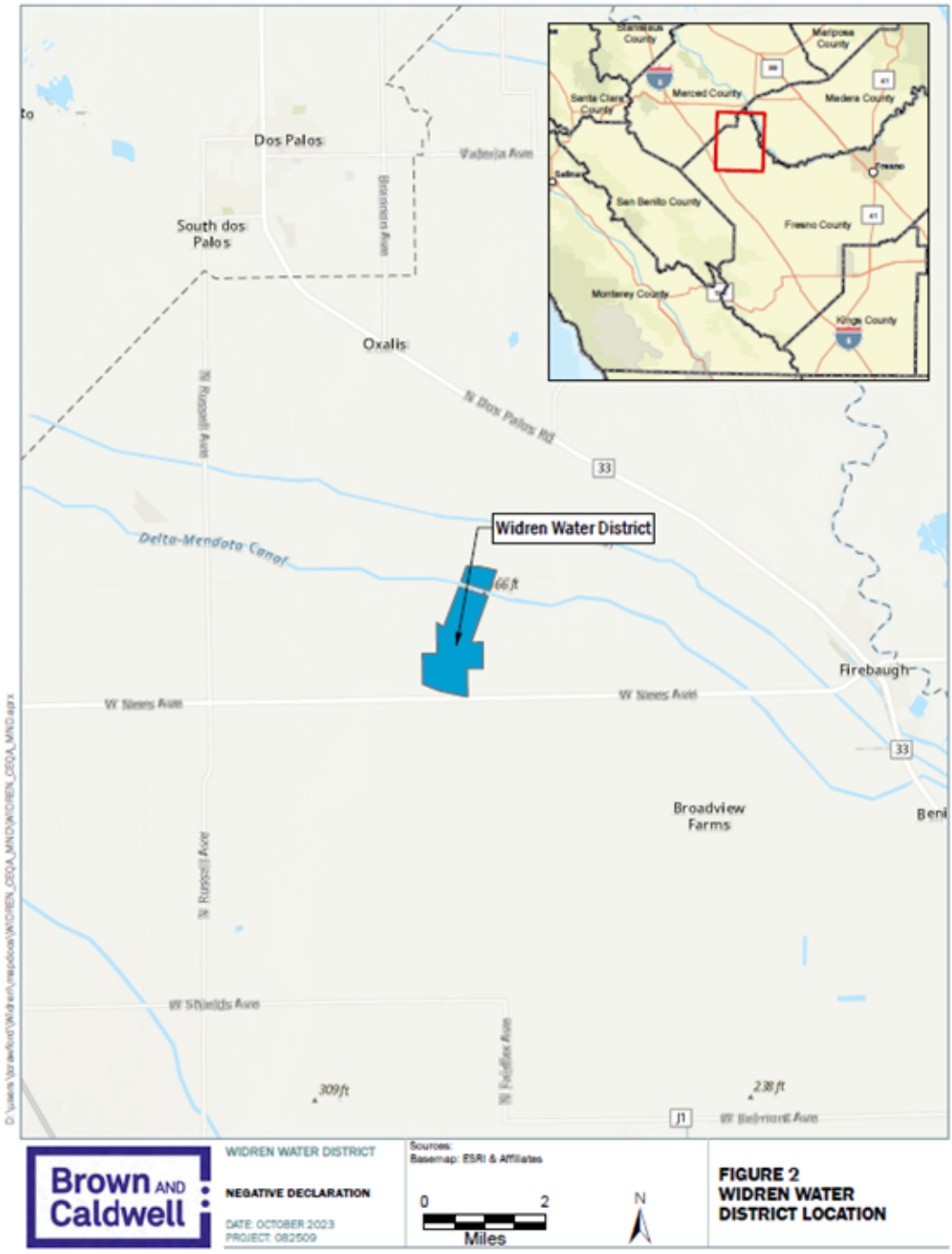


Figure 3
South-of-Delta CVP Contractors

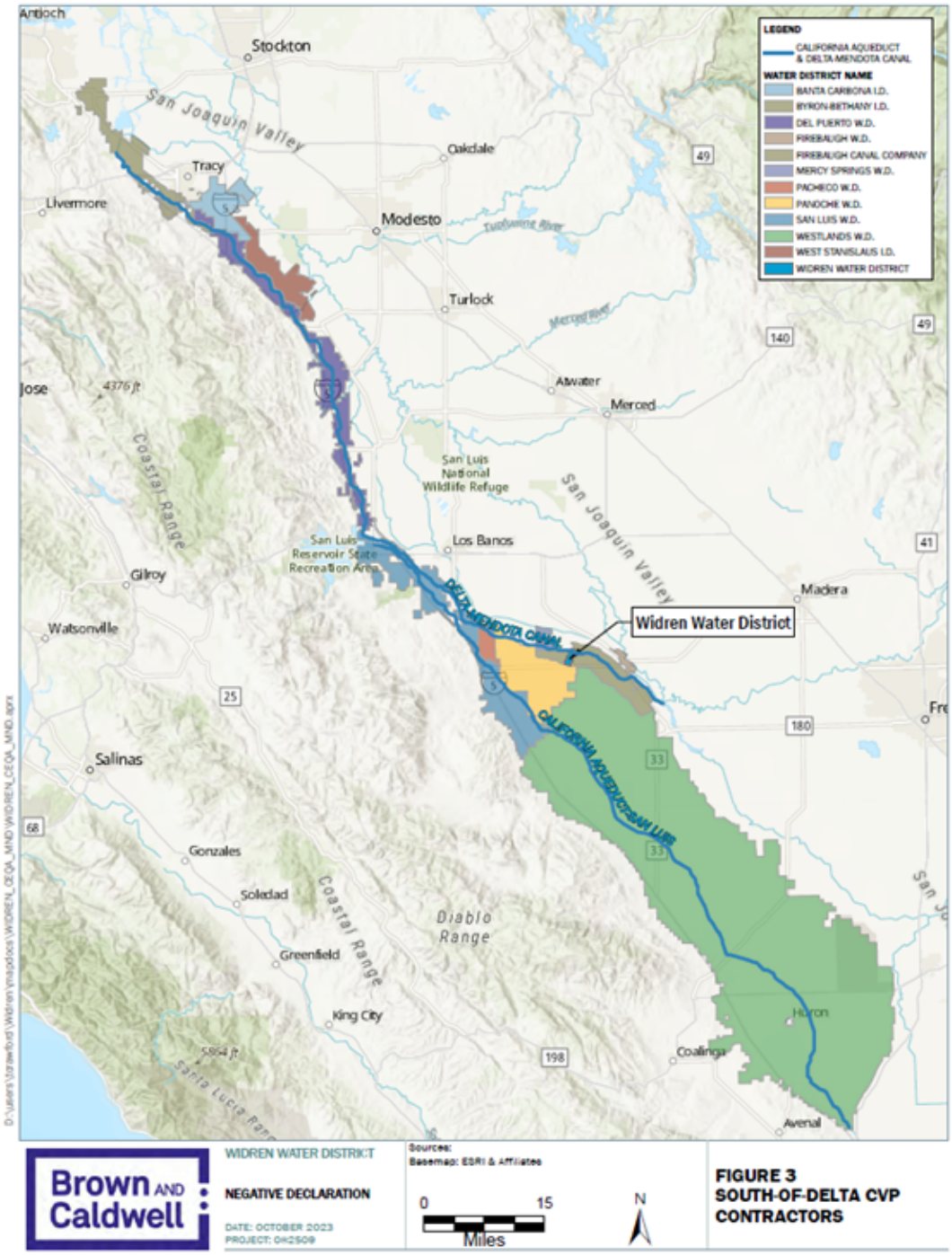


Figure 4
Reuse Lands

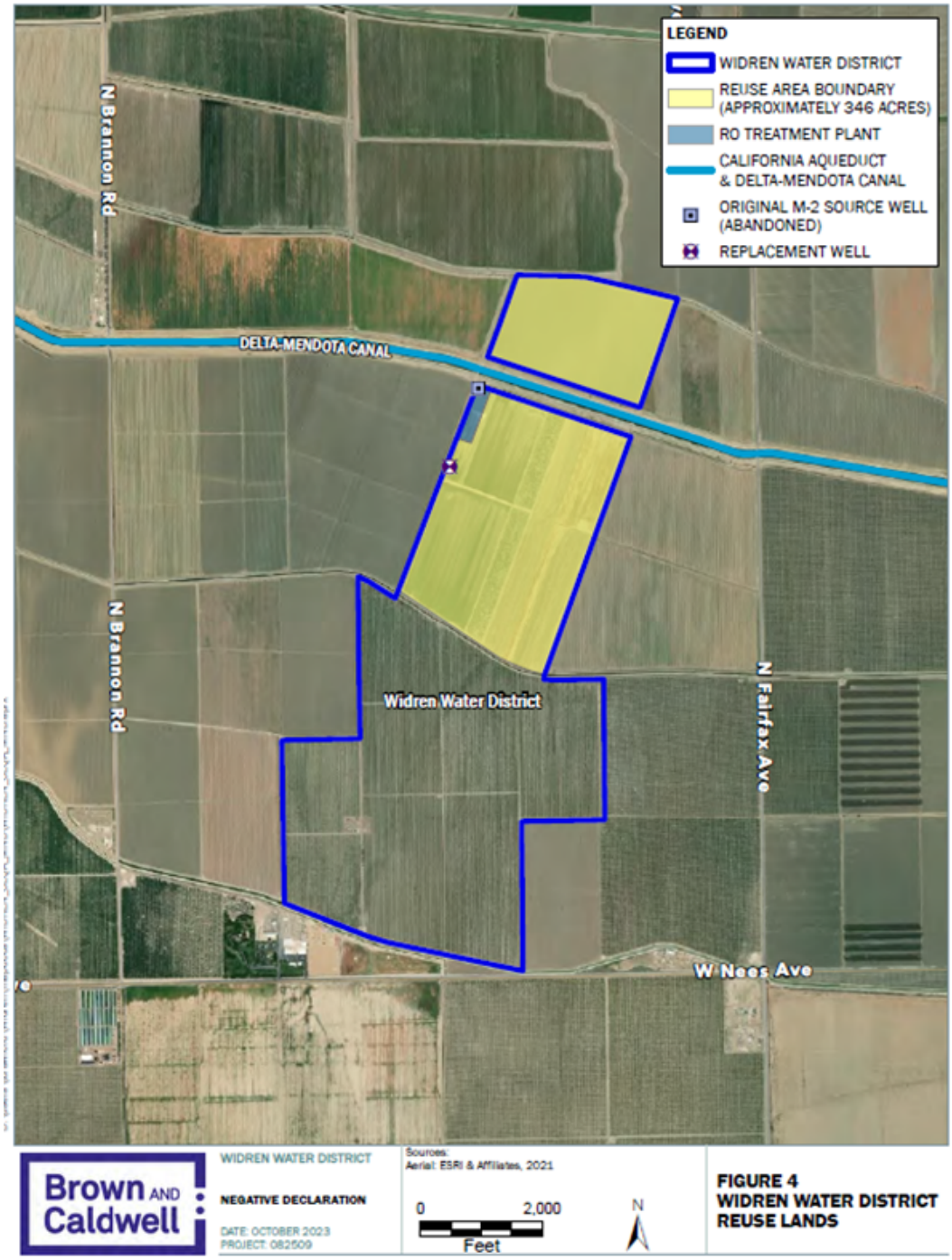
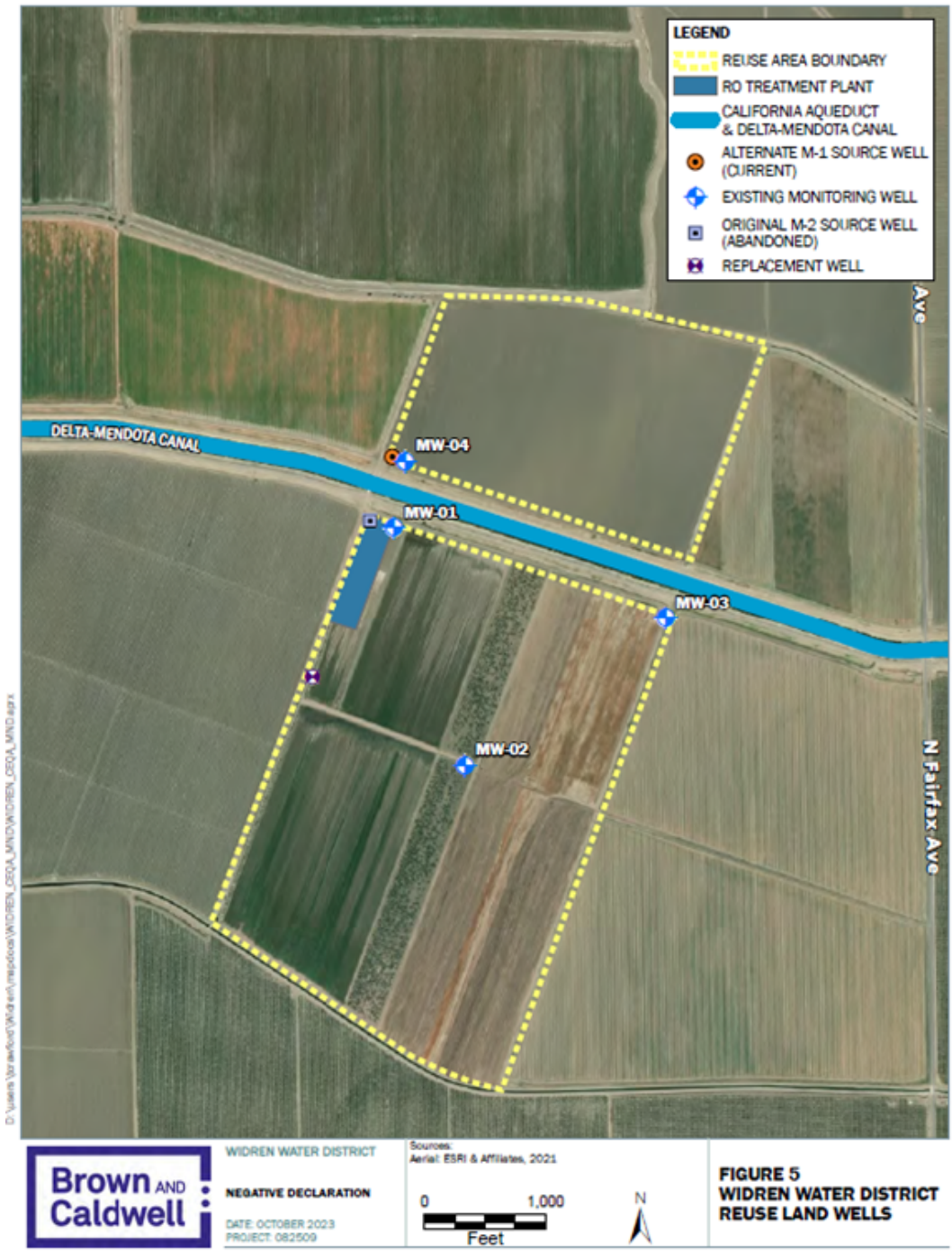


Figure 5
Reuse Land Wells



7.0 PROJECT DESCRIPTION

Widren Water District proposes to implement a Water Quality, Supply, and Drainage Enhancement Program, through which up to 2,500 acre-feet of poor-quality groundwater will be extracted from the perched groundwater table and treated through reverse osmosis annually. The treated groundwater will either be introduced into the existing water distribution system operated by Firebaugh Canal Water District or introduced into the Delta-Mendota Canal. If the treated groundwater is introduced into Firebaugh's water distribution system it will be used within Firebaugh's service area, and 2,000 acre-feet of Central Valley Project water will be made available by Firebaugh for transfer to WWD for use by individuals or entities that own land in both Widren and WWD. If the treated groundwater is introduced into the Delta-Mendota Canal, a Warren Act Contract with Reclamation, and an exchange of water (non-Project for CVP) would be required. Treated groundwater introduced into the Delta-Mendota Canal will be of better or equal quality to water quality levels in the canal. Appendix Figure A-6 table depicts the quality of water after treatment by the reverse osmosis plant. Reclamation would use the introduced non-Project water to meet downstream CVP demands and a like amount of CVP water would then be conveyed to WWD or stored in San Luis Reservoir for later delivery to WWD for use by individuals or entities that own land in both Widren and WWD. Effluent or backflush water produced by the reverse osmosis treatment plant (estimated at 300 acre-feet) would be blended with up to 500 acre-feet of groundwater from the same existing well and then delivered to landowners within Widren through existing underground pipes, for irrigation of salt tolerant crops, which uptake salts and other constituents, in the Reuse Area (Figure 4). These landowners operate under the State Water Resources Control Board's Waste Discharge Requirements General Order (Order R5-2015-0095) for growers in the Grassland Drainage Area. This Order is part of the Irrigated Lands Regulatory Program and regulates discharge to groundwater.

