

**PUBLIC REVIEW DRAFT**

**INITIAL STUDY/  
MITIGATED NEGATIVE DECLARATION**

**CITY OF LEMOORE WATER TREATMENT PLANTS PROJECT  
CITY OF LEMOORE, CALIFORNIA**



**LSA**

September 2019

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**CITY OF LEMOORE WATER TREATMENT PLANTS PROJECT  
CITY OF LEMOORE, CALIFORNIA**

Submitted to:

City of Lemoore  
711 W. Cinnamon Drive  
Lemoore, California 93245

Prepared by:

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Project No. LMR1901



September 2019

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## LIST OF ABBREVIATIONS AND ACRONYMS

AAQS	Ambient Air Quality Standards
AB	Assembly Bill
APN	Assessor's Parcel Number
bgs	below ground surface
BMPs	Best Management Practices
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CARB	California Air Resource Board
CBC	California Building Code
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CESA	California Endangered Species Act
CF	Community Facilities (Zoning)
CFC	California Fire Code
CH <sub>4</sub>	methane
City	City of Lemoore
CMU	concrete masonry unit
CNDDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> e	CO <sub>2</sub> equivalents
dB	decibel
dBA	A-weighted sound level
DDW	California Department of Drinking Water
EBMUD	East Bay Municipal Utility District
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration

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GAC	Granular Activated Carbon
GHGs	greenhouse gas emissions
gpm	gallons per minute
GWP	Global Warming Potential
KART	Kings Area Rural Transit
L <sub>dn</sub>	day-night average level
L <sub>eq</sub>	equivalent continuous sound level
L <sub>max</sub>	maximum instantaneous noise level
LVFD	Lemoore Volunteer Fire Department
MBTA	Migratory Bird Treaty Act
MG	million gallon
MRZ	Mineral Resource Zone
N <sub>2</sub> O	nitrous oxide
NAAQS	National Air Quality Standards
NAHC	California State Native American Heritage Commission
NMFS	National Marine Fisheries Service
NO <sub>2</sub>	nitrogen dioxide
NO <sub>x</sub>	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
O <sub>3</sub>	ozone
PG&E	Pacific Gas & Electric
PM	particulate matter
PM <sub>2.5</sub>	particulate matter less than 2.5 microns in diameter
PM <sub>10</sub>	particulate matter less than 10 microns in diameter
PR	Parks and Recreation/Ponding Basin (Zoning)
project	City of Lemoore Water Treatment Plants Project
RMD	Medium Density Residential (Zoning)
ROG	reactive organic gases
RPA	Registered Professional Archeologist
RWQCB	Regional Water Quality Control Board
SB	Senate Bill

SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLF	Sacred Lands File
SMARA	Surface Mining and Reclamation Act
SO <sub>2</sub>	sulfur dioxide
SSJVIC	Southern San Joaquin Valley Information Center
State	State of California
SWPPP	Storm Water Pollution Prevention Plan
TACs	toxic air contaminants
TOC	total organic carbon
TTHM	total trihalomethane
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VHFHSZ	Very High Fire Hazard Severity Zone
VMT	vehicle miles traveled
WTPs	Water Treatment Plants
WWTP	wastewater treatment plant

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## 1.0 PROJECT INFORMATION

**1. Project Title:**

City of Lemoore Water Treatment Plants Project

**2. Lead Agency Name and Address:**

City of Lemoore  
711 W. Cinnamon Drive  
Lemoore, CA 93245

**3. Contact Person and Phone Number:**

Amanda Champion | (559) 924-6744 ext. 701

**4. Project Location:**

Well Site 7 is located on the west side of the City along Bush Street across the street from West Hills College. Well Site 11 is located on the north side of the City at the northeast corner of the intersection of Glendale Avenue and 18<sup>th</sup> Avenue.

**5. Project Sponsor's Name and Address:**

City of Lemoore  
711 W. Cinnamon Drive  
Lemoore, CA 93245

**6. General Plan Designation:**

Well Site 7 is designated Public/Institutional and Well Site 11 is designated Transportation/Utilities/Right-of-Way (ROW).

**7. Zoning:**

Well Site 7 is zoned Public Services and Community Facilities (CF) and Medium Density Residential (RMD) and Well Site 11 is zoned Parks and Recreation/Ponding Basin (PR).

**8. Description of Project :**

The proposed project would include the installation of water treatment plants at Well Site 7 and Well Site 11 to meet the water quality objectives for treating the City's water supply.

**9. Surrounding Land Uses and Setting:**

Well Site 7 is bounded to the north by Union Pacific Railroad tracks, to the east by vacant land, to the south by Bush Street, and to the west by vacant land. Land uses in the vicinity of the site include West Hills College and vacant land. In addition, a planned residential development would be located approximately 80 feet west of the site boundary.

Well Site 11 is bounded to the north and east by vacant land, to the south by Glendale Avenue, and to the west by 18<sup>th</sup> Avenue and almond groves. Land uses in the vicinity of the site include single-family residential land uses and vacant and agricultural land.

**10. Other Public Agencies Whose Approval is Required (e.g., permits, financial approval, or participation agreements):**

None.

**11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resource Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.??**

California Native American tribes traditionally and culturally affiliated with the project site and area were notified of the proposed project on August 15, 2019. No tribes have requested consultation and the City has fulfilled its obligations pursuant to AB 52.