The proposed Water Quality, Supply, and Drainage Enhancement Program would complement proposals made by Reclamation for the management of drainage in the San Luis Unit of the Central Valley Project (San Luis Drainage Feature Re-evaluation Record of Decision, 2007) and drainage management currently being undertaken in adjacent water districts, Panoche Water District and Firebaugh Canal Water District.

7.1 Project Background

This Initial Study/Negative Declaration (IS/ND) was prepared under the California Environmental Quality Act (CEQA) and describes a proposed long-term (ten-year) Water Quality, Supply, and Drainage Enhancement Program. In 2017, Reclamation approved a pilot project for the introduction and conveyance of up to 2,000 acre-feet of Reverse Osmosis-treated groundwater into the Delta-Mendota Canal as well as potential storage in San Luis Reservoir for the purpose of collecting data to evaluate potential impacts on water quality, subsidence, and groundwater in order to evaluate potential effects of a longer-term project. In 2019, Reclamation extended the pilot project to the end of February 2024.

In connection with its approval of the pilot project, Reclamation adopted specific operating criteria, including:

- The water would not be used to place untilled or native lands into production, or to convert lands that have been fallowed or untilled for three or more years.
- The Proposed Action cannot alter the flow regime of natural waterways or natural watercourses so as to have a detrimental effect on fish or wildlife or their habitats.
- The treated water shall be used for beneficial purposes.
- Use of the water shall comply with all federal, state, and local laws, including SGMA and Delta Mendota-subbasin requirements.
  imposed for protection of the environment.
- No land conversions may occur as a result of the Proposed Action.
- Widren shall adhere to the Regional Board's Waste Discharge Requirements General Order for discharges of groundwater.

In addition, Reclamation imposed a maximum increase on depth to shallow groundwater that could be induced by operations of the pilot project of 103 feet. During implementation of the pilot project Widren collected data on Depth to Groundwater (Appendix Figure A-1), Subsidence (Appendix Figure A-2), Water Quality of Blended Water (Appendix Figure A-3), Water Quality from Monitoring Wells (Appendix Figure A-4), and Water quality from Production Wells (Appendix Figure A-5).

7.2 Project Vicinity and Location

The Project is in northwestern Fresno County within Widren Water District, which lies on the westside of the San Joaquin Valley (Figure1). Widren overlies the Delta-Mendota Subbasin, which the California Department of Water Resources has designated as critically over drafted and requiring a groundwater sustainability plan pursuant to the Sustainable Groundwater Management Act (SGMA), (California Department of Water Resources 2016, 2018a). Widren formed its own Groundwater Sustainability Agency (GSA) and is coordinating with other GSAs in the Delta-Mendota Subbasin in the development of groundwater sustainability plan(s) for the Delta-Mendota Subbasin in compliance with the timing and requirements of SGMA (California Department of Water Resources 2019). Groundwater provides approximately 37 percent (~509,687 acre-feet) of overall water supplies from 7,132 wells in the Delta-Mendota Subbasin (California Department of Water Resources 2018b).

7.3 Project Setting

Widren is comprised of 835 acres of farmland in northwestern Fresno County and is bisected by the Delta-Mendota Canal. Historically, Widren received Central Valley Project water pursuant to a water service contract with the United States; however, this contract was assigned to WWD in 2004. After this contract assignment, Widren's principal source of water has been groundwater, with supplemental supplies provided through water transfers from adjacent water districts. Widren is bordered by Panoche Water District to the south and Firebaugh Water District to the east and

west. The area immediately north of Widren is a “white area,” not served by any public water agency. Panoche Water District receives Central Valley Project water pursuant to a repayment contract with the United States, and Firebaugh Canal Water District receives Central Valley Project water pursuant to the 1939 Contract for the Exchange of Waters with the United States. Widren is also within the Grassland Drainage Area, which is known for subsurface drainage problems due to heavy clay soils that contain a variety of dissolved minerals including boron and selenium within a perched water table. Unless the perched water table in the Grassland Drainage Area is managed, the accumulation of salts contained in imported surface water and the encroachment of water into the crop root zone will destroy the arability of agricultural lands. (Final Environmental Impact Statement for the San Luis Drainage Feature Re-evaluation, 2006.)

7.4 Existing Widren Monitoring Program

Current Activities
Widren current program consists of the following elements:

- Quality of groundwater in the shallow aquifer.
- Quality of groundwater extracted by production wells.
- Quality of water treated through reverse osmosis.
- Quality of blended post-treatment concentrate and well water for irrigation within reuse area.
- Depth to groundwater in shallow aquifer in both production and monitoring wells.

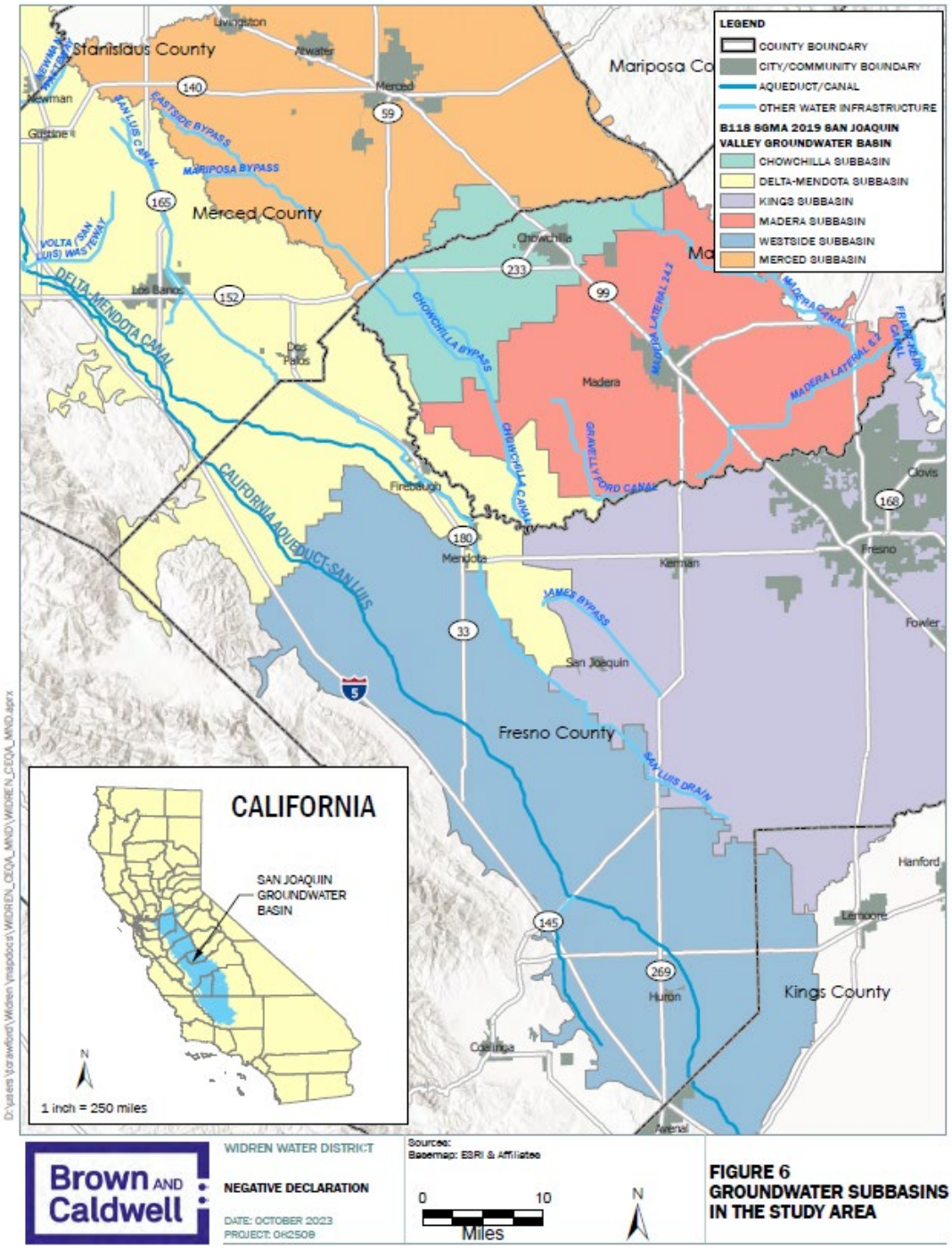
Data from these monitoring programs are displayed in Appendix A-3 – A-5.

7.5 Project Objectives

The proposed Project has the following objectives:

1. Manage subsurface drainage water.
2. Improve the quality of water delivered to landowners within Widren and adjacent areas within Firebaugh Canal Water District.
3. Provide a supplemental supply of water for use within WWD by landowners that own land in both Widren and WWD.
4. Reduce reliance on groundwater within the Westside Subbasin.
5. Provide flexibility in using water supplies to help sustain agricultural crop.

Figure 6
Groundwater Subbasins
In The Study Area



8.0 PROJECT DETAILS

The proposed Project would involve four main components: (1) pumping up to 2,500 acre-feet of poor quality subsurface drainage water from the shallow aquifer; (2) treating the subsurface drainage water through reverse osmosis; (3) blending effluent or backflush water produced by the reverse osmosis treatment plant with groundwater for irrigation of salt tolerant crops in the Reuse Area; (4) discharging treated water into Firebaugh Canal Water District's existing conveyance system for delivery to irrigators within Firebaugh Canal Water District or the Delta-Mendota Canal to offset downstream CVP demands; and (5) transferring or exchanging water for the irrigation of lands in WWD immediately adjacent to the San Luis Canal (California Aqueduct). Due to the proposed limitations on pumping and the established historic use of the wells, it is not anticipated that overall groundwater extraction would increase under this proposal. These matters are discussed more fully below.

8.1 Project Groundwater Pumping Program

The proposed Project would extract up to 2,500 acre-feet of poor-quality subsurface drainage water from the shallow aquifer and treat the drainage water utilizing an existing reverse osmosis treatment plant, which has been in operation since 2018. Drainage water would be pumped from the unconfined aquifer from a maximum depth of 330 feet below the ground surface, utilizing existing groundwater wells. Groundwater levels in the unconfined aquifer would be monitored, and the extraction of drainage water would cease if groundwater level fell below 130 feet from the ground surface. The amount of water potentially pumped and conveyed annually could be driven by the following factors:

- USBR contract allocation levels to water users;
- conveyance capacities of the WWD distribution system; and
- seasonal limitations on groundwater pumping related to groundwater overdraft and potential subsidence.

To achieve the volume of extractions and treatment of poor-quality subsurface drainage water, Widren would replace an existing groundwater well that was operated in connection with the pilot project and add an additional unit to the existing reverse osmosis treatment plant. The replacement well would be drilled to a depth of 330 feet (20 feet above the Corcoran Clay) and screened to extract water from only the unconfined aquifer. In addition, the replacement well would be constructed approximately 2,630 feet south of the existing well's location. (Figure 4). The existing well would be abandoned consistent with Title 14 of the Ordinance Code of Fresno County. Activities related to the abandonment of the existing well, construction of the replacement well, and installation of the additional reverse osmosis unit would be temporary (approximately 3 weeks) and would require minor amounts of construction equipment, excavation, and construction worker trips.

8.2 Conveyance Mechanisms

The proposed Project would discharge treated water into Firebaugh Canal Water District's existing Second Lift Canal, which bisects Widren, and Firebaugh's existing Third Lift Canal, which is on Widren's southern boundary. Both the Second Lift Canal and the Third Lift Canal convey

water in a northwesterly direction. The treated water would be delivered to farmers in Firebaugh Canal Water District for use on ground currently under irrigated cultivation. Alternatively, treated groundwater would be introduced into the Delta-Mendota Canal for exchange through Reclamation for CVP water. Under this means of conveyance a Warren Act Contract would be required for the conveyance and storage of non-CVP water in CVP facilities. The total volume of drainage water pumped and treated for discharged into Firebaugh Canal Water District's distribution system or the Delta-Mendota Canal would not exceed 2,500 acre-feet per year.

8.3 Water Quality Monitoring and Protection

Groundwater in the shallow aquifer in Widren generally has high salinity content due to the historic buildup of salts in the soils. Salinity is typically measured using Electro-conductivity (EC) often stated as Total Dissolved Solids (TDS). To confirm that the application of groundwater blended with concentrate from reverse osmosis treatment plant for use on salt tolerant crops in the Widren reuse area does not further degrade groundwater quality, Widren has conducted regular groundwater quality monitoring as prescribed by Reclamation in connection with its approval of Widren's pilot project. This monitoring program will continue following the addition of the second reverse osmosis unit. Key constituents for testing include TDS, metals, organic chemicals, and other potential pollutants. Data from this groundwater quality monitoring program are in Appendix A3 – A5. Groundwater quality monitoring would continue during operations of the proposed Project.

8.4 Required Approvals

The proposed Project would require approvals from Fresno County for the abandonment of an existing well and the construction of a replacement well. The proposed Project would also require approvals from San Joaquin River Exchange Contractors Water Authority, Firebaugh Canal Water District for the introduction of treated water into its distribution system and transfer of water to WWD: from Reclamation for the introduction of treated drainage water into the Delta Mendota Canal, the transfer or exchange of water from Firebaugh Canal Water District or other sources to WWD, and the conveyance or storage of non-CVP water in CVP facilities; and from WWD to accept the transfer or exchange water for irrigation of lands held by landowners common to Widren and WWD.

9.0 SITE INFORMATION

Table 1.
Site Information

Site Information	
General Plan and Coastal Land Use Plan Designation	Agricultural
Zoning Ordinance, Zone District	Various; See Section 14.10, "Land Use and Planning"
Present Use and Development	Agriculture
Surrounding Use/Zoning	Agriculture
Utilities and Public Services	Water Supply: Groundwater pumping Sewage: N/A Power: Electricity (PG&E) Natural Gas: N/A Telephone: N/A Fire: N/A School District: N/A

10.0 ENVIRONMENTAL SETTING

See "Environmental Setting" discussion under each issue area in Section 14, *Environmental Checklist*.

11.0 EVALUATION OF ENVIRONMENTAL IMPACTS

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the Project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

    a. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

    b. Earlier Analysis Used. Identify and state where they are available for review.

    c. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

5) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used, or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

    a. The significance criteria or threshold, if any, used to evaluate each question; and

    b. The mitigation measure identified, if any, to reduce the impact to less than significance.

12.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist and discussed on the following pages.

☐	Aesthetics	☐	Agriculture and Forestry Resources	☐	Air Quality
☐	Biological Resources	☐	Cultural Resources	☐	Greenhouse Gas Emissions
☐	Geology/Soils	☐	Hazards & Hazardous Materials	☐	Hydrology/ Water Quality
☐	Land Use/Planning	☐	Mineral Resources	☐	Noise
☐	Population/Housing	☐	Public Services	☐	Recreation
☐	Transportation/Traffic	☐	Utilities/Service Systems	☐	Mandatory Findings of Significance

13.0 DETERMINATION

On the basis of this initial evaluation:

☒ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

_____ _____

Damian Aragona
Project Administrator

Date

13.1 Aesthetics

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

13.1.1 Existing Setting

The proposed Project is located within rural western Fresno County. The proposed Project area is open, low elevation, flat agricultural land on the west side of the San Joaquin Valley and is surrounded by row crops, orchards, equipment storage, water conveyance infrastructure (e.g., canals, pumps, and embankments), occasional agricultural outbuildings. The proposed Project would largely utilize existing facilities, including existing wells, treatment plant, and conveyance infrastructure. These areas do not support existing native vegetation, trees, or other scenic features. There are no scenic vistas or designated state scenic highways within the Widren service area.

13.1.2 Discussion

a – d. **No Impact.** The proposed Project is not located on or near a scenic vista and would have no effect on a scenic vista. There are no designated state scenic highways, trees, rock outcroppings or other natural heritage sites in the Project vicinity that could be affected. Therefore, no impacts would occur.

13.2 Agricultural and Forestry Resources

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board (CARB). **Would the Project:**				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

13.2.1 Existing Setting

Agricultural production is the dominant land use in western Fresno County and within the Widren service area. The drainage water pumped, treated, and integrated into Firebaugh's distribution system by the proposed Project will be used for agricultural production. There are no forestry resources within the area affected by the proposed Project.

13.2.2 Discussion

a – e. **No Impact.** The proposed Project would integrate treated drainage water into Firebaugh's existing distribution system or the Delta-Mendota Canal to offset the use of CVP water used to irrigate agricultural lands currently being cultivated, including Prime Farmland. The proposed Project would not convert farmland to nonagricultural uses, and potentially would keep some farmland from becoming fallowed or retired due to drainage impacts or drought conditions. The proposed Project would not conflict with existing zoning for agricultural uses or a Williamson Act contract. The proposed Project would increase available water supplies to irrigate Williamson Act contract lands within the WWD's service area. The proposed Project area does not affect forestry resources and would not conflict with zoning or rezoning of forest land. The proposed Project would not involve land development activities that would directly or indirectly induce changes in the use of surrounding agricultural land, such as the need for schools or other services. The proposed Project would not induce new residential, commercial, or industrial land development activities to occur in the future. Impacts involving changes in the existing environment, which due to their location or nature could result in conversion of farmland to non-agricultural uses would not occur. Overall, implementation of the proposed Project would be supportive of agriculture and would assist farmers in reducing impacts of drainage and maintaining agricultural productivity by providing flexibility in allocation of scarce water supplies. Therefore, no impacts would occur.

13.3 Air Quality

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. **Would the Project:**				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

13.3.1 Existing Setting

The Widren, Firebaugh, and WWD service area is in San Joaquin Valley Air Basin, which includes all of Fresno County as well as seven other Central Valley counties. The San Joaquin Valley Air Pollution Control District implements air quality management strategies to attain and maintain Central Valley air quality standards.

The air pollutants most relevant to air quality planning and regulation in the Air Basin and their potential health impacts include:

13.3.1.1 Ground-Level Ozone (Ozone):

Ozone is a pungent, colorless, toxic gas produced by a photochemical reaction (triggered by sunlight) between nitrogen oxides (NOx) and volatile organic compounds (VOCs). Conditions that produce high concentrations of ozone are direct sunshine, stagnation, high temperatures, and strong temperature inversions. Ozone concentrations are generally highest during the summer months when these conditions are favorable. Direct health effects include respiratory and eye irritation and possible changes in lung functions. Groups most sensitive to ozone include children, elderly, persons with respiratory disorders, and persons who exercise strenuously outdoors.

13.3.1.2 Respirable Particulate Matter (PM10) and Fine Particulate Matter (PM2.5):

PM_{10} and $PM_{2.5}$ consist of suspended dust particles less than 10 or 2.5 microns, respectively. PM_{10} is generally fugitive dust kicked up from mobile sources or wind. $PM_{2.5}$ is emitted from combustion processes or is formed as a secondary pollutant through chemical reactions. Most particulate matter is produced by fuel combustion, motor vehicle travel, and construction activities. Children, elderly, and persons with pre-existing respiratory or cardiovascular disease are more susceptible to the effects of high PM_{10} and $PM_{2.5}$ levels. Potential health effects include skin, eye and throat irritation, respiratory infections, and asthma attacks. Daily fluctuations in $PM_{2.5}$ concentration levels have been tied to hospital admissions, school and kindergarten absences, a decrease in respiratory lung volumes in normal children, and increased medication use. Recent studies show lung function in children is reduced with long-term exposure to particulate matter.

13.3.1.3 Carbon Monoxide (CO):

CO is a colorless, odorless gas produced by the incomplete combustion of fuels. CO concentrations tend to be the highest near congested transportation corridors and intersections, especially during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. Elevated concentrations of CO weaken the heart's contractions and lower the amount of oxygen carried by the blood. Inhalation of moderate levels of CO can cause nausea, dizziness, and headache, while inhalation of high levels can be fatal. CO reduces the amount of oxygen in the blood, causing heart difficulties in people with chronic diseases, reduced lung capacity and impaired mental abilities. Individuals most at risk include fetuses, patients with heart disease, and patients with chronic hypoxemia (oxygen deficiency).

13.3.1.4 Nitrogen Dioxide (NO2):

NO_2 is a byproduct of fuel combustion. The principal form of nitrogen oxide produced by combustion is nitric oxide (NO), which reacts quickly to form NO_2, creating the mixture of NO and NO_2 commonly called NO_x. NO_2 results in reduced visibility. NO_2 also contributes to the formation of ground-level ozone and $PM_{2.5}$. Major sources of NO_x include power plants, large industrial facilities, and motor vehicles. NO_x irritates the nose and throat and increases susceptibility to respiratory infections, especially in asthmatics.

13.3.1.5 Sulfur Dioxide (SO2):

SO_2 is a colorless, extremely irritating gas or liquid that is produced as a result of burning high sulfur-content oils and coal, and from chemical processes occurring at chemical plants and refineries. Major sources of SO_2 include power plants and large industrial facilities. SO_2 emissions aggravate lung diseases, especially bronchitis, and constrict breathing passages, especially in asthmatics and during moderate to heavy exercise. SO_2

can cause wheezing, shortness of breath, and coughing. High levels of particulate appear to worsen the effect of SO_2, and long-term exposures to both pollutants lead to higher rates of respiratory illness.

13.3.1.6 Lead:

Lead occurs in the atmosphere as particulate matter. The primary sources of airborne lead include the manufacturing and recycling of batteries, paint, ink, ceramics, ammunition, and secondary lead smelters. From 1970 to 2005, lead emissions in the US dropped by 99 percent (USEPA 2012). Fetuses, infants, and children are sensitive to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased levels of lead are associated with increased blood pressure. Lead poisoning can cause anemia, lethargy, seizures, and death.

13.3.1.7 Toxic Air Contaminants (TACs):

TACs are a diverse group of air pollutants including both organic and inorganic chemical substances emitted from sources including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research facilities. TACs differ from the above criteria pollutants in that ambient air quality standards have not been established for TACs. TACs are capable of causing chronic and acute health effects. These effects include increased risk of cancer. The majority of the estimated health risks from TACs can be attributed to a relatively few compounds, the most important being particulate matter from diesel-fueled engines.

13.3.1.8 Odors:

Odors are not regulated under the Federal or State Clean Air Acts; however, they are considered under CEQA. Odors can potentially affect human health in several ways. Odorant compounds can irritate the eye, nose, and throat, which can reduce respiratory volume. VOCs that cause odors can stimulate sensory nerves to cause neurochemical changes that might influence health, for instance, by compromising the immune system. Unpleasant odors can also trigger memories or attitudes, causing cognitive and emotional effects such as stress.

San Joaquin Valley Air Pollution Control District

The SJVAPCD is the agency principally responsible for comprehensive air pollution control in the Air Basin; as such, it is responsible for preparing attainment plans for each nonattainment criteria pollutant for which the district does not meet the standard. The SJVAPCD has developed plans and established strategies to attain State and Federal ozone and PM standards. To meet Federal CAA requirements, the SJVAPCD adopted the following plans: 2014 8-hour Ozone Implementation Plan; 2013 Revoked 1-hour Ozone Plan; 2012 $PM_{2.5}$ Plan; 2007 Ozone Plan, and the 2007 PM_{10} Maintenance Plan.

These plans include regulatory and incentive-based measures to reduce emissions of ozone and PM precursors throughout the San Joaquin Valley. The current rules and regulations are published on the SJVAPCD's website and include regulations regarding generation of dust during construction activities (Rule 8021) and permitting requirements for new and modified stationary sources of air emissions (Rule 2201). Additionally, Rules 4550 (Conservation Management

Practices) and 3190 (Conservation Management Practices Plan Fee), adopted in 2004, require farmers with over 100 acres of contiguous lands to prepare and implement Conservation Management Practices relating to agricultural air quality in an effort to reduce fugitive dust emissions and reach attainment status on PM_{10}. Fugitive dust due to construction or earth moving activities are addressed in Rule 8021 and 8081, which require control measures to limit dust emissions. Lastly, Rule 4702 (Internal Combustion Engines) requires diesel engines to meet compliance standards (SJVAPD 2015).

13.3.2 Discussion

a-e. **No impact.** Air emissions in the area of the proposed Project are regulated by the SJVAPCD. Implementation of the proposed Project would not result in the emission of additional pollutants or create new objectionable odors. Therefore, no impact would occur.

13.4 Biological Resources

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal wetlands, etc.), through direct removal, filling, hydrological interruption or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

13.4.1 Existing Setting

The proposed Project area includes more than 10,000 acres and facilities such as the San Luis Reservoir, SLC and agricultural lands within the Widren, Firebaugh Canal Water District, and WWD that would receive portions of their irrigation water from the proposed Project. The only federally listed species that may occur in the area are the Buena Vista Lake shrew, San Joaquin kit fox, blunt-nosed leopard lizard, giant garter snake, California least tern, and San Joaquin woolly-threads. Of these, the only species that can use agricultural lands at all is the San Joaquin kit fox, which can forage, but not den, in crop fields where the fields lie close to native lands (Warrick et al. 2007). The proposed Project area consists of agricultural lands.

A complete list of federally listed species and critical habitat is summarized in Table 3 below.

Table 2.
Federally Listed Species and Critical Habitat

Common Name	Scientific Name	Federal Listing Status	Critical Habitat	Range/ Habitat Use	Occurrence in Project Area	Impacts
Conservancy Fairy Shrimp	*Branchinecta Conservation*	Endangered	Designated	Found in turbid vernal pools	Vernal pools are absent from the Project area	No impact on the species or critical habitat
Longhorn Fairy Shrimp	*Branchinecta Longiantenna*	Endangered	Designated	Occurs in multiple types of vernal pools	Vernal pools are absent from the Project area	No impact on the species or critical habitat
Vernal Pool Fairy Shrimp	*Branchinecta Lynchi*	Threatened	Designated	Occurs in a variety of vernal pools or other depressions that have a similar hydrology	Vernal pools and other similar depressions are absent from the Project area	No impact on the species or critical habitat
Valley Elderberry Longhorn Beetle	*Desmocerus Californicus Dimorphus*	Threatened	Designated	Requires elderberry shrubs with stems one inch or greater in diameter at ground level	Elderberry shrubs do not occur around the edge of San Luis Reservoir or in actively farmed lands or at Meyers Water Bank	No impact on the species or critical habitat

Common Name	Scientific Name	Federal Listing Status	Critical Habitat	Range/ Habitat Use	Occurrence in Project Area	Impacts
Vernal Pool Tadpole Shrimp	*Lepidurus Packardi*	Endangered	Designated	Found in a wide range of vernal pool types, has a disjunct range	Vernal pools are absent from the Project area	No impact on the species or critical habitat
North American Green Sturgeon	*Acipenser Medirostris*	Threatened	Designated	Inhabits the Sacramento-San Joaquin Delta and spawns in the Sacramento River	The proposed Project area is outside of the species range.	No impact on the species or critical habitat
Owens Tui Chub	*Gila Bicolor Snyderi*	Endangered	Designated	Found only in a limited number of populations in the Owens River Valley where it inhabits standing water or low-gradient rivers and streams	The proposed Project area is outside of the species range	No impact on the species or critical habitat
Delta Smelt	*Hypomesus Transpacificus*	Threatened	Designated	Occurs in the Sacramento-San Joaquin Delta	The proposed Project area is outside of the species range	No impact on the species or critical habitat
Lahontan Cutthroat Trout	*Oncorhynchus Clarkii Henshawi*	Threatened	None	Found in cold-water habitats in the Lahontan Basin	The proposed Project area is outside of the species range	No impact on the species
Paiute Cutthroat Trout	*Oncorhynchus Clarkii Seleniris*	Threatened	None	Currently found in a few populations in the Inyo and Sierra National Forests; eliminated from its historic range within the Humboldt Tolyabe National Forest	The proposed Project area is outside of the species range	No impact on the species

Common Name	Scientific Name	Federal Listing Status	Critical Habitat	Range/ Habitat Use	Occurrence in Project Area	Impacts
Central Valley Steelhead	*Oncorhynchus Mykiss*	Threatened	Designated	Occurs in the Sacramento-San Joaquin Delta, and spawns and rears in parts of the Sacramento and San Joaquin River systems	The proposed Project area is outside of the species range	No impact on the species or critical habitat
Central Valley Spring-Run Chinook Salmon	*Oncorhynchus Tshawytscha*	Threatened	Designated	Occurs in the Sacramento-San Joaquin Delta, and spawns and rears in parts of the Sacramento River system; is being reintroduced to the upper San Joaquin River	The proposed Project area is outside of the species range	No impact on the species or critical habitat
Sacramento River Winter- Run Chinook Salmon	*Oncorhynchus Tshawytscha*	Endangered	Designated	Occurs in the Sacramento-San Joaquin Delta, and spawns and rears in parts of the Sacramento River system	The proposed Project area is outside of the species range	No impact on the species or critical habitat
California Tiger Salamander (central population)	*Ambystoma Californiense*	Threatened	Designated	Breeds in vernal pools and other similar ponds and uses rodent burrows in surrounding grasslands for refugia during the non-breeding season	Vernal pools and other suitable breeding ponds do not occur in the proposed Project area	No impact on the species or critical habitat
California Red-Legged Frog	*Rana Draytonii*	Threatened	Designated	Uses foothill streams and ponds; has been eliminated from the San Joaquin Valley floor. The species and its critical habitat occur just to the west of San Luis Reservoir, but not in the reservoir itself	The proposed Project area does not include any suitable habitat for this species and is outside of its critical habitat	No impact on the species or critical habitat

Common Name	Scientific Name	Federal Listing Status	Critical Habitat	Range/ Habitat Use	Occurrence in Project Area	Impacts
Mountain Yellow-Legged Frog (northern population)	*Rana Muscosa*	Endangered	Proposed	Occurs in high mountain streams in parts of the Sierra Nevada (south of the Monarch Divide), mostly on National Park or National Forest lands	The proposed Project area is outside of the species range	No impact on the species or critical habitat
Sierra Nevada Yellow-Legged Frog	*Rana Sierrae*	Endangered	Proposed	Occurs in high mountain streams in parts of the Sierra Nevada (north of the range of the mountain yellow-legged frog), and parts of the eastern slope of the Sierra Nevada.	The proposed Project area is outside of the species range	No impact on the species or critical habitat
Yosemite Toad	*Anaxyrus Canorus*	Threatened	Proposed	Uses wet meadows and surrounding forest in parts of the Sierra Nevada	The proposed Project area is outside of the species range	No impact on the species or critical habitat
Blunt-Nosed Leopard Lizard	*Gambelia Sila*	Endangered	None	Found in alkali scrub and arid grassland habitat in parts of the San Joaquin Valley and adjacent areas (such as Carrizo Plain).	Blunt-nosed leopard lizards may occur on the western- most edges of the CVP service area, but not on actively- farmed lands	No impact; the water involved in the proposed Project cannot be used to bring native lands into production
Giant Garter Snake	*Thamnophis Gigas*	Threatened	None	Found in and near wetland habitat in Mendota Pool and the Grasslands	Occurs at Mendota Wildlife Area, which receives water from the Delta-Mendota Canal.	No impact on the species or critical habitat

Common Name	Scientific Name	Federal Listing Status	Critical Habitat	Range/ Habitat Use	Occurrence in Project Area	Impacts
Western Snowy Plover	*Charadrius alexandrinus nivosus*	Threatened	Designated	A coastal shorebird; occasionally found inland at evaporation ponds	Not known to occur in the proposed Project area, which is outside of the typical range.	No impact on the species or critical habitat
Western Yellow-Billed Cuckoo	*Coccyzus Americanus Occidentalis*	Threatened	Proposed	Uses extensive cottonwood-willow forests; currently restricted in California to a portion of the Sacramento River, the Kern River, and the Colorado River	The species could fly overhead on its migration to and from breeding habitat along the Sacramento River and wintering grounds in South America but would not otherwise use the proposed Project area.	No impact on the species or critical habitat
California Condor	*Gymnogyps Californianus*	Endangered	Designated	Forages for carrion in large expanses of foothill and oak savanna ringing the southern San Joaquin Valley floor.	This species habitat does not occur in the proposed Project area and there are no records of its occurrence in the area.	No impact on the species or critical habitat