## 2.0 PROJECT DESCRIPTION

The following describes the proposed Water Treatment Plants (WTPs) Project in the City of Lemoore (City). Groundwater in the Lemoore region is characterized by the presence of naturally occurring total organic carbon (TOC) and other contaminants. When TOC concentrations are elevated, higher than typical concentrations of chlorine are needed to meet regulated potable water disinfection criteria. A consequence of this relationship is the potential for the development of disinfection byproducts such as total trihalomethane (TTHM). On October 27, 2014, the California Department of Drinking Water (DDW) issued TTHM Compliance Order No. 03-12-14R-004 to the City to address the presence of TTHM above its regulated levels. The proposed project would include the construction of two new WTPs (Station 7 WTP and Station 11 WTP) at two existing well sites, Well Site 7 and Well Site 11, to comply with the DDW compliance order.

### 2.1 PROJECT SITES

The following section describes the location and site characteristics for the project areas and provides a brief overview of the existing land uses within and in the vicinity of the sites.

#### 2.1.1 Location

The proposed project would include the installation of WTPs at Well Site 7 and Well Site 11 to meet the water quality objectives for treating the City's water supply. Figure 2-1 shows the regional location of these well sites.

Well Site 7 is located on the west side of the City along Bush Street across the street from West Hills College, as shown in Figure 2-2. Well Site 7 is bounded to the north by Union Pacific Railroad tracks, to the east by vacant land, to the south by Bush Street, and to the west by vacant land. Land uses in the vicinity of the site include West Hills College and vacant land. In addition, a planned residential development would be located approximately 80 feet west of the site boundary.

Well Site 11 is located on the north side of the City at the northeast corner of the intersection of Glendale Avenue and 18<sup>th</sup> Avenue, as shown in Figure 2-3. Well Site 11 is bounded to the north and east by vacant land, to the south by Glendale Avenue, and to the west by 18<sup>th</sup> Avenue and almond groves. Land uses in the vicinity of the site include single-family residential land uses and vacant and agricultural land.

#### 2.1.2 Site Characteristics and Current Site Conditions

The City of Lemoore has 11 active groundwater wells with the capacities listed in Table 2.A.

Of the City's wells, Wells 7, 13, and 14 can currently pump into the storage reservoir at Well Site 7 and Wells 2, 4, 5, 6, 10, and 11 can currently pump into the storage reservoir at Well Site 11.

**Table 2.A: City of Lemoore Existing Wells Capacity**

Well Number	Design Capacity (gallons per minute)
2	Emergency Backup
4	1,850
5	1,850
6	1,100
7	750
9	900 <sup>1</sup>
10	2,200
11	800
12	1,150
13	1,150
14	1,150

Source: Carollo (January 2019).

<sup>1</sup> Serves process water to Olam Tomato Processing Plant and is the 2nd emergency backup well to the City.

#### 2.1.2.1 Well Site 7

The Station 7 WTP would be located at Well Site 7. As shown in Figure 2-4, Well Site 7 currently consists of a 1.5 million gallon (MG) storage reservoir, a booster pump station, a sodium hypochlorite chemical feed system, Well 7, and a solar field. In addition, a new 1.5 MG reservoir is in the process of being constructed north of the existing water storage reservoir. A 12-inch sewer line runs along the west side of the plant.

#### 2.1.2.2 Well Site 11

The Station 11 WTP would be located at Well Site 11. As shown in Figure 2-5, Well Site 11 consists of a 0.9 MG storage reservoir, a booster pump station, a sodium hypochlorite chemical feed system, Well 11, and a solar field. The City has plans to construct a new 0.9 MG storage reservoir on the south side of the existing reservoir. The existing site has a stormwater detention basin located on the west side of the existing storage reservoir and a 6-inch sewer line running along the east side of the site.



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### LEGEND

#### Project Sites



SOURCE: Google Maps Hybrid (05/2019).

I:\LMR1901\GIS\Maps\Figure 1\_Regional Site Location.mxd (6/28/2019)





Site Boundary

Area of Proposed  
Treatment Systems

Bush St

Marsh Dr

LSA

0 150 300  
FEET



Well Site 7

FIGURE 2-2

City of Lemoore Water Treatment Plants Project  
Well Site 7 Location

SOURCES: GOOGLE EARTH, 6-30-19; LSA, 2019.

FRE10\P\LMR1901 Lemoore Water Treatment Plant\PRODUCTS\Graphics\Fig\_2.ai (7/17/19)





LSA

0 100 200  
FEET



Well Site 11

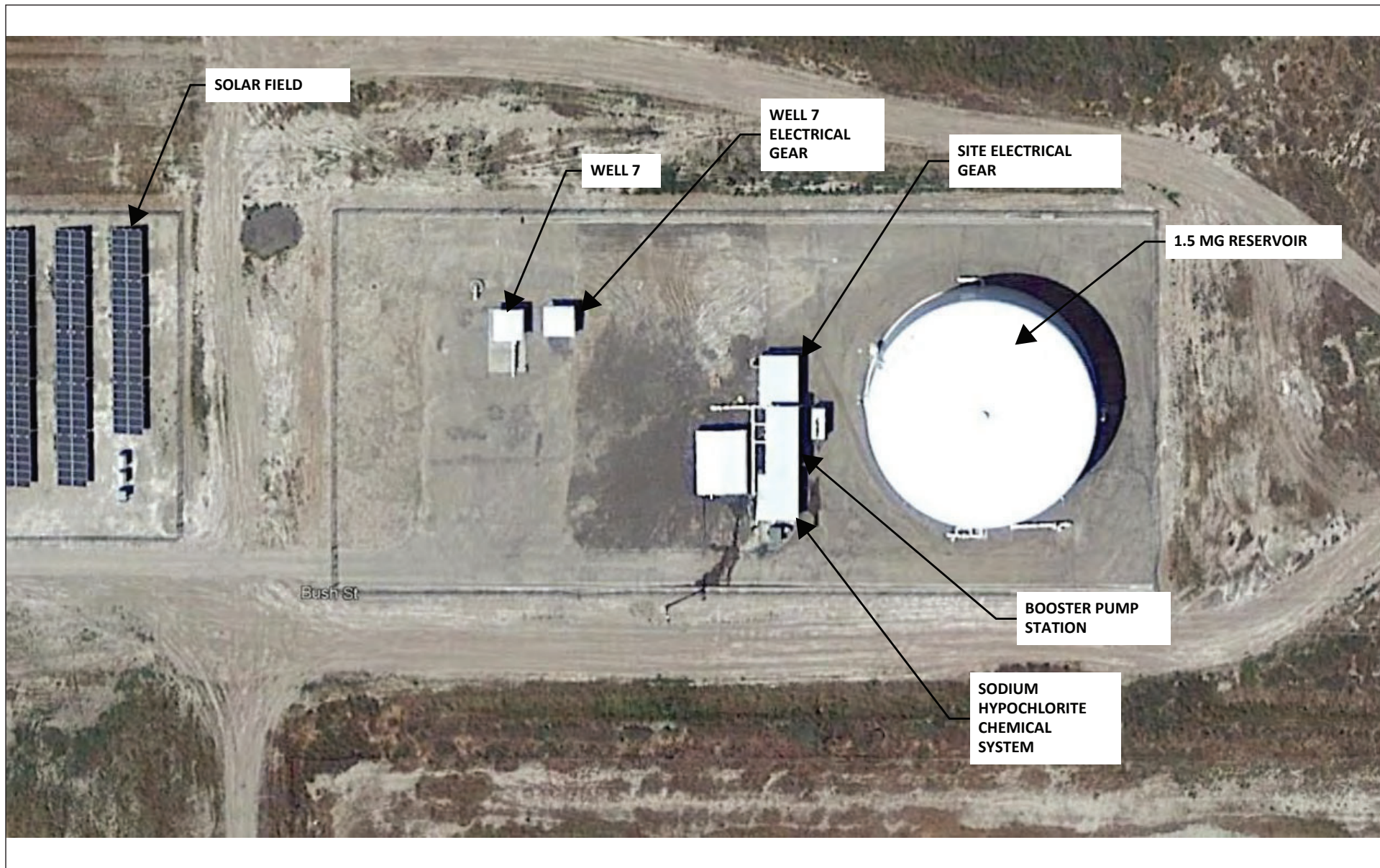
FIGURE 2-3

City of Lemoore Water Treatment Plants Project  
Well Site 11 Location

SOURCES: GOOGLE EARTH, 6-30-19; LSA, 2019.

FRE10\P\LMR1901 Lemoore Water Treatment Plant\PRODUCTS\Graphics\Fig\_3.ai (7/17/19)





LSA



NOT TO SCALE

FIGURE 2-4

*City of Lemoore Water Treatment Plants Project*  
*Well Site 7 Existing Conditions*

SOURCE: CAROLLO, JANUARY 2019.

FRE10\P\LMR1901 Lemoore Water Treatment Plant\PRODUCTS\Graphics\Fig\_4.ai (6/28/19)





FIGURE 2-5

LSA



NOT TO SCALE

SOURCE: CAROLLO, JANUARY 2019.

FRE10\P\LMR1901 Lemoore Water Treatment Plant\PRODUCTS\Graphics\Fig\_5.ai (6/28/19)

City of Lemoore Water Treatment Plants Project  
Well Site 11 Existing Conditions

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## 2.2 PROPOSED PROJECT

### 2.2.1 Process Description

This section provides a basic description of the treatment processes that are proposed for both the Station 7 WTP and Station 11 WTP. These processes are listed below in order of their proposed treatment sequence.

1. pH Reduction
2. Ozone Injection
3. Granular Activated Carbon (GAC) Filtration
4. Ion Exchange Filtration
5. pH Stabilization
6. Disinfection

#### 2.2.1.1 pH Reduction

The proposed WTPs would decrease pH at the plant influent at Station 7 to approximately 7.5 and Station 11 to approximately 8.0 from the current range of 8.9 – 9.2 to 7.5 to minimize the formation of bromate during subsequent ozonation such that the maximum contaminant level is not exceeded. Bromate in the presence of organics leads to the formation of disinfection byproducts, which are regulated as a drinking water contaminant. pH reduction would be achieved through dosing of 93 percent sulfuric acid.

The acid would be stored onsite in a carbon steel tank and would be pumped into the influent pipeline upstream of a static mixer.

#### 2.2.1.2 Ozone Injection

Ozone would be used to begin the process of breaking down naturally occurring TOC to improve the effectiveness of subsequent treatment steps and to reduce color and provide dissolved oxygen in the water. An onsite ozone generation system utilizing sidestream injection would be used. Ozone would be generated using 100 percent liquid oxygen, stored onsite in a cryogenic tank, and would be converted to gaseous oxygen with a pressure reducing station.

#### 2.2.1.3 GAC Filtration

GAC filtration in combination with ozone would assist in the removal of TOC, ammonia, particulate iron, sulfur, and turbidity. Removal of TOC and ammonia would occur through biological degradation resulting from biofilm that grows on the GAC media. The remaining chemicals would be removed through physical separation (filtration). The Station 7 WTP system would use six pressure vessels and the Station 11 WTP system would use 12 pressure vessels. The pressure vessels at each station would be filled with a dual layer of media consisting of ADGS+ media for filtration overlain by GAC media and would be operated in parallel and at a constant rate in which plant flow is split

evenly across the vessels. The pressure vessels would be backwashed based on total cumulative flow and filter head loss set-points. Backwash water would be supplied by the City's distribution system and backwash flow would be equalized into an equalization tank for subsequent discharge into the sewer system.