Common Name	Scientific Name	Federal Listing Status	Critical Habitat	Range/ Habitat Use	Occurrence in Project Area	Impacts
California Least Tern	*Stemula Antillarum Browni*	Endangered (recommended for downlisting to Threatened)	None	Normally nests on sandy coastal habitat and forages for small fish. Sometimes can be found inland where open water with small fish is found.	Monitoring of the proposed Project area did not result in any least tern observations.	No impact. Least terns would not be affected because the proposed Project would not contribute to any drainage that could contaminate potential foraging habitat.
Giant Kangaroo Rat	*Dipodomys Ingens*	Endangered	None	Occurs in arid grasslands and saltbush scrub in Kern County and a few other south San Joaquin Valley locations. The closest population to the proposed Project area is the Kettleman Hills in Kings County.	Does not occur in the proposed Project area	No impact on the species
Fresno Kangaroo Rat	*Dipodomys Nitratoides Exilis*	Endangered	Designated	Uses alkali sink and arid grassland habitat; historical occurrences at and near the Alkali Sink Ecological Reserve and Madera Ranch. A possible Fresno/Tipton hybrid population may still occur at Lemoore Naval Air Station	Does not occur in the proposed Project area.	No impact on the species or critical habitat

Common Name	Scientific Name	Federal Listing Status	Critical Habitat	Range/ Habitat Use	Occurrence in Project Area	Impacts
Tipton Kangaroo Rat	*Dipodomys Nitratoides*	Endangered	None	Generally, only occurs south of the proposed Project area, although there may be a very small Fresno/Tipton hybrid population near the proposed Project area (see above).	Does not occur in the proposed Project area.	No impact on the species
Sierra Nevada Bighorn Sheep	*Ovis Canadensis Californiana*	Endangered	Designated	Found in the remote arid mountain habitat in the southern Sierra Nevada	The proposed Project area is outside of the species range	No impact on the species or critical habitat
Buena Vista Lake Shrew	*Sorex Ornatus Relictus*	Endangered	Designated	Uses riparian/wetland habitat. Critical habitat occurs near, but outside of WWD.	Occurs at Kern National Wildlife Refuge	No impact on the species or critical habitat.
San Joaquin Kit Fox	*Vulpes Macrotis Mutica*	Endangered	None	Prefers saltbush scrub and arid grassland habitat but can use agricultural lands for foraging within a mile or so of occupied habitat.	Records of the species are known from the proposed Project area.	No impact. The proposed Project would not result in any land use changes.
Fisher	*Pekania Pennanti*	Proposed Threatened	None	Occupies montane forest habitat	The proposed Project area is outside of the species range	No impact on the species
Mariposa Pussy-Paws	*Calyptridium Pulchellum*	Threatened	None	Occurs on decomposed granite in foothills of south-central Sierra Nevada	The proposed Project area is outside of the species range	No impact on the species

Common Name	Scientific Name	Federal Listing Status	Critical Habitat	Range/ Habitat Use	Occurrence in Project Area	Impacts
San Benito Evening-Primrose	*Camissonia Benitensis*	Threatened	None	Found on serpentine-derived alluvial soils in western Fresno and San Benito Counties	The proposed Project area is outside of the species range	No impact on the species
Succulent Owl's-Clover	*Castilleja Campestris* ssp. *Succulent*	Threatened	Designated	Occurs in vernal pool habitat in southern Sierra Nevada foothills	Vernal pools are absent from the proposed Project area.	No impact on the species or critical habitat
California Jewel Flower	*Caulanthus Californicus*	Endangered	None	Occurs in saltbush scrub and arid grasslands; there are three known naturally occurring populations: Carrizo Plain, Santa Barbara Canyon, and the Kreyenhagen Hills in Fresno County.	Does not occur in the proposed Project area.	No impact on the species
Hoover's Spurge	*Chamaesyce Hooveri*	Threatened	Designated	Found in vernal pools (usually deeper pools) in the Sierra Nevada foothills	Vernal pools are absent from the proposed Project area.	No impact on the species or critical habitat
Palmate-Bracted Bird's-Beak	*Cordylanthus Palmatus*	Endangered	None	Occurs in alkali sink habitat	Suitable habitat no longer occurs in the proposed Project area	No impact on the species
San Joaquin Woolly-Threads	*Monolopia Congdonii*	Endangered	None	Found in arid grasslands and saltbush scrub habitat	May still occur on the western fringes of CVP service area.	The proposed Project would not result in any land use change.

Common Name	Scientific Name	Federal Listing Status	Critical Habitat	Range/ Habitat Use	Occurrence in Project Area	Impacts
Colusa Grass	*Neostapfia Colusana*	Threatened	Designated	Occurs in vernal pools: some of the known locations are spread far apart and it may occur in other localities where it hasn't been verified yet.	Vernal pools are absent from the proposed Project area.	No impact on the species or critical habitat
San Joaquin Valley Orcutt Grass	*Orcuttia Inaequalis*	Threatened	Designated	Found in vernal pools in the southern Sierra Nevada foothills	Vernal pools are absent from the proposed Project area.	No impact on the species or critical habitat
Hairy Orcutt Grass	*Orcuttia Pilosa*	Endangered	Designated	Occurs in vernal pools. Known both from the northeastern Sacramento Valley and the southern Sierra Nevada foothills.	Vernal pools are absent from the proposed Project area.	No impact on the species or critical habitat
Hartweg's Golden Sunburst	*Pseudobahia Bahifolia*	Endangered	None	Found in grasslands and oak woodlands on the east side of the San Joaquin Valley and foothills. Usually on fine-textured soils with Mima mounds present.	The proposed Project area is outside of the species range	No impact on the species
San Joaquin Adobe Sunburst	*Pseudobahia Peirsonii*	Threatened	None	Found in grasslands along the eastern side of the southern San Joaquin Valley	The proposed Project area is outside of the species range	No impact on the species
Keck's Checker-Mallow	*Sidalcea Keckii*	Endangered	Designated	Found in grasslands in the Sierra Nevada foothills	The proposed Project area is outside of the species range	No impact on the species or critical habitat
Greene's Tuctoria	*Tuctoria Greenei*	Endangered	Designated	Found in different types of vernal pools	The proposed Project area is outside of the species range	No impact on the species or critical habitat

13.4.2 Discussion

a-f. **No Impact.** Implementation of the proposed Project would involve the operations of facilities on previously developed agricultural lands. There are no sensitive natural communities identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service located in the vicinity of the proposed Project. Nor are there marshes, vernal pools, or federally protected wetlands in the proposed Project vicinity. Therefore, there would be no impacts to sensitive species, natural communities, vernal pools, marshes, or wetlands as a result of implementation of the proposed Project.

Under the proposed Project, the water would help to keep agricultural lands in production, but no native lands or lands fallowed and untilled for three or more years could be brought into production. Therefore, the proposed Project would not interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of a native wildlife nursery. The proposed Project would not conflict with any local policies or ordinances protecting biological resources or conflict with any Habitat Conservation Plans or Natural Community Conservation Plans currently in place Therefore, no impacts would occur.

13.5 Cultural Resources

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

13.5.1 Existing Setting

Cultural resources on the west side of the San Joaquin Valley are generally prehistoric in nature and may include remnants of native human populations that existed before European settlement. As the San Joaquin Valley is rich in historic and prehistoric cultural resources, it is possible that undiscovered cultural resources remain within the proposed Project area. Known cultural resources in these areas include historic features of the built environment, primarily those of the CVP, some of which have been determined eligible for inclusion in the National Register and have been prepared for inclusion through a multiple property nomination. Existing features of the proposed Project are allocated on roads, disturbed embankments and along the slopes of the Delta-Mendota Canal and Firebaugh's distribution system, areas not likely to support either prehistoric or historic resources due to past grading and frequent maintenance activities.

Portions of the proposed Project area are situated in sediments deposited from the latest Holocene that are considered to have high potential for buried deposits. Although the Central Valley has been occupied by human populations since prehistoric times, the predominantly agricultural use of the area for more than a century has caused a large amount of deep ground disturbance (e.g., deep ripping) and disruption that may have disturbed undiscovered Native American cultural sites. In particular, deep excavation and place of fill during construction of the Delta-Mendota Canal may have disturbed or destroyed subsurface cultural resources along and adjacent to the canal.

13.5.2 Discussion

a-d. **No Impact.** The proposed Project would not cause a substantial adverse change in the significance of a historical resource given that it involves the use of existing infrastructure for its intended purposes. Given previous disturbance related to past grading and excavation for construction of canals and roads, it is extremely unlikely that undiscovered archaeological, paleontological, cultural resources, or human remains would be encountered during operation of the Project. Therefore, no impacts would occur.

13.6 Geology and Soils

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death, involving:				

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒

13.6.1 Existing Setting

The proposed Project is located in the Great Valley geomorphic province, which is an alluvial plain about 400 miles long and 50 miles wide. The area is not located in an Alquist-Priolo Earthquake Fault Zone or in a mapped landslide or liquefaction zones.

Subsidence

Land subsidence is the lowering of the land surface elevation that results from changes that take place underground. The most common causes of land subsidence from human activity are pumping water, oil, and gas from underground reservoirs; collapse of underground mines; drainage of organic soils; and initial wetting of dry soils. Land subsidence in the western and

southern parts of the Central Valley has resulted primarily from groundwater extraction from the region's lower aquifer.

Groundwater pumping can result in compaction of the materials that make up the subsurface, potentially resulting in land subsidence. Compaction can be "elastic" or "inelastic," as defined below:

- "Elastic" compaction is a relatively immediate response to water level decline that can be reversed by expansion when groundwater levels recover. Elastic compaction is temporary in nature and does not contribute to long-term land subsidence.
- "Inelastic" compaction occurs when compaction during the irrigation season or other event(s) is greater than the subsequent expansion that occurs when groundwater levels recover. Inelastic compaction generally occurs over a longer time horizon and is not reversible, resulting in permanent land subsidence.

The aquifer system on the westside of the San Joaquin Valley in the vicinity of the proposed Project has both unconfined and confined parts caused by alternating layers of coarse and fine-grained sediments. Water in the coarse-grained, unconfined, or water-table aquifers can be extracted or recharged easily and causes only minor 'elastic' compaction reflected as seasonal subsidence and rebound of water levels and the land surface. Although significant water is available from the deeper confined aquifers, groundwater wells that withdraw from these aquifers can cause drainage of the fine-grained confining layers called aquitards and result in both elastic and inelastic compaction. In general, if water levels are not drawn too low, when pumping ceases water recharges the aquitards and their structure expands. However, if water levels are drawn too low, then an irreversible compaction of the fine-grained aquitards occurs. The water cannot recharge the layers, causing permanent subsidence and loss of some groundwater storage capacity (NASA 2015).

Most subsidence in the San Joaquin Valley has occurred due to groundwater extraction from below the Corcoran clay layer, present in some layers at depths of 100 to 400 feet below the surface, resulting in compaction and eventual subsidence in and below this layer. This is an ongoing concern in areas such as WWD, where most groundwater wells are perforated below the Corcoran clay layer, potentially contributing to continued compaction and subsidence in this depth zone.

In the early 1970s, groundwater pumping in the San Joaquin Valley decreased based on availability of surface water imports brought to the region by the CVP. The shift from using local groundwater to using CVP surface water resulted in a steady recovery of groundwater levels and a reduced compaction rate. However, reduced availability of CVP water during drought events in 1976-77, 1986-92, and 2007-09 resulted in increased groundwater pumping in the Valley, which led to reduced groundwater levels that reached near-historic lows and associated compaction (USGS 2013).

13.6.2 Discussion

a. **No Impact**. The proposed Project would primarily involve the use of existing infrastructure.

Although the construction of the replacement groundwater well would involve minor excavation and ground disturbance and the use of well drilling equipment, the work would be performed in a manner with existing health and safety regulations. Therefore, their proposed Project would not expose people or structures to adverse effects involving rupture of a known earthquake fault, strong seismic ground shaking, ground failure, liquefaction, or landslides.

b. **No Impact**. The proposed Project would not include activities that could result in substantial erosion or the loss of topsoil. Under the proposed project water would be transferred or exchanged via existing waterways and infrastructure and would be used for irrigation of agricultural lands currently being served by the CVP, including lands in the Firebaugh Canal Water District and the WWD service areas. The proposed Project would potentially keep some farmland from becoming fallowed due to drainage impacts or drought conditions. Therefore, the proposed Project could potentially reduce the risk of soil erosion or loss of topsoil that may otherwise occur. Thus, there would be less than significant impacts to substantial erosion or the loss of topsoil as a result of the proposed Project.

c. **Less than Significant**. Data collected during the pilot project demonstrates that within Widren the proposed Project would have minimal, if any, impact on subsidence within Widren or the surrounding area. The proposed Project would include the transfer or exchange of water to WWD for use on lands adjacent to the San Luis Canal (California Aqueduct), which are currently irrigated with groundwater extracted from the lower, confined aquifer in the Westside Subbasin. The Westside Subbasin has been designated by the Department of Water Resources as a critically over drafted basin. Areas within WWD have historically experienced significant subsidence resulting from the extraction of groundwater. Therefore, by reducing demands on groundwater pumped from the Westside Subbasin, the proposed Project could potentially reduce the risk of subsidence within WWD and could potentially protect the integrity of existing infrastructure. Therefore, the proposed Project would not expose people or structures to potential substantial adverse effects from seismic-related ground failure, lateral spreading, liquefaction, or collapse. Therefore, the impacts would be less than significant.

d. **No Impact**. The construction and operation of the replacement groundwater well will be undertaken consistent with existing regulations and will not create substantial risk to life or property. Therefore, there would be no impact.

e. **No Impact**. The proposed Project would not require the use of septic tanks or wastewater disposal systems. In addition, the proposed Project would not impact any existing sanitary sewer lines. Therefore, there would be no impact on septic systems or alternative wastewater treatment systems as a result of the proposed Project.

13.7 Greenhouse Gas Emissions

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

13.7.1 Existing Setting

Global climate change can be measured by changes in wind patterns, storms, precipitation, and temperature. Scientific consensus has identified human-related emissions of greenhouse gases (GHGs) above natural levels as a significant contributor to global climate change. GHGs are emissions that trap heat in the atmosphere and regulate the Earth's temperature, and include water vapor, CO2, methane (CH4), nitrous oxide (N2O), ground level ozone, and fluorinated gases, such as chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), and halons. The potential impacts of climate change include severe weather patterns, flooding, reduced quality and availability of water, sea level rise, and beach erosion. Primary activities associated with GHG emissions include transportation, operation of utilities (e.g., power generation and transport), industrial activities, manufacturing, agriculture, and residential uses. End-use sector sources of GHG emissions in California are as follows: transportation (39 percent), industry (22 percent), electricity generation (11 percent in State, 5 percent imports), agriculture and forestry (8 percent), residential (8 percent) and commercial (6 percent) (CARB 2023).

San Joaquin Valley Air Pollution Control District

The SJVAPCD, the agency principally responsible for comprehensive air pollution control in the San Joaquin Valley Air Basin, adopted the Climate Change Action Plan (CCAP) in 2008, which called for guidance to assist SJVAPCD staff, valley businesses, land use agencies, and other permitting agencies in addressing GHG emissions as part of the CEQA process. In response, the SJVAPCD adopted a district policy and guidance in December 2009 to provide direction assessing and reducing the impacts of project specific GHG emissions on global climate change from stationary sources. The policy is detailed in *District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency* (District

Policy) and guidance regarding this policy is provided in *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA*.

The District Policy establishes the process to evaluate the significance of action-specific GHG emission impacts on global climate change and to establish Best Performance Standards (BPSs) to reduce action-specific GHG emissions. Use of BPSs is a method of streamlining the CEQA process of determining significance and is not a required emission reduction measure. Actions implementing BPSs are determined to have a less than cumulatively significant impact. Otherwise, demonstration of a 29-percent reduction in GHG emissions, from business-as-usual, is required to determine that an action would have a less than cumulatively significant impact. The SJVAPCD is developing BPSs for Full-Time Agricultural Operations Spark-Ignited Internal Combustion Engines Serving Irrigation Pumps but has not yet posted draft or approved BPSs for these sources. The SJVAPCD has not officially adopted a significant threshold for generation of GHGs from water exchanges to assess the level at which an action's incremental contribution is considered cumulatively considerable.