#### 2.2.1.4 Ion Exchange

The project would include an ion exchange system with TOC-selective anion resin to provide additional TOC removal. The Station 7 WTP system would use six ion exchange pressure vessels and the Station 11 WTP system would use 12 pressure vessels for handling maximum plant flow rates. The ion exchange vessels would be operated in parallel and at a constant rate similar to GAC filtration. The ion exchange resin would be regenerated using saline brine based on a total cumulative flow set-point. Regeneration would occur via an onsite brine maker and brine transfer system. At Station 7, some of the non-brine portions of the ion exchange process would be disposed into the sewer and brine waste would be stored onsite in an equalization tank for subsequent management offsite. For Station 11, brine waste would undergo an additional coagulation and settlement process to precipitate arsenic which also occurs naturally in the wells feeding the plant. Once arsenic is removed, the spent brine would be disposed of offsite. Arsenic sludge would be characterized, sufficiently dried, and periodically disposed of offsite. The City estimates that two loads of liquid brine would be off-hauled daily (one load from each site) to the East Bay Municipal Utility District (EBMUD) facility and one load of dewatered solid arsenic/brine wastes would be off-hauled every 3 months to Waste Management Kettleman Hills Landfill.

#### 2.2.1.5 pH Stabilization

pH stabilization would be performed by dosing 50 percent caustic soda solution to increase the pH to at least 8.5. Caustic soda would be stored at both sites in a polyethylene tank and would be pumped into the effluent pipeline upstream of a static mixer. All chemical storage would be within proper secondary containment.

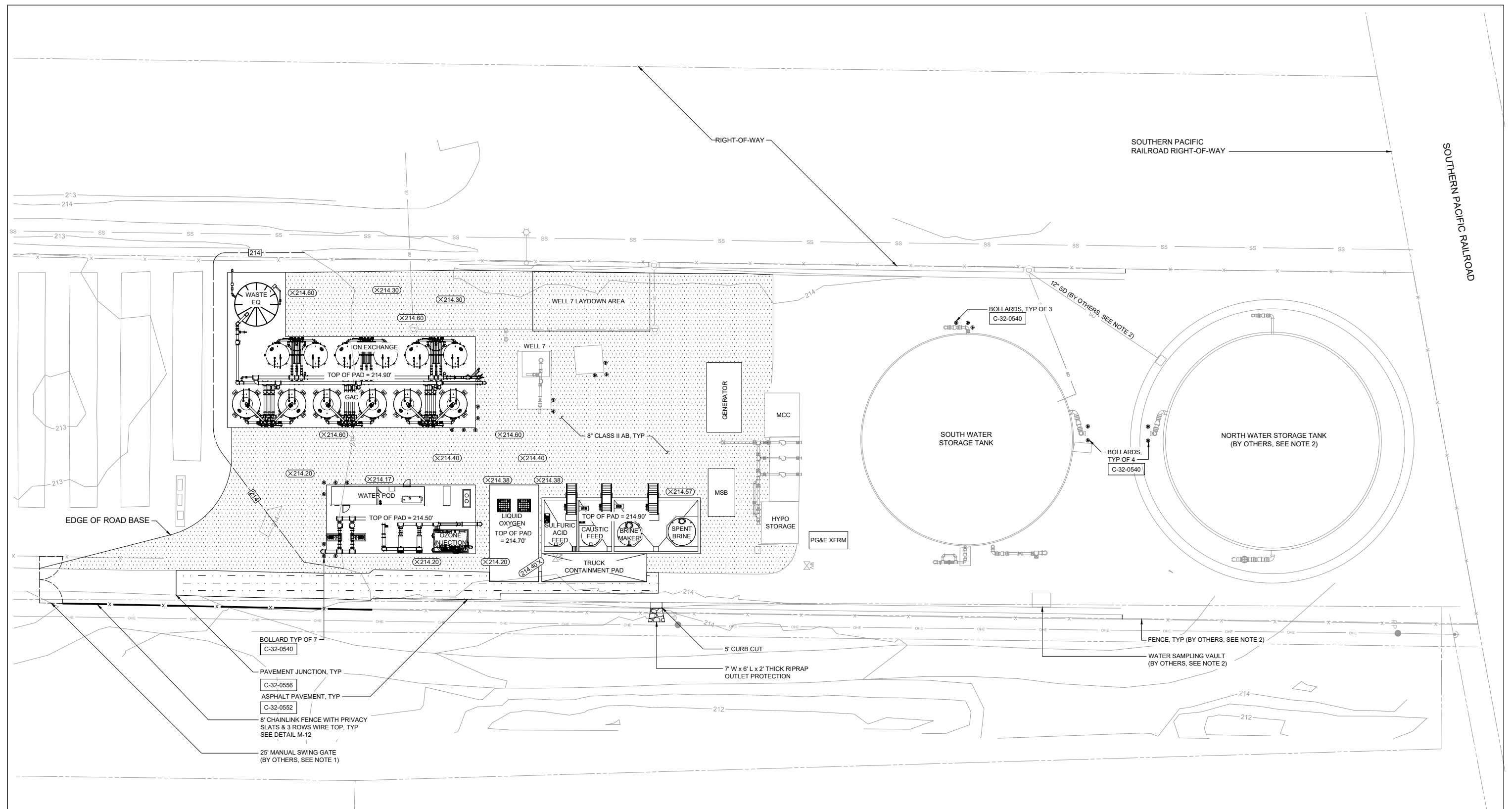
#### 2.2.1.6 Disinfection

The existing sodium hypochlorite chemical injection system at Site 7 and Site 11 would be utilized at the plant effluent by moving the dosing point from its present location to just downstream of the caustic soda injection point.