The District Policy applies to projects for which the SJVAPCD has discretionary approval authority over the Project and serves as the lead agency for CEQA purposes. However, land use agencies can refer to it as guidance for projects that include stationary sources of emissions. The guidance does not limit a lead agency's authority in establishing its own process and guidance for determining significance of action-related impacts on global climate change.

13.7.2 Discussion

a. **Less than Significant.** Other than energy for operations of the reverse osmosis treatment plant, the proposed Project would not represent a new source of greenhouse gas emissions. The source of power for operations of the reverse osmosis treatment plant is Pacific Gas and Electric, and data collected during the pilot project indicate it requires approximately 1200 kwH to produce an acre-foot of treated water. Approximately 375 kwH per acre-foot is required to extract groundwater from wells that would be operated by Widren to extract groundwater for treatment. In the context of energy consumed to extract groundwater for irrigation in Fresno County, impacts on greenhouse gas emissions resulting from these additional energy demands are less than significant. Moreover, any impacts on greenhouse gas emissions resulting from an increase in energy demands for the operations of these facilities will be offset by a reduction in the use of energy to extract groundwater in that portion of WWD's service area in which transferred or exchanged water will substitute for the use of groundwater. In that area of WWD the extraction of an acre-foot of groundwater requires approximately 1680 kwH due to the depth to groundwater.

While the proposed Project does involve potential water transfers/exchanges and the volume of water moved through Dos Amigos Pumping Plant may be increased by up to 2,500 acre-feet annually, thereby incrementally increasing energy demand and GHG emissions, such minor incremental increases cannot be reasonably forecasted, and it would be speculative to do so. In addition, impacts related to the construction of the replacement groundwater well and installation of the additional reverse osmosis treatment unit would be minor and temporary in nature and would generate insignificant sources of greenhouse gas emissions. Therefore, potential impacts related to greenhouse gas emissions would be less than significant.

b. **No Impact.** Fresno County does not have specific regulations regarding reducing GHG emissions and the proposed Project would not conflict with Climate Change Action Plan adopted by the SJVAPCD. Therefore, there will be no impact.

13.8 Hazards and Hazardous Materials

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan area or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

13.8.1 Existing Setting

There are no schools within the vicinity of Widren's service area. Nor are there any airports.

The Hazardous Waste and Substances Sites List (Cortese List) is compiled by the California Department of Toxic Substances Control (DTSC) in accordance with Section 65962.5 of the California Government Code. A search of the Cortese List and a search for sites with reported hazardous material spills, leaks, ongoing investigations, and/or remediation near the Project sites were performed using the DTSC online EnviroStor database (DTSC 2015). In addition, a search was conducted using the State Water Resources Control Board's (SWRCB's) GeoTracker database (SWRCB 2015). LUST and other cleanup sites are also located in the WWD service area.

13.8.2 Discussion

a–b. **No Impact.** During operation of the reverse osmosis treatment plant for the proposed Project, vehicle fuels will be used to transport operators to the plant. The use of these materials would be in accordance with applicable federal, state, and local health and safety regulations. Agricultural activities could involve the use and storage of hazardous materials, however, use and storage would not increase as a result of the proposed Project. Therefore, no impact would occur.

c. **No Impact.** There are no schools within or adjacent to Widren's service area, and the proposed Project would not emit hazardous emissions or handle hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school. Therefore, no impact would occur.

d. **No Impact.** The proposed Project would not occur on a hazardous materials site that would create a risk to the public or the environment. Therefore, no impact would occur.

e-f. **No Impact**. There are no airports or private airstrips within close proximity of the proposed Project area. The proposed Project would not create a safety hazard associated with airport operations for people residing or working in the Project area. Therefore, no impacts related to airport operations would occur as a result of the proposed Project.

g. **No Impact.** The proposed Project would not impair or physically interfere with an adopted emergency response plan or a local, state, or federal agency's emergency evacuation plan. Operationally, the Project would not materially change the characteristics of the Project site in a way that would alter emergency response or evacuation plans. Therefore, no impacts would occur.

h. **No Impact.** The California Department of Forestry and Fire Protection (CAL FIRE) classifies the area as a moderate fire hazard severity zone. The proposed Project would not add structures that could be exposed to fire risk, and no features of the proposed Project would change the fire hazard severity zones. Therefore, no impacts related to exposing people or structures to a significant risk of loss, injury or death involving wildland fires would occur as a result of the proposed Project.

13.9 Hydrology and Water Quality

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre- existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☐	☐	☒

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or another flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of a failure of a levee or dam?	☐	☐	☐	☒
j) Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami or mudflow?	☐	☐	☐	☒

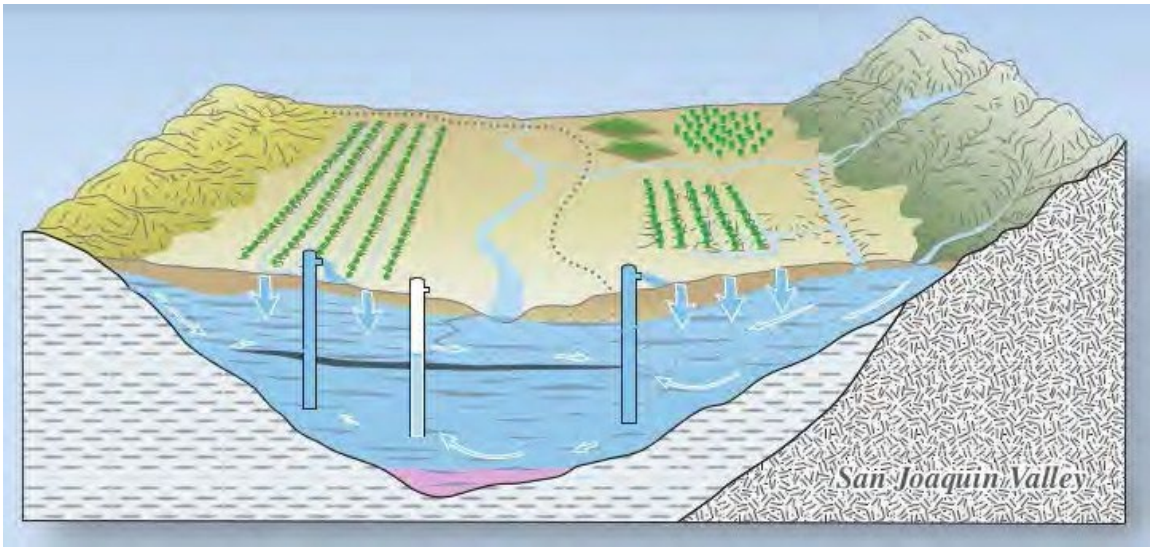
13.9.1 Existing Setting

Regional Groundwater Basin

The proposed Project is located within the Delta-Mendota Subbasin, which the California Department of Water Resources has designated as critically over drafted. Groundwater provides approximately 37 percent (~509,687 acre-feet) of overall water supplies from 7,132 wells in the Delta-Mendota Subbasin (California Department of Water Resources 2018b). The sediments are comprised of mixtures of gravel, sand, silt, and clay, which form semi-confining and confining layers that affect drainage and vertical groundwater flows within the basin. Within this basin, a Corcoran clay layer extends across most of this basin at 200 to 500 feet below ground surface (bgs) and ranges from 20 to 200 feet in thickness (Westlands 2014). The Corcoran clay layer separates the basin into two water-bearing zones in the majority of the basin: the upper and lower aquifers. However, it is not continuous within the Delta-Mendota Subbasin and diminishes near the San Luis Canal. SLC (Westlands 2014; 1996). Recharge sources in the basin includes runoff and percolation from several rivers, subsurface flows, Coast Range seepage and streams, and percolation from surface irrigation.

Groundwater throughout this basin is suitable for agricultural and urban use. Primary constituents of concern are TDS, arsenic, and nitrates. Groundwater within Widren contains high concentrations of TDS due to salts in sediment layers and the percolation of stream flows carrying marine deposits. In regions where the Corcoran Clay layer is present, groundwater quality is generally better below the clay layer as it limits the migration of water from shallow depths that generally contain high TDS concentrations.

Delta-Mendota Subbasin



The upper aquifer lies above the Corcoran clay layer (shown in dark blue), while the lower aquifer lies below this layer. Wells draw from both the upper and deep aquifer. The lower aquifer is considered to be a confined aquifer. Natural replenishment or recharge of the groundwater basin comes from percolation from rainfall and inflow from rivers (blue arrows); however, due to the impermeable Corcoran layer, the lower confined aquifer is generally recharged from inflow from the east and west edges of the Valley (white arrows; USGS 2009).

Groundwater Levels and Overdraft. Widren lies entirely within the Delta-Mendota Subbasin, from which water is extracted by multiple users from both the upper and lower aquifers, which are separated by the Corcoran clay layer. Excessive pumping from the lower aquifer has caused declining water levels in the Delta-Mendota Subbasin, and the California Department of Water Resources has designated the Subbasin as a Critically Over drafted Basin/Subbasin. (California's Groundwater Update 2020, (Bulletin 118) DWR 2021) Within the Delta-Mendota Subbasin there are regions in which overdraft has within the last 15 years contributed to significant subsidence. (Faust, Water availability and land subsidence in the Central Valley, California, USA, 2015.)

However, data collected by Widren during implementation of the pilot project demonstrates the groundwater that would be extracted under proposed Project is in fact subsurface drainage water, and with appropriate conditions, extractions up to 2,500 acre-feet will not contribute to overdraft and will not result in subsidence. (Appendix Figure A-2.)

Groundwater Quality. Groundwater quality in the upper aquifer within the Widren service area is known to have poor groundwater quality due to salts and trace elements leaching from the soils into the shallow depths of the upper aquifer. Evaporation and poor drainage in Widren and irrigated areas upslope of Widren due to shallow clay layers and limited permeability also contribute to conditions of high salinity within the region's groundwater. Shallow groundwater in many areas have TDS concentrations exceeding 7,100 mg/L, with the highest concentration recorded as 12,200 mg/L. With increases in depth, TDS concentrations decrease, but are still generally high in the upper aquifer. High TDS concentrations impair use of groundwater for much of the upper aquifer, especially at shallow depths (DWR 2003). Below the Corcoran Clay layer, TDS concentrations are lower than in the upper aquifer, and contain TDS concentrations between 500 - 1,500 mg/L.

Widren's landowners currently operate under the State Water Resources Control Board's Waste Discharge Requirements General Order (Order R5-2015-0095) for growers in the Grassland Drainage Area. This Order is part of the Irrigated Lands Regulatory Program and regulates discharge to groundwater.

13.9.2 Discussion

a & f**. No Impact** The proposed Project would consist of (1) pumping up to 2,500 acre-feet of poor quality subsurface drainage water from the shallow aquifer; (2) treating the subsurface drainage water through reverse osmosis; (3) blending effluent and backflush water produced by the reverse osmosis treatment plant with groundwater for irrigation of salt tolerant crops in the Reuse Area; (4) discharging treated water into Firebaugh Canal Water District's existing conveyance system or the Delta-Mendota Canal for delivery to irrigators currently being served by the CVP; and (5) transferring/exchanging water to WWD for the irrigation of lands immediately adjacent to the San Luis Canal (California Aqueduct).

Key constituents for testing would include TDS, metals, organic chemicals, and other potential pollutants. Monitoring data collected during the pilot project indicates that implementation of the proposed Project would not result in the violation of any water quality standards or waste discharge requirements or otherwise substantially degrade water quality. Therefore, there would be no impact.

b. **No Impact**. The proposed Project would result in no more than 2,500 acre-feet of groundwater pumped annually from the upper, unconfined aquifer. Monitoring conducted during the pilot project establishes that when seasonal pumping is terminated, groundwater levels recover quickly, regardless of the water year type. This monitoring confirms the groundwater that would be extracted by the proposed Project is drainage water moving downslope from irrigated lands outside of Widren. Because the proposed Project would extract drainage water from the upper, unconfined aquifer, it would not interfere with groundwater recharge such that there would be a net deficit in the aquifer volume or a lowering of the groundwater table level. Therefore, the proposed Project would have no impact.

c-e. **No Impact**. The proposed Project would alter the subsurface drainage pattern within Widren, but those alterations would be beneficial and help to maintain the arability of lands within Widren and surrounding areas. The proposed Project would not have the potential for increased soil erosion or sediment deposition in water bodies as no physical alterations to any rivers or streams would occur. The proposed Project would neither alter existing drainage patterns nor the course of any stream or river that would result in flooding on or off site. The proposed Project would not involve any physical changes to the environment that would contribute or create runoff water that would exceed the capacity of existing drainage systems or provide a substantial source of polluted runoff. Therefore, no impacts would occur.

g & h. **No Impact**. The proposed Project does not include, nor would it induce, the construction of housing or new structures within the 100- year floodplain. Therefore, no impacts would occur.

i & j. **No Impact**. The proposed Project does not include an element that would increase the risk of flooding or result in a levee or dam failure. Nor is the proposed Project within an area that could be impacted by seiche, tsunami, or mudflow and would not result in inundation by seiche, tsunami or mudflow. No impact would occur.

13.10 Land Use and Planning

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

13.10.1 Existing Setting

The primary land use throughout the proposed Project area is irrigated agriculture. The land within Widren, as well as lands in Firebaugh Canal Water District and WWD that would receive water as a result of the proposed Project, are designed for agricultural use under Fresno County's General Plan. Much of the land in these areas is classified as important farmlands by the California Department of Conservation and are enrolled in the Williamson Act contracts, as described below. As such, Fresno County protects agricultural resources as an important land use through their General Plan and zoning ordinances. These measures are generally based on the quality of land in terms of potential production value.

13.10.2 Discussion

a. **No Impact.** The proposed Project would not involve changes in land use or the construction of new utilities or buildings. Therefore, the proposed Project would have no impact.

b. **No Impact.** The proposed Project would not involve any land use changes or actions that would conflict with applicable land use plans, policies, or regulations. Therefore, the proposed Project would have no impact.

c. **No Impact.** There are no Habitat Conservation Plans or Natural Community Conservation Plans that are currently in place in the vicinity of the proposed Project. Therefore, the proposed Project would have no impact.

13.11 Mineral Resources

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

13.11.1 Existing Setting

Fresno County has been a leading producer of minerals because of the abundance and wide variety of mineral resources that are present in the County.

13.11.2 Discussion

a & b. **No Impact**. The proposed Project consists of pumping and treating drainage water and conveying treated water using existing infrastructure, a replacement groundwater well, and an expanded reverse osmosis treatment plant Mineral resources in the vicinity of the Widren service area would not be impacted by any of the Project components. The proposed Project would not require the use of mineral resources and would not result in the loss of availability of a known mineral resource. No impact would occur.

13.12 Noise

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies?	☐	☐	☐	☒
b) Exposure of persons to or generation of excessive ground borne vibration or ground-borne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒

e) For a project located within an airport land use plan area or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

13.12.1 Existing Setting

Noise is typically defined as unwanted sound that interferes with normal activities or otherwise diminishes the quality of the environment. Prolonged exposure to high levels of noise is known to have several adverse effects on people, including hearing loss, interference with communications and sleep, physiological responses, and annoyance. The noise environment includes background noise generated from both near and distant noise sources, as well as the sound from individual local sources. These sources of noise can vary from an occasional aircraft or train passing by to continuous noise from sources such as traffic on a major road.

The standard unit of measurement of the loudness of sound is Decibel (dB). Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more useable range of numbers in a manner similar to the way that the Richter scale is used to measure earthquakes. In terms of human response to noise, studies have indicated that a noise level increase of 3 dBA is barely perceptible to most people, a 5 dBA increase is readily noticeable, and a difference of 10 dBA would be perceived as a doubling of loudness. Everyday sounds normally range from 30 to 100 dBA.

Noise and vibration sources in the Widren service area are dominated by agricultural activities, vehicular traffic, and air traffic. There are no sensitive receptors (e.g., schools) located in close proximity to Widren.

13.12.2 Discussion

a – f. **No Impact.** The proposed Project would not constitute a new noise source. Temporary construction noise would occur from construction of the replacement groundwater well but given the short term and temporary nature of this construction activity and its remote location, no impact

is anticipated. No permanent increase in ambient noise levels would result from the proposed Project compared to existing conditions. No temporary or permanent increase in ground borne vibration would result from the proposed Project compared to existing conditions. The proposed Project would not introduce any permanent sources of noise. In addition, it would not alter the local environment, such as by increasing the noise production/exposure associated with existing, permanent sources of noise in the area of the proposed Project. Ambient noise in the Widren service area is generally low because of the existing rural and agricultural land uses. Agricultural noise sources would continue to be intermittent in nature. The proposed Project would not impact any airport or airstrip operations and would not expose people, on-site or off-site, to excessive noise levels. Lastly, the proposed Project would not impact on any airstrip operations and would not expose people to excessive noise levels. No impacts associated with noise are anticipated from the proposed Project.

13.13 Population and Housing

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

13.13.1 Existing Setting

Lands in the Widren service area and lands in Firebaugh Canal Water District and WWD that would receive water as a result of the proposed Project are devoted exclusively to agricultural activities. There are no major cities in close proximity to Widren. The closest small city is Firebaugh, which is approximately 5.9 miles from Widren.

13.13.2 Discussion

a – c. **No Impact.** The proposed Project would not result in the creation of a long-term or permanent water supply that would allow construction of new homes or businesses or extending roadways or other infrastructure that could increase the population in the vicinity of the proposed Project. Implementing the proposed Project would not directly or indirectly induce substantial population growth. The proposed Project potentially would keep some farmland from becoming fallowed due to drainage or drought conditions, but it would not expand agricultural activities beyond existing levels. Further, implementation of the proposed Project would not displace existing housing or necessitate construction of replacement housing elsewhere. Lastly, the proposed Project would not displace people or necessitate construction of replacement housing elsewhere. No impact would occur.

13.14 Public Services

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
The Project would be considered to have significant impacts if the Project would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services. **Would the Project impact the below public services:**				
a) Fire protection?	☐	☐	☐	☒
b) Police protection?	☐	☐	☐	☒
c) Schools?	☐	☐	☐	☒
d) Parks?	☐	☐	☐	☒
e) Other public facilities?	☐	☐	☐	☒

13.14.1 Existing Setting

The Widren is within the Fresno County Fire Protection District is covered by the Fresno County Sheriff's Department. Firebaugh/Las Deltas Unified School District is the closest district in Fresno County. There are no recreational areas in close proximity to Widren.

13.14.2 Discussion

a – e. **No Impact**. The proposed Project would not generate new residents and it would not include the construction of any structures that would require additional fire protection services. The proposed Project would not require changes in law enforcement services, and it would not include any new housing, businesses, or other development that would increase demand for police protection services and facilities. The proposed Project would not provide any new housing that would generate new students or residents in the community and would not increase the demand for school services and facilities or new or expanded park facilities. No other public facilities would be impacted by the proposed Project. No impact would occur.

13.15 Recreation

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Include recreational facilities, or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☐	☒
c) Substantially conflict with the area's established recreational uses	☐	☐	☐	☒

13.15.1 Existing Setting

There are no recreational areas near Widren. The closest parks are in the City of Firebaugh, approximately six miles from Widren.

13.15.2 Discussion

a – c. **No Impact.** The proposed Project would not affect existing recreational facilities. No impact on recreational areas near Widren would occur. The proposed Project would not increase the population by introducing new housing or employment opportunities, and thus it would not

contribute to increased use of existing regional or local parks, or other recreational facilities, causing their deterioration. No recreational facilities are proposed, and the proposed Project would not require the construction or expansion of recreational facilities. Lastly, the proposed Project would not conflict with any established recreational uses in the Widren service area. No impact would occur.

13.16 Transportation/Traffic

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒

13.16.1 Existing Setting

Roads in close proximity to the Widren service area are primarily rural in character. There are dirt roads that run along both sides of the Delta-Mendota Canal through the WWD service area that are used for operation and maintenance of the Canal.

13.16.2 Discussion

a – f. **No Impact.** The proposed Project would not adversely affect traffic or transportation patterns. The construction of the replacement well and installation of a new reverse osmosis treatment unit would result in limited, temporary, and short-term construction traffic on existing public highways and roads along the Delta-Mendota Canal. This construction traffic would not disrupt existing traffic. Otherwise, the proposed Project would not have any effect on traffic or cause a substantial change in existing traffic patterns and would not add sufficient trips to degrade the levels of service or conflict with an applicable congestion management program. There would be no interference with air traffic patterns from the proposed Project. The proposed Project would not include any change to roadway design or introduce incompatible uses. Implementation of the proposed Project would not require any road closures and no traffic flow would be interrupted on any roadway so as to impair or interfere with emergency access to local roads and would not result in traffic delays that could substantially increase emergency response times or reduce emergency vehicle access. The proposed Project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, nor would it otherwise decrease the performance of such facilities. No impact would occur.

13.17 Utilities and Service Systems

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state and local statutes and regulations related to solid waste?	☐	☐	☐	☒

13.17.1 Existing Setting

Widren serves approximately 835 acres of farm ground in Fresno County. The area in WWD that would receive supplemental water as a result of the water transfer or exchange consists of approximately 1,803 acres that are devoted to permanent crops (almonds).

13.17.2 Discussion

a – c and e – g. **No Impact.** The proposed Project would not result in the need for wastewater service and would not include any new development that would require wastewater treatment. Thus, the Project would not result in wastewater discharges that would exceed Regional Water Quality Control Board's requirements. The proposed Project would not include changes to water treatment requirements for Widren and the expansion of existing or construction of new waste or

wastewater facilities would not be required. The proposed Project would not create or contribute runoff that would exceed the capacity of any stormwater drainage systems. Further, the proposed Project would not include construction of new impervious surfaces or other development that would require new stormwater drainage facilities or expansion of existing facilities. The proposed Project would not result in changes to wastewater generation and would not exceed a wastewater treatment provider's capacity. Solid waste generated during proposed Project activities would be incidental and no different than current conditions and would be disposed of in local landfills. Transportation and disposal would be in accordance with all applicable federal, state, and local statutes and regulations. No impact would occur.

d. **No Impact.** No new water supplies would be required for the proposed Project. Nor would the proposed Project include any new development that would require public water supplies. Thus, no new or expanded water supply entitlements would be needed. The proposed Project would integrate up to 2,500 AFY in the SLC to augment water supply for irrigation of lands along the San Luis Canal (California Aqueduct) in WWD. The water would result from the transfer/exchange of existing surface water supplies that are currently used to meet existing irrigation demands served by the CVP. The proposed Project would reduce reliance on groundwater in the Westside Subbasin and support ongoing agricultural operations. The proposed Project would have no impact.

13.18 Mandatory Findings of Significance

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wild-life population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of rare or endangered plants or animals, or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	☒

b) Does the project have impacts that are individually limited, but cumulatively considerable? "Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of future projects.	☐	☐	☐	☒
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

13.18.1 Discussion

a. **No Impact.** The analysis conducted in this initial study concludes that implementation of the proposed Project would not have a significant impact on the environment. As evaluated in Section 14.4, Biological Resources, impacts on biological resources would be less than significant. Therefore, the proposed Project would not substantially degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or reduce the number or restrict the range of an endangered, rare, or threatened species.

As discussed in Section 14.5, Cultural Resources, the proposed Project would not eliminate important examples of the major periods of California history or prehistory and impacts to cultural resource would be less than significant.

b. **No Impact.** As discussed in this initial study, the proposed Project would result in no impacts to aesthetics, agriculture and forestry resources, air quality, biological resources, cultural resources, geology, and soils, GHG emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation and traffic, and utilities and service systems. Measures would be included in the Project design to ensure water quality meets the current DWR regulations.

The groundwater pumping, water transfers/exchanges, and water conveyance resulting from the proposed Project would not result environmental impacts on the physical environment. None of the proposed Project's impacts make cumulatively considerable, incremental contributions to significant cumulative impacts. To the contrary, the proposed Project provides benefits to agricultural production by keeping more highly productive farmland in production by reducing impacts of drainage, improving water quality, and reducing demands on groundwater in the Westside Subbasin. Overall, these are beneficial effects during a drought and conducted without significant direct, indirect, or cumulative impacts.

c. **No Impacts.** The proposed Project would have no impact results and would not cause substantial adverse effects on human beings, either directly or indirectly.

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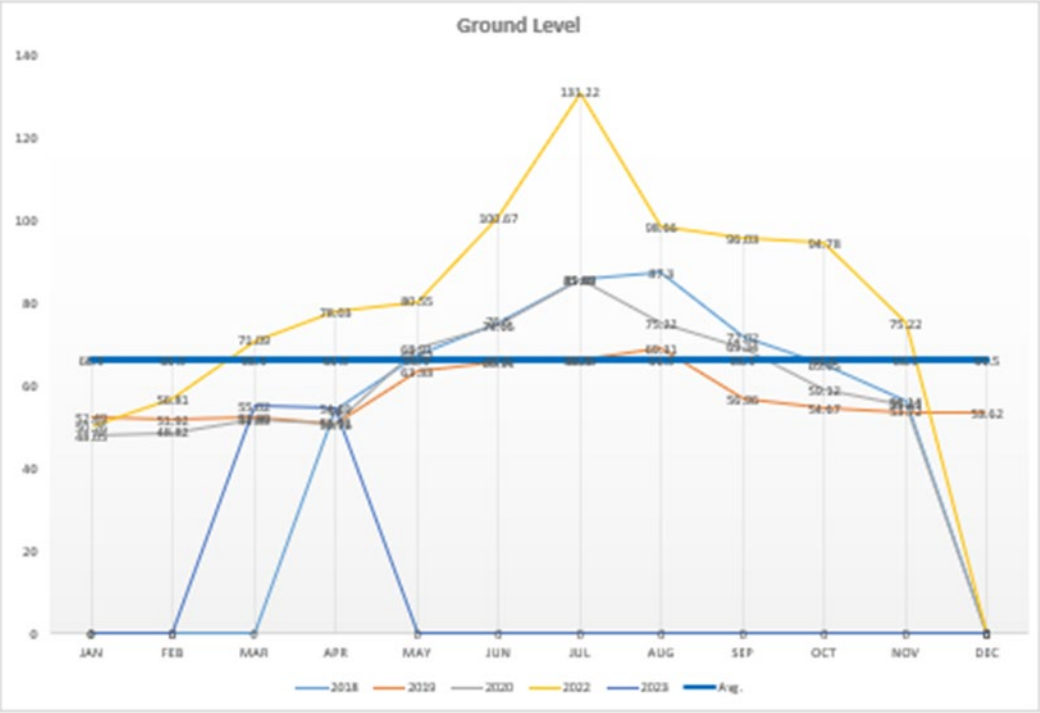
APPENDIX A

WATER QUAITY DATA - FIGURES

Figure A–1
Depth Ground water



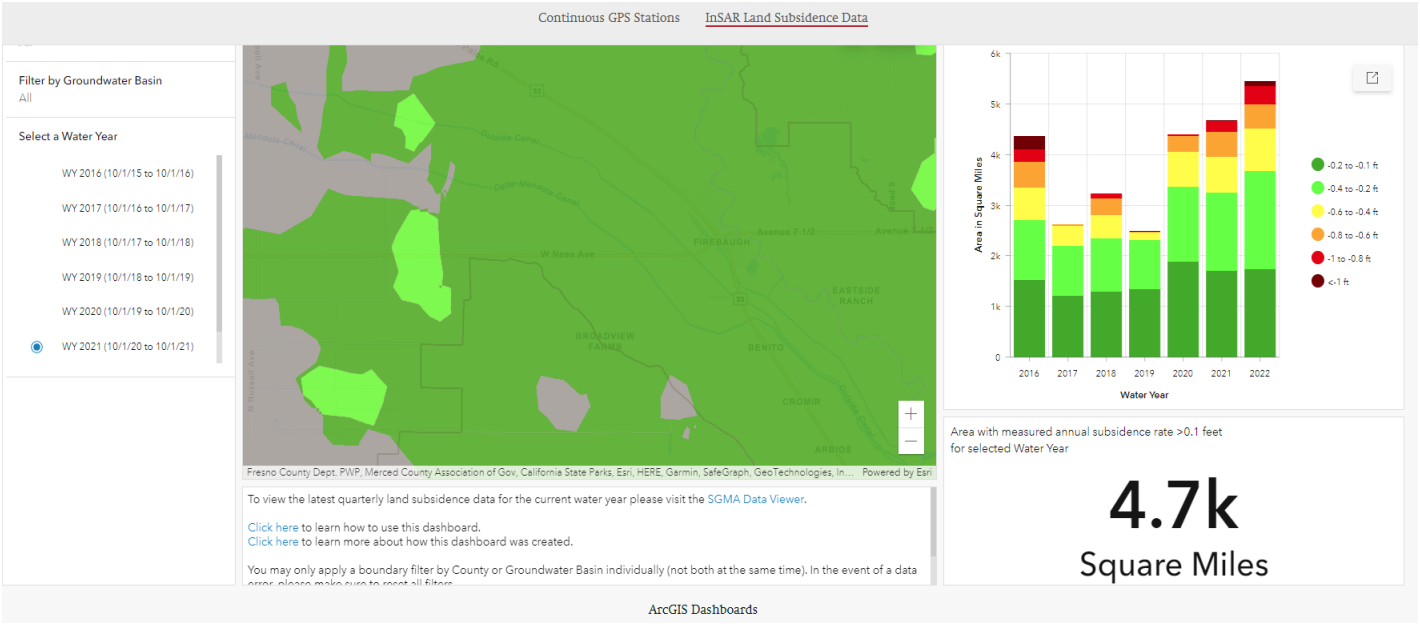
STATIC WATER LEVEL (FT') FEET BELOW GROUND SURFACE (SOURCE WELL)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2018	0	0	0	54	67.62	75.5	85.89	87.3	72.02	65.05	56.14	0
2019	52.49	51.92	52.39	51.01	63.33	65.94	66.33	69.31	56.96	54.67	53.72	53.62
2020	48.05	48.82	51.89	50.76	68.91	74.66	85.68	75.22	69.34	59.12	55.41	0
2022	50.26	56.81	71.09	78.03	80.55	100.67	131.22	98.66	96.03	94.78	75.22	0
2023	0	0	55.02	54.69	0	0	0	0	0	0	0	0
Avg.	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5

AVG. by Month	50.27	52.52	57.60	57.70	70.10	79.19	92.28	82.62	73.59	68.41	60.12	53.62

NOTES: * Measurements are in (FT') from the level of static water below the ground surface to the base of the well pump head
** Measurements are in (FT') from the level of static water below the ground surfce to the top of the (PVC) pipe installed

Figure A-2
Subsidence Figure USBR (July 2012 – July 2021) & CA Groundwater Live: Land Subsidence