### 2.2.2 Well Site 7 Layout and Process Considerations

The Station 7 WTP has been designed to accommodate between 1,750 gallons per minute (gpm) and 3,500 gpm of flow. Water would flow to the WTP directly from the City's groundwater wells that currently feed the site (Wells 7, 13, and 14) and pressure would be boosted at the WTP to provide adequate pressure to transfer the water through each treatment process and into the onsite storage reservoir.

The Station 7 WTP would be located between Well 7 and the solar field. The size of the new WTP would be approximately 240 feet by 130 feet. A new 1.5 MG reservoir is currently being construction north of the existing reservoir. The Station 7 WTP layout is shown in Figure 2-6.



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SOURCE: CITY OF LEMOORE, JULY 2019.

FRE10\P\LMR1901 Lemoore Water Treatment Plant\PRODUCTS\Graphics\Fig\_6.ai (8/20/19)

FIGURE 2-6

City of Lemoore Water Treatment Plants Project  
Water Treatment Plant Station 7 Site Plan

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Influent water from Wells 7, 13, and 14 would enter the treatment facility from the southeast. The plant influent line would connect into the existing 12-inch line from Wells 13 and 14. The Well 7 discharge line would also connect into the existing Wells 13/14 line. Treated water would exit the plant at the northeast. A new line would be constructed to connect into the portion of the Well 7 and Well 13 and 14 lines that go to the storage reservoir. Both of these lines would be needed when the plant is operating at full production capacity. Provisions would be made to provide a connection between these two lines and the new storage reservoir.

The Station 7 WTP site would locate chemical tanks on the east side, close to the access road. Chemical delivery trucks would park and offload next to the chemical tanks. Parking would be provided along the drive areas adjacent to the pressure vessel area and north of the WTP in the paved area.

The sulfuric acid and caustic soda tanks would be enclosed on three sides with a specially-coated concrete masonry unit (CMU) wall and the fourth side with chain link fencing that includes privacy slats and three-strand barb wire. Eight-foot-tall fencing with privacy slats and three-strand barb wire would also be added around the complete perimeter of the Well 7 Site to provide site security.

### **2.2.3 Well Site 11 Layout and Process Considerations**

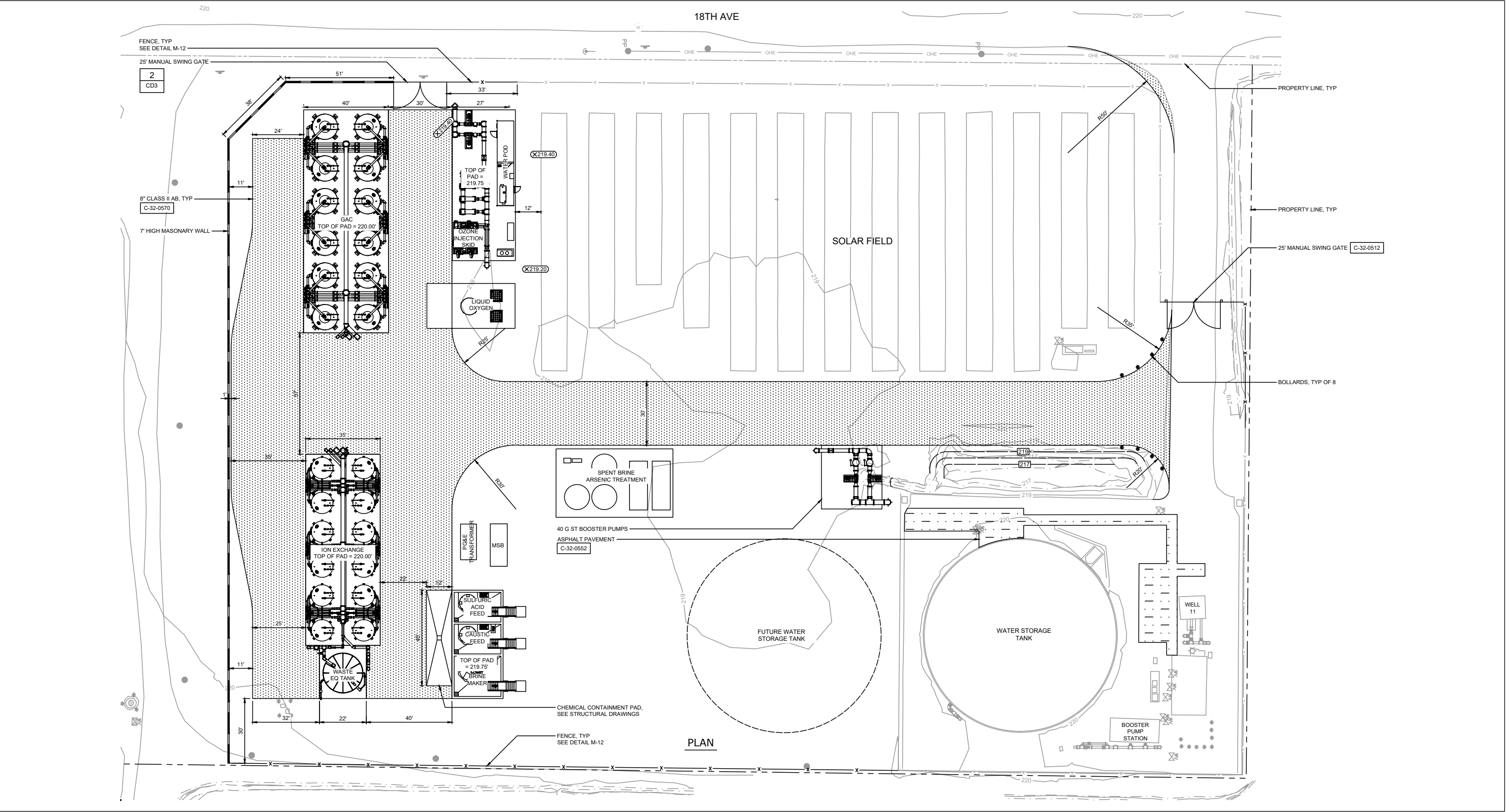
The Station 11 WTP has been designed to accommodate between 3,500 gpm and 7,000 gpm. Water would flow to the WTP directly from the City's groundwater wells that currently feed the site (Wells 2, 4, 5, 6, 10, and 11) and pressure would be boosted at the WTP to provide adequate pressure to transfer the water through each treatment process and into the onsite storage reservoir.

The Station 11 WTP would be located south of the Well 11 Water Storage Reservoir. Space is reserved for a potential second water storage reservoir immediately south of the existing Water Storage Reservoir. The size of the new WTP would be approximately 120 feet by 280 feet. The Station 11 WTP layout is shown in Figure 2-7.

Influent water from Wells 2, 4, 5, and 6 would enter the treatment facility from the north wellfield in an 18-inch line west of the WTP site. Flow into the WTP would connect into the existing 18-inch north wellfield line and run south of the existing solar field to the new treatment facility. A new line would be needed to bring water from the Well 11 transmission line and tie-in to the new plant influent line. This line should be designed for Well 11 capacity plus approximately 2,000 gpm of future flow from a future well. A new line would be needed to connect Well 11 into the new plant influent line.

The City indicated the design of a new north wellfield line is in process with plans for construction in the near future. This new line is being designed to accommodate 3,000 gpm from the north wellfield and 1,200 gpm from Well 11. The new line would also be extended to the south side of the solar field with connections provided for a Well 11 tie-in and a tie-in to the new plant influent line. This analysis assumes this new north wellfield line would not be completed before the Station 11 WTP. As such, accommodations have been made to provide a tie-in point on the new WTP influent line for the future north wellfield line.

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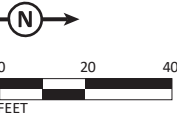


FIGURE 2-7

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Treated water would exit the Station 11 WTP at the north side and would run west of the future storage reservoir to a vault that houses a new chlorine injection point. From this vault, a future stubout would be provided for the future reservoir. The treated water line would extend from the vault and connect to the existing tank at blend line and north wellfield connection points. Both of these connections would be necessary to accommodate maximum plant flow rates.

Entrance to the site would continue to occur at the north end at the current entrance to the Well 11 Site. The project includes the construction of a road that would run east of the solar field to the Station 11 WTP.

The Station 11 WTP site would locate chemical tanks on the east side, close to the access road. Chemical delivery trucks would park and offload next to the chemical tanks. Parking would be provided along the drive areas adjacent to the pressure vessel area and north of the WTP in the paved area.

The sulfuric acid and caustic soda tanks would be enclosed on three sides with a CMU wall and the fourth side with chain link fencing that includes privacy slats and three-strand barb wire. Eight-foot-tall fencing with privacy slats and three-strand barb wire would also be added around the complete perimeter of the Well 11 Site to provide site security. In addition, a 7-foot-tall CMU wall would be added along the southern border of the site, approximately 80-feet along 18th Street, to screen the residential area from the Station 7 WTP.

#### **2.2.4 Project Operation**

The proposed WTPs would both operate 18 to 24 hours a day 7 days a week and staff operations would occur 4 hours day, Monday through Friday. Current staff visits to the site would remain the same at both well sites with implementation of the proposed project. Two maintenance workers would continue to visit the sites daily.

As identified above, both sites would have chain link fencing with privacy slats and three-strand barb wire or CMU walls would constructed around the complete perimeters to provide site security. In addition, both sites would have lighting that would provide complete coverage around the sites. A portion of the lighting would be security lighting that would turn on and off based on photovoltaic sensors. The remaining lighting would be operated from a single switch in the control rooms.

Each site would include various safety equipment, including wall mounted fire extinguishers in the control room and ozone generator room, emergency shower/eye wash systems within the sulfuric acid and caustic soda spill prevention areas, ozone and oxygen gas detection equipment wired to an audible alarm in the control room control room and ozone generator room, and two emergency stop push buttons at each site that immediately shut down the WTPs.

#### **2.2.5 Construction**

Construction for both WTPs would occur on City-owned land and within the boundaries of the existing well sites. Both well sites would continuously operate throughout the entire duration of construction. Construction of the proposed project would begin October 2019 and would be

completed by November 2020. Construction activities and equipment for both of WTPs includes the following:

- Shallow soil excavation and re-compaction using bulldozers;
- Limited trenching for conveyance pipelines and electrical duct bank installation using backhoes;
- Forming and pouring of concrete foundation slabs and equipment pads using typical equipment;
- Installation of process vessels, tanks and electrical power and controls using a crane and reach-lift; and
- Site resurfacing including minor paving using typical equipment.