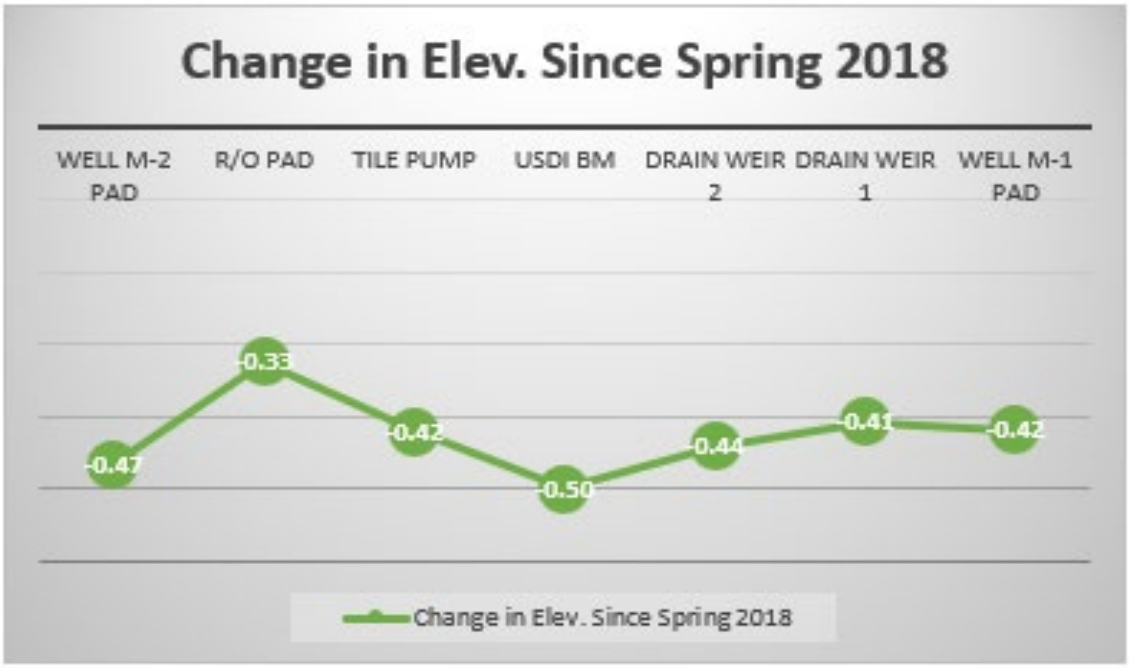
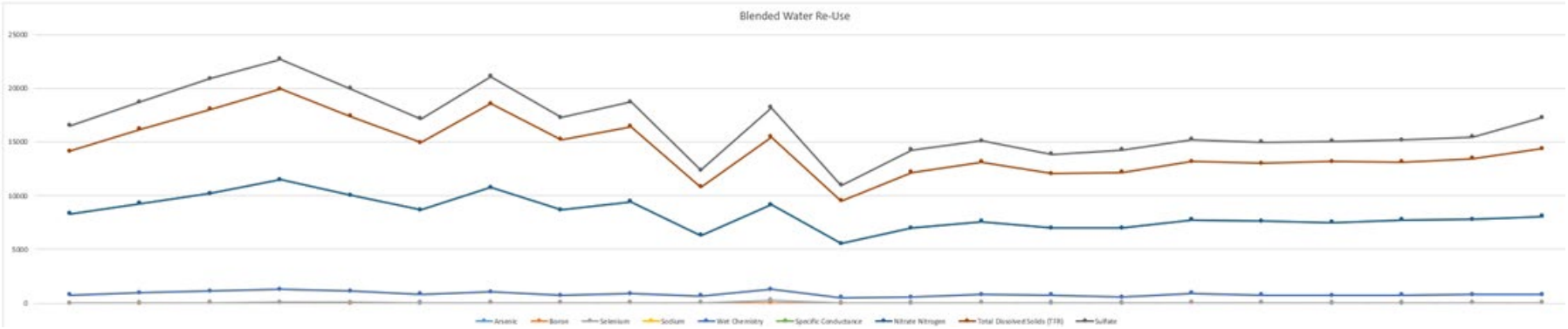


Figure A-2 (Cont')
Subsidence Figure USBR (July 2012 – July 2021) & CA Groundwater Live: Land Subsidence

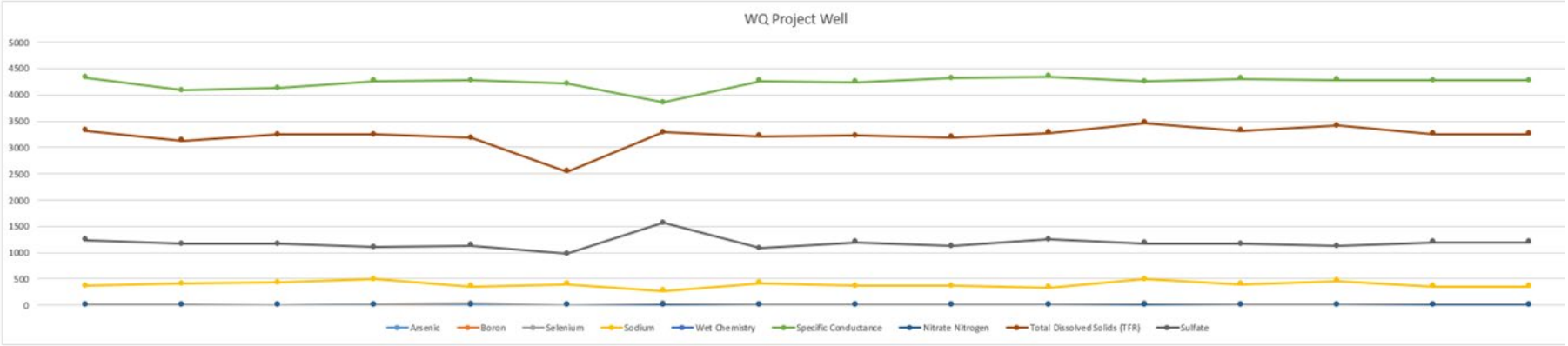
Description	*SPRING 2018*	*Spring 2020*	*Fall 2022*	*Change in Elev. Since Spring 2018*
Well M-2 Pad	163.48	163.43	163.01	-0.47
R/O Pad	163.64	163.73	163.31	-0.33
Tile Pump	170.40	170.43	169.98	-0.42
USDI BM	165.94	165.92	165.44	-0.50
Drain Weir 2	163.61	163.59	163.17	-0.44
Drain Weir 1	163.18	163.20	162.77	-0.41
Well M-1 Pad	162.35	162.32	161.93	-0.42

Figure A-3
Water Quality – Blended 2018 – 2022



Blended Water to Re-Use Area (2018 no data found)(2019 Only Blended and RO)											7/6/21 report			3/26/21 report					TTL 22 report			
Constituent	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
	10/20/2022	9/20/2022	8/31/2022	7/6/2022	6/17/2022	5/5/2022	4/26/2022	4/19/2022	4/12/2022	8/11/2021	7/7/2021	6/9/2021	5/10/2021	5/19/2021	5/26/2021	5/10/2021	9/3/2020	7/1/2020	6/2/2020	5/26/2020	5/21/2020	4/18/2019
Metals, Total																						
Arsenic	7	ND	9	19	ND	8	10	9	10	10	10	ND	8	9	8	8	9	9	8	8	9	9
Boron	0.5	2.7	4.7	3.8	3.0	2.5	2.9	3.1	3.1	3.0	7.5	2.6	2.8	2.7	2.9	2.9	2.5	2.9	2.6	2.8	2.5	3.0
Selenium	ND	20	7	41	50	10	13	9	9	21	256	11	18	19	21	18	34	17	15	16	21	3
Sodium	741	950	1110	1230	1060	827	1020	683	841	646	1020	499	529	751	728	529	887	725	690	720	742	767
Wet Chemistry																						
Specific Conductance	7570	8310	9060	10200	8920	7820	9700	7950	8580	5630	7840	5010	6410	6790	6210	6410	6830	6850	6770	6980	7020	7270
Nitrate Nitrogen	ND	ND	ND	ND	0.2	ND	ND	ND	ND	ND	11.0	0.2	ND	0.2	0.4	ND	0.2	ND	0.2	0.2	0.2	0.4
Total Dissolved Solids (TFR)	5810	6910	7830	8420	7360	6280	7810	6550	6970	4490	6330	3970	5200	5540	5060	5200	5420	5410	5670	5420	5640	6310
Sulfate	2360	2540	2850	2790	2550	2200	2530	2080	2320	1560	2720	1480	2070	1990	1830	2070	2050	1970	1890	2040	2010	2900

Figure A - 4
Water Quality – Project well 2018 - 2022



M1 Project Well - No Data for 2019 & (Reference "2018 Widren FGL Summary Report")

Constituent	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
	10/20/2022	9/20/2022	8/31/2022	7/6/2022	6/17/2022	5/5/2022	3/16/2022	8/1/2021	7/7/2021	6/9/2021	5/10/2021	9/3/2020	7/1/2020	6/2/2020	5/21/2020	3/27/2020
Metals, Total																
Arsenic	5	ND	5	8	ND	4	ND	7	5	ND	5	6	5	4	ND	5
Boron	1.7	1.8	1.7	1.7	1.6	1.6	2.6	1.8	1.7	1.6	1.7	1.6	1.6	1.6	1.7	1.7
Selenium	10	10	3	17	30	5	21	16	10	10	14	18	13	7	15	15
Sodium	372	412	435	497	363	399	269	416	366	372	340	498	397	460	359	359
Wet Chemistry																
Specific Conductance	4320	4080	4120	4260	4270	4210	3850	4260	4240	4310	4340	4250	4300	4280	4270	4270
Nitrate Nitrogen	ND	ND	ND	ND	ND	ND	0.2	ND	ND	ND	ND	0.2	ND	ND	0.2	0.2
Total Dissolved Solids (TFR)	3320	3130	3240	3240	3180	2540	3280	3210	3220	3190	3270	3460	3320	3410	3250	3250
Sulfate	1240	1170	1170	1100	1130	980	1560	1080	1200	1120	1250	1180	1170	1120	1200	1200

Figure A - 5
Water Quality – Monitoring Well 2018 – 2022

M2 Monitoring Well - 2019 - No Monitoring well Data (Only Blend and RO Water)																Pg. 29 of Dated report	Review these report (Selenium)				
Constituent	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
	10/20/2022	9/20/2022	8/31/2022	7/6/2022	6/17/2022	4/12/2022	3/16/2022	08/11/2021	07/06/2021	6/9/2021	5/10/2021	9/3/2020	8/4/2020	7/1/2020	6/2/2020	3/27/2020	8/22/2018	7/25/2018	6/20/2018	5/18/2018	2/22/2018
Metals, Total																					
Arsenic	40	20	12	ND	10	18	10	20	10	13	30	ND	21	16	78	ND	9.8	5	32	15	54
Boron	59.4	18.5	19.1	22.5	14.3	14.4	13.4	22.6	13.8	11.4	8.3	16.8	11.9	11.2	8.8	9.1	16.7	0.27	12.7	10.8	15.0
Selenium	325	320	274	80	90	83	24	226	86	56	26	50	35	22	70	20					
Sodium	14100	2700	3190	2830	2870	3050	1910	2850	2150	2030	1130	2960	2430	2280	2110	2260	2380	3520	2540	2710	2930
Wet Chemistry																					
Specific Conductance	14300	14200	13500	13300	12500	12500	11000	12700	11000	10200	8730	12300	12200	11300	10400	10400	11700	12000	12200	12100	11500
Nitrate Nitrogen	28	41.0	24.0	2.2	ND	4.6	0.3	17.7	4.1	3.9	0.2	2.6	2.3	0.2	0.3	ND	0.8	0.3	2.0	19.5	18.5
Total Dissolved Solids (TFR)	12200	12200	11500	11300	10100	10600	9610	11000	9330	8440	7100	10100	9550	8880	8050	7930	9490	9170	9170	9740	9240
Sulfate	5970	6030	5770	5130	5730	4930	4650	4910	4600	3720	3250	5010	4130	3760	3070	3280	4430	3680	3770	3830	4530

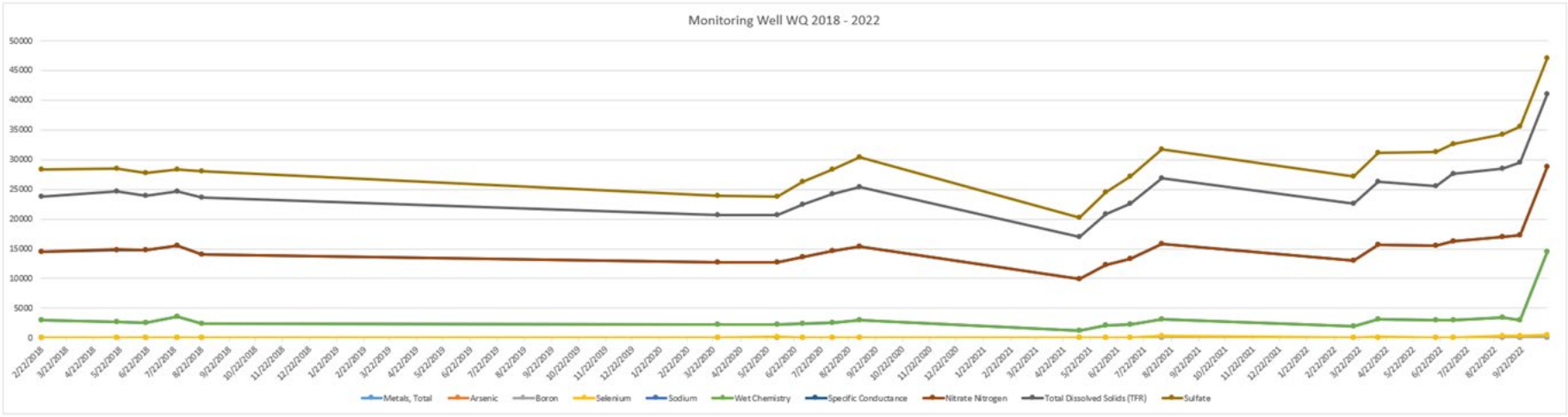
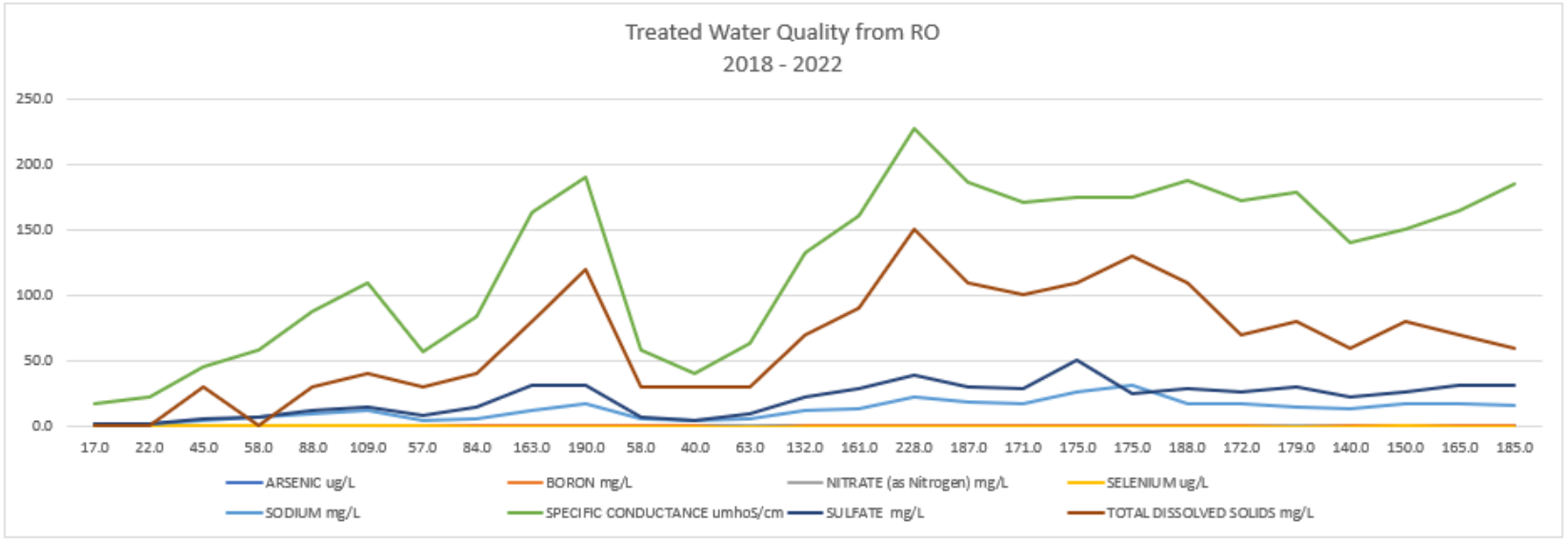