All site utilities would be located before digging and the contractor would coordinate with Pacific Gas & Electric (PG&E) when digging within 10 feet of overhead power poles. The Station 7 WTP may require relocation of the Well 7 pump-to-waste drain, solar field electrical feed line to the existing electrical panels, stormwater manhole, and fencing along the south side to accommodate the Station 7 WTP. The Station 11 WTP would require relocation of the irrigation system backflow device and control boxes, fencing along the south side of the storage reservoir, and fencing along the south and east side of the solar field to accommodate the Station 11 WTP.

At the Station 7 WTP, all process equipment would be placed on concrete slab on grade pads. All other areas would consist of a compacted road base. To minimize excavation and grading, the WTP area would slope from north to south similar to the existing slope. Stormwater collection points would be provided and tie into the existing stormwater system. Concrete surfaces without spill containment curbs would be sloped at 1 to 2 percent to facilitate drainage. The total ground disturbance area for the Station 7 WTP would be approximately 27,000 square feet with a maximum excavation depth of 5 feet. Approximately 500 cubic yards of soil off-haul would be required.

At the Station 11 WTP, all process equipment would be placed on concrete slab on grade pads. All other areas would consist of a compacted road base. To minimize excavation and grading, the WTP area would slope from north to south similar to the existing slope. Stormwater collection points would be provided and tie into the existing stormwater system. The existing Well 11 site contains a detention pond to capture stormwater. Concrete surfaces without spill containment curbs would be sloped at 1 to 2 percent to facilitate drainage. The total ground disturbance area for the Station 11 WTP would be approximately 47,000 square feet with a maximum excavation depth of 5 feet. Approximately 750 cubic yards of soil off-haul would be required.

## 2.3 APPROVALS/PERMITS

While the City is the CEQA Lead Agency for the project, other agencies also have discretionary authority related to the project and approvals, or serve as a responsible and/or trustee agency in connection to the project. A list of these agencies and potential permits and approvals that may be required is provided below.

- City of Lemoore, adoption of the IS/MND
- City of Lemoore, demolition, grading and public works and/or building permit approval
- City of Lemoore approval for water, wastewater, and stormwater connections
- California State Water Resources Control Board Division of Drinking Water (e.g., permits to operate)
- San Joaquin Valley Air Pollution Control Board (e.g., Dust Control Plan Approval letter and compliance with Rule 9510 – Indirect Source Review)
- Central Valley Regional Water Quality Control Board

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### 3.0 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 in Chapter 4.0.

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Aesthetics                | <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Air Quality                        |
| <input type="checkbox"/> Biological Resources      | <input type="checkbox"/> Cultural Resources                 | <input type="checkbox"/> Energy                             |
| <input type="checkbox"/> Geology/Soils             | <input type="checkbox"/> Greenhouse Gas Emissions           | <input type="checkbox"/> Hazards & Hazardous Materials      |
| <input type="checkbox"/> Hydrology/Water Quality   | <input type="checkbox"/> Land Use/Planning                  | <input type="checkbox"/> Mineral Resources                  |
| <input type="checkbox"/> Noise                     | <input type="checkbox"/> Population/Housing                 | <input type="checkbox"/> Public Services                    |
| <input type="checkbox"/> Recreation                | <input type="checkbox"/> Transportation                     | <input type="checkbox"/> Tribal Cultural Resources          |
| <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Wildfire                           | <input type="checkbox"/> Mandatory Findings of Significance |

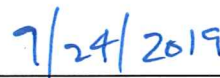
### 3.1 DETERMINATION

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 ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



Frank Rivera, Public Works Director



Date

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## 4.0 CEQA ENVIRONMENTAL CHECKLIST

### 4.1 AESTHETICS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a. Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### 4.1.1 Impact Analysis

##### a. *Would the project have a substantial effect on a scenic vista?*

According to the City of Lemoore General Plan<sup>1</sup>, the most identifying feature leading the City's sense of place is its location amid lush, natural landscape in the flat plains of Kings County. In addition, views of the surrounding pasture and crop rows are considered important aesthetics in the City.

The proposed project would include the installation of WTPs at Well Site 7 and Well Site 11. Well Site 7 is located on the west side of the City along Bush Street across the street from West Hills College. Well Site 7 currently consists of a 1.5 MG storage reservoir, a booster pump station, a sodium hypochlorite chemical feed system, Well 7, and a solar field. In addition, a new 1.5 MG reservoir is in the process of being constructed north of the existing water storage reservoir.

Well Site 11 is located on the north side of the City at the northeast corner of the intersection of Glendale Avenue and 18<sup>th</sup> Avenue. Well Site 11 consists of a 0.9 MG storage reservoir, a booster pump station, a sodium hypochlorite chemical feed system, Well 11, and a solar field. The City has plans to construct a new 0.9 MG storage reservoir on the south side of the existing reservoir. The site also has a stormwater detention basin located on the west side of the existing storage reservoir.

None of the visual changes that would result from implementation of the proposed project would result in a substantial adverse effect on a scenic vista. Planned improvements associated with the WTPs at each site include chemical tanks, access roads and parking, landscaping, fencing, and lighting. The most evident new feature within viewsheds would be the chemical tanks; however, the

<sup>1</sup> Lemoore, City of, 2008. *City of Lemoore 2030 General Plan*. May.

chemical tanks would not be of such physical prominence that their presence would significantly affect a scenic vista. In addition, the planned improvements would be consistent in visual character with the existing facilities at the well sites.

During construction of planned improvements, additional vehicles, workers, and materials coming to and from the well sites, and site preparation activities would be visible from travelers along adjacent roadways and from adjacent uses. However, construction activities would occur within the existing well sites and would be intermittent and of relatively short duration.