Figure A - 6
Water Quality – Treated Water from RO 2018 – 2022

TREATED RO WATER		2018 - 2022																												
CONSTITUENTS	UNIT	Note: 2019 no samples taken																												
DATE SAMPLED		05.04.18	05.18.18	06.20.18	07.25.18	08.22.18	09.14.18	3.27.20	05.12.20	05.26.20	06.02.20	07.01.20	08.04.20	.09.03.22	.03.26.21	.05.19.21	.06.09.21	.07.06.21	.08.11.21	.03.16.22	.04.12.22	.04.26.22	.05.05.22	.06.17.22	.07.06.22	.08.31.22	.09.20.22	.10.20.22
ARSENIC	ug/L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
BORON	mg/L	0.3	0.3	0.6	0.6	0.6	0.6	0.4	0.3	0.4	0.5	0.4	0.3	0.2	0.3	0.3	0.4	0.4	0.3	0.6	0.5	0.4	0.4	0.3	0.3	0.3	0.4	0.4
NITRATE (as Nitrogen)	mg/L	0.0	0.2	0.0	0.0	0.0	0.20	0.0	0.0	0.0	0.0	0.0	0.0	0.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.00
SELENIUM	ug/L	0.4	0.4	0.4	0.4	0.4	0.4	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.00	0.00
SODIUM	mg/L	2.0	2.0	5.0	7.0	9.0	12.0	5.0	6.0	12.0	17.0	6.0	4.0	6.0	12.0	13.0	23.0	18.0	17.0	26.0	31.0	17.0	17.0	15.0	14.0	17.0	17.0	16.0
SPECIFIC CONDUCTANCE	umhoS/cm	17.0	22.0	45.0	58.0	88.0	109.0	57.0	84.0	163.0	190.0	58.0	40.0	63.0	132.0	161.0	228.0	187.0	171.0	175.0	175.0	188.0	172.0	179.0	140.0	150.0	165.0	185.0
SULFATE	mg/L	1.3	2.3	5.3	7.0	12.0	14.4	8.6	14.6	30.9	31.7	7.3	4.8	9.4	22.5	29.1	38.8	30.5	28.3	50.8	25.1	29.0	26.4	30.5	22.3	26.6	31.9	31.1
TOTAL DISSOLVED SOLIDS	mg/L	0.0	0.0	30.0	0.0	30.0	40.0	30.0	40.0	80.0	120.0	30.0	30.0	30.0	70.0	90.0	150.0	110.0	100.0	110.0	130.0	110.0	70.0	80.0	60.0	80.0	70.0	60.0



APPENDIX B

WATER QUALITY STANDARDS – FULL ANALYSIS

Water Quality Standards – Full Analysis

Constituent	Units	Maximum Contaminant Level	Detection Limit for Reporting	CAS Registry Number	Recommended Analytical Method
Primary					
Aluminum	mg/L	1 (1)	0.05(2)	7429-90-5	EPA 200.7
Antimony	mg/L	0.006 (1)	0.006 (2)	7440-36-0	EPA 200.8
Arsenic	mg/L	0.010 (1)	0.002 (2)	7440-38-2	EPA 200.8
Asbestos	MFL	7 (1)	0.2 (2)	1332-21-4	EPA 100.2
Barium	mg/L	1 (1)	0.1 (2)	7440-39-3	EPA 200.7
Beryllium	mg/L	0.004 (1)	0.001 (2)	7 440-41-7	EPA 200.7
Cadmium	mg/L	0.005 (l)	0.001 (2)	7440-43-9	EPA 200.7
Chromium. total	mg/L	0.05 (1)	0.01 (2)	7440-47-3	EPA 200.7
Chromium, hexavalent	mg/L	0.01 (1)		18540-29-9	EPA 218.6
Cyanide	mg/L	0.15 (1)	0.l (2)	74-90-8	EPA 335.2-4
Fluoride	mg/L	2 (14)	0.1 (14)	7681-49-4	EPA 340.1,2
Mercury, inorganic	mg/L	0.002 (1)	0.001 (2)	7439-97-6	EPA245.1
Nickel	mg/L	0.1 (1)	0.01 (2)	7440-02-0	EPA 200.7
Nitrate (as N03)	mg/L	45 (1)	2 (2)	7727-37-9	EPA 300.1
Nitrate + Nitrite (sum as nitrogen)	mg/L	10 (1)		17778-88-0	EPA 353.2
Nitrite (as nitrogen)	mg/L	1 (1)	0.4 (2)	14797-65-0	EPA 300.1
Perchlorate	mg/L	0.006 (l)		14797-73-0	EPA 314.0
Selenium, total	mg/L	0.02 (10)	0.005 (2)	7782-49-2	EPA 200.8
Thallium	mg/L	0.002 (1)	0.001 (2)	7440-28-0	EPA 200.8
Secondary					
Aluminum	mg/L	0.2 (6)		7429-90-5	EPA 200.7
Chloride	mg/L	250- 600 (7)		16887-00-6	EPA 300.1
Color	Units	15 (6)			EPA 334
Copper	mg/L	1.0 (6)	0.05 (8)	7440-50-8	EPA 200.7
Iron	mg/L	0.3 (6)		7439-89-6	EPA 200.7
Lead	mg/L	0.015 (8)	0.005 (8)	7439-92-1	EPA 200.8

Appendix B.
Water Quality Standards – Full Analysis (Cont.)

Constituent	Units	Maximum Contaminant Level	Detection Limit for Reporting	CAS Registry Number	Recommended Analytical Method
Manganese	mg/L	0.05 (6)		7439-96-5	EPA 200.7
Methyl tertiary butyl ether (MTBE)	mg/l	0.013 (6)		1634-04-4	EPA 8020
Odor	TON	3 (6)			EPA 140.1
pH	Units	6.5-8.5 (6)			EPA 150.1
Silver	mg/L	0.1 (6)		7440-22-4	EPA 200.7
Specific Conductance	µS/cm	900- 2200 (7)			SM 2510.B
Sulfate	mg/L	250 - 600 (7)		14808-79-8	EPA 300.1
Thiobencarb	mg/L	0.001 (6)		28249-77-6	EPA 525.2
Total Dissolved Solids	mg/L	500- 1500 (7)			SM 2540.C
Turbidity	NTU	5 (6)			EPA 180.1
Zinc	mg/L	5.0 (6)		7440-66-6	EPA 200.7
Other Constituents of Concern					
Boron	mg/L	2 (10) (12)		7440-42-8	EPA 200.7
Bromide	mg/L	(16)		24959-67-9	EPA 300.1
Chlorpytifos	µg/L	0.025 (11)		2921-88-2	EPA 8141
Diazinon	µg/L	0.16 (11)		333-41-5	EPA 507
Molybdenum	mg/L	0.015 (10)		7439-98-7	EPA 200.7
Sodium	mg/L	69 (12)		7440-23-5	EPA 200.7
Total organic carbon	mg/L	(16)		7440-44-0	EPA 415.1
Radioactivity					
Gross Alpha	pCi/L	15 (3)	3 (3)	12587-46-1	SM 7110C
Organic Chemicals – VOC					
Benzene	mg/l	0.001 (4)	0.005 (5)	71-43-2	EPA 524.2
Carbon tetrachloride	mg/l	0.0005 (4)	0.0005 (5)	56-23-5	EPA 524.2
1,2-Dichlorobenzene	mg/l	0.6 (4)	0.0005 (5)	95-50-1	EPA 524.2
1,4-Dichlorobenzene (p-DCB)	mg/l	0.005 (4)	0.0005 (5)	106-46-7	EPA 524.2
1,1-Dichloroelhane (1,1-DCA)	mg/l	0.005 (4)	0.0005 (5)	75-34-3	EPA 524.2

Appendix B.
Water Quality Standards – Full Analysis (Cont.)

Constituent	Units	Maximum Contaminant Level	Detection Limit for Reporting	CAS Registry Number	Recommended Analytical Method
1-2, Dichloroethane (1,2-DCA)	mg/l	0.0005 (4)	0.0005 (5)	107-06-2	EPA 524.2
1,1-Dichloroethylene (1,1-DCE)	mg/l	0.006 (4)	0.0005 (5)	75-35-4	EPA 524.2
cis-1,2-Dichloroethylene	mg/l	0.006 (4)	0.0005 (5)	156-59-2	EPA 524.2
trans-1,2-Dichloroethylene	mg/l	0.01 (4)	0.0005 (5)	156-60-5	EPA 524.2
Dichloromethane (Methylene chloride)	mg/l	0.005 (4)	0.0005 (5)	75-09-2	EPA 524.2
1,2-Dichloropropane	mg/l	0.005 (4)	0.0005 (5)	78-87-5	EPA 524.2
1,3-Dichloropropene	mg/l	0.0005 (4)	0.0005 (5)	542-75-6	EPA 524.2
Ethylbenzene	mg/l	0.3 (4)	0.0005 (5)	100-41-4	EPA 524.2
Methyl tertiary butyl ether (MTBE)	mg/l	0.013 (4)	0.003 (5)	1634-04-4	EPA 524.2
Monochlorobenzene	mg/l	0.07 (4)	0.0005 (5)	108-90-7	EPA 524.2
Styrene	mg/l	0.1 (4)	0.0005 (5)	100-42-5	EPA 524.2
1,1,2,2-Tetrachloroethane	mg/l	0.001 (4)	0.0005 (5)	79-34-5	EPA 524.2
Tetrachloroethylene	mg/l	0.005 (4)	0.0005 (5)	127-18-4	EPA 524.2
Toluene	mg/l	0.15 (4)	0.0005 (5)	108-88-3	EPA 524.2
1,2,4-Trichlorobenzene	mg/l	0.005 (4)	0.0005 (5)	120-82-1	EPA 524.2
1,1,1-Trichloroethane (1,1,1-TCA)	mg/l	0.2 (4)	0.0005 (5)	71-55-6	EPA 524.2
1,1,2-Trichloroethane (1,1,2-TCA)	mg/l	0.005 (4)	0.0005 (5)	79-00-5	EPA 524.2
Trichloroethylene (TCE)	mg/l	0.005 (4)	0.0007 (5)	79-01-6	EPA 524.2
Trichlorofluoromethane (Freon 11)	mg/l	0.15 (4)	0.005 (5)	75-69-4	EPA 524.2
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	mg/l	1.2 (4)	0.01 (5)	76-13-1	EPA 524.2
Vinyl chloride	mg/l	0.0005 (4)	0.0005 (5)	75-01-4	EPA 524.2
Xylenes. total	mg/l	1.75 (4)	0.0005 (5)	95-47-6	EPA 524.2
SOC					
2,3,7,8-TCDD (Dioxin)	mg/L	3xl0-8 (14)	5xl0-9	1746-01-6	EPA 1613
2, 4, 5-TP (Silvex)	mg/L	0.05 (4)	0.001 (5)	93-72-1	EPA 515.1-4
2,4-D	mg/L	0.07 (4)	0.01 (5)	94-75-7	EPA 515.1-4
Alachlor	mg/L	0.002 (14)	0.001	15972-60-8	EPA 535

Appendix B.
Water Quality Standards – Full Analysis (Cont.)

Constituent	Units	ximum Contaminant Level	Detection Limit for Reporting	CAS Registry Number	Recommended Analytical Method
Atrazine	mg/L	0.001 (4)	0.0005 (5)	1912-24-9	EPA 508.1
Bentazon	mg/L	0.018 (4)	0.002 (5)	25057-89-0	EPA 515.1-4
Benzo(a)pyrene	mg/L	0.0002 (1)	0.0001	50-32-8	EPA 8310
Carbofuran	mg/L	0.018 (4)	0.005 (5)	1563-66-2	EPA 531.1-2
Chlordane	mg/L	0.0001 (4)	0.0001 (5)	57-74-9	EPA 505
Dalapon	mg/L	0.2 (14)	0.01	75-99-0	EPA 552.1
l ,2-Dibromo-3-chloropropane (DBCP)	mg/L	0.0002 (4)	0.00001 (5)	96-12-8	EPA 504.1
Di(2-ethylhexyl) adipate	mg/L	0.4 (4)	0.005 (5)	103-23-1	EPA 525.2
Di(2-elhylhexyl) phthalate (DEHP)	mg/L	0.004 (4)	0.003 (5)	117-87-7	EPA 36108
Dinoseb	mg/L	0.007 (4)	0.002 (5)	88-85-7	EPA 515.1-4
Diquat	mg/L	0.02 (4)	0.04 (5)	85-00-7	EPA 549.1-2
Endothall	mg/L	0.1 (4)	0.045 (5)	145-73-3	EPA 548.1
Endrin	mg/L	0.002 (4)	0.0001 (5)	72-20-8	EPA 505
Ethylene Dibromide (EDB)	mg/L	0.00005 (4)	0.00002 (5)	106-93-4 E	EPA 504.1
Glyphosate	mg/L	0.7 (4)	0.025 (5)	1071-83-6	EPA 547
Heptachlor	mg/L	0.00001 (4)	0.00001 (5)	76-44-8	EPA 505
Heptachlor Epoxide	mg/L	0.00001 (4)	0.00001 (5)	1024-57-3	EPA 505
Hexachlorobenzene	mg/L	0.001 (4)	0.0005 (5)	118-74-1	EPA 505/508
Hexachlorocyclopentadiene	mg/L	0.05 (4)	0.001 (5)	77-47-4	EPA 8120
Lindane (BHC-gamma)	mg/L	0.0002 (4)	0.002 (5)	58-89-9	EPA 505
Methoxychlor	mg/L	0,03 (4)	0.01 (5)	72-43-5	EPA 505
Molinate	mg/L	0.02 (4)	0.002 (5)	2212-67-1	EPA 525.2
Oxamyl	mg/L	0.05 (4)	0.02 (5)	23135-22-0	EPA 531.1-2
Pentachlorophenol	mg/L	0.001 (4)	0.0002 (5)	87-86-5	EPA 4010A
Picloram	mg/L	0.5 (4)	0.001 (5)	1918-02-1	EPA 515.1-4
Polychlorinated biphenyls (PCB)	mg/L	0.0005 (14)	0.0005	1336-36-3	EPA 505
Simazine	mg/L	0.004 (4)	0.001 (5)	122-34-9	EPA 508.1

Appendix B.
Water Quality Standards – Full Analysis (Cont.)

Constituent	Units	Maximum Contaminant Level	Detection Limit for Reporting	CAS Registry Number	Recommended Analytical Method
Thiobencarb	mg/L	0.07 (4)	0.001 (5)	28249-77-6	EPA 525.2
Toxaphene	mg/L	0.003 (4)	0.001 (5)	8001-35-2	EPA 505

15.0 SOURCES

Title 22 California Code of Regulations. Division 4 Environmental Health. Chapter 15 Domestic Water Quality and Monitoring Regulations. Sections 64401 et seq, as amended.
https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Law books.html
https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/law book/dw regulations-2014-07-01.pdf

(1) Title 22. Table 64431-A Maximum Contaminant Levels, Inorganic Chemicals
(2) Title 22. Table 64432-A Detection Limits for Reporting (DLRs) for Regulated Inorganic Chemicals
(3) Title 22. Table 64442 Radionuclide Maximum Contaminant levels (MCLs) and Detection levels for Purposes of Reporting
(4) Title 22. Table 64444-A Maximum Contaminate Levers, Organic Chemicals
(5) Title 22. Table 64445.1-A Detection Limits for Purposes of reporting (DLRs) for Regulated Organic Chemicals
(6) Title 22. Table 64449-A Secondary Maximum Contaminant Levels "Consumer Acceptance Contaminant Levels"
(7) Title 22. Table 64449-B Secondary Maximum Contaminant Levels "Consumer Acceptance Contaminant Level Ranges"
(8) Title 22. Section 64672.3 Action levels for Lead and Copper
(9) Title 22. Section 64678 (d) Lead Action level
California Regional Water Quality Control Board, Central Valley Region, Fourth Edition of the water Quality Control Plan for the Sacramento River and San Joaquin River Basins.
https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr.pdf

(10) Basin Plan. Table III-1 Trace element water quality objectives.
(11) Basin Plan. Table III-2A (ug/L) (chlorpyrifos & diazinon in San Joaquin River from Mendota to Vernalis)
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). https://www.fao.org/DOCREP/003/T0234E/T0234E00.HTM
(12) Avers, Table 1 (mg/L) (sodium and boron)
(13) Ayers. Table 16 (mg/L) (boron tolerance in sensitive crops)
(14) US. Environmental Protection Agency. May 2009. National Primary Drinking Water
(15) Regulations. EPA 816-F-09-004
https://www.ehso.com/ehshome/DrWater/drinkingwaterepastds.php#list
(16) US. Environmental Protection Agency. Secondary Drinking Water Regulations.
https://www.ehso.com/ehshome/DrWater/drinkingwaterepastds.php#second
(17) Disinfection byproduct pre-cursors: Analyses requested by DWR,
no MCL revised: 08 June 2015

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