Planned improvements would not include any tall structures or landscaping that would reduce, obstruct, or degrade scenic vistas. Therefore, the implementation of the proposed project would have a less-than-significant impact on scenic vistas.

*b. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?*

The California Department of Transportation (Caltrans) Landscape Architecture Program administers the Scenic Highway Program, contained in the State Streets and Highways Code, Sections 260–263. State highways are classified as either Eligible for Scenic Designation, Officially Designated, or Connecting Federal Highway. The proposed project is not located within a State Scenic Highway and would not damage scenic resources within such a highway. Therefore, the proposed project would have no impact.

*c. In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?*

Implementation of the proposed project could result in the following visual changes to both well sites: chemical tanks, fencing, gates, access roads, parking, lighting, and signage. Located within existing well sites, the planned improvements are appropriate for these locations and would be visually compatible with the character of the well sites. Therefore, the visual character of the sites would not be degraded because the sites would maintain their existing character as well sites with treatment facilities. Therefore, implementation of the proposed project would not substantially degrade the existing visual character of the site or the surrounding area. This impact would be less than significant.

*d. Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?*

Glare is the result of improperly aimed or blocked lighting sources that are visible against a dark background such as the night sky. Glare may also refer to the sensation experienced looking into an excessively bright light source that causes a reduction in the ability to see or causes discomfort. Glare generally does not result in illumination of off-site locations but results in a visible source of light viewable from a distance.



Site lighting on both sites would be designed to provide complete coverage around the sites. A portion of the lighting would be security lighting that would turn on and off based on photovoltaic sensors and the remaining lighting would be operated from a single switch in the control room at each site. All exterior lighting would be light-emitting diode fixtures and would comply with Title 24 Part 6 of the California Energy Code. The street lighting would be designed to be consistent with the standards to avoid the creation of intrusive lighting and glare within the immediate project area. Therefore, light and glare impacts would be considered less than significant.

## 4.2 AGRICULTURE AND FORESTRY RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 4.2.1 Impact Analysis

- a. Would the project 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?*

Both Well Site 7 and Well Site 11 are classified as Urban and Built-Up Land.<sup>2</sup> The project sites are not zoned for agricultural uses and are not enrolled in a Williamson Act Contract.<sup>3</sup> The project sites are not located on land that is designated as Prime Farmland or Farmland of State Importance. Therefore, implementation of the proposed project would not result in the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the Kings County Important Farmland Map, to a non-agricultural use. As such, implementation of the proposed project would result in no impact to agricultural resources.

- b. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?*

The Land Use Element of the City of Lemoore General Plan currently designates Well Site 7 as Public/Institutional and designates Well Site 11 as Transportation/Utilities/ROW. The zoning designation for Well Site 7 is Public Services and Community Facilities (CF) and Medium Density Residential (RMD) and the zoning designation for Well Site 11 is Parks and Recreation/Ponding Basin (PR). In addition, the project sites are not zoned for agricultural uses and are not enrolled in a

<sup>2</sup> California Department of Conservation, 2016. *Kings County Important Farmland 2016*.

<sup>3</sup> Ibid.

Williamson Act Contract. Therefore, the proposed project would have no impact on zoning designations for agricultural and farmland use or land currently under a Williamson Act contract.

- c. Would the project 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))?*

The project sites are not zoned for, nor would they require the rezoning of, any existing parcels or land use designations, including forest land or timberland uses. In addition, there is no forest land or timberland subject to the Public Resources Code within the vicinity of the project sites. Therefore, the proposed project would have no impact to forestland or timberland.

- d. Would the project result in the loss of forest land or conversion of forestland to non-forest use?*

See Response 4.2.1.c. The proposed project would not convert forest land to non-forest use and would not result in the loss or conversion of forest land to a non-forest use.

- e. Would the project 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?*

As stated previously, the project sites are currently utilized as existing well sites, and therefore would not convert farmland to a non-agricultural use. In addition, the project sites would not contribute to environmental changes that would result in conversion of farmland to non-agricultural use. Therefore, no impacts to farmland or forest land would occur.

### 4.3 AIR QUALITY

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### 4.3.1 Impact Analysis

##### *a. Would the project conflict with or obstruct implementation of the applicable air quality plan?*

The City of Lemoore is part of the San Joaquin Valley Air Basin (SJVAB), which is within the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). The SJVAPCD is responsible for air quality regulation within the eight-county San Joaquin Valley region.

Both the State of California (State) and the federal government have established health-based Ambient Air Quality Standards (AAQS) for six criteria air pollutants: carbon monoxide (CO), ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), lead, and suspended particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>). The SJVAB is designated as non-attainment for O<sub>3</sub> and PM<sub>2.5</sub> for federal standards and non-attainment for O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> for State standards.

Air quality monitoring stations are located throughout the nation and maintained by the local air districts and State air quality regulating agencies. Data collected at permanent monitoring stations are used by the U.S. Environmental Protection Agency (USEPA) to identify regions as “attainment” or “nonattainment” depending on whether the regions meet the requirements stated in the applicable National Air Quality Standards (NAAQS). Nonattainment areas are imposed with additional restrictions as required by the USEPA. In addition, different classifications of attainment, such as marginal, moderate, serious, severe, and extreme, are used to classify each air basin in the State on a pollutant-by-pollutant basis. The classifications are used as a foundation to create air quality management strategies to improve air quality and comply with the NAAQS. The SJVAB attainment statuses for each of the criteria pollutants are listed in Table 4.A.

**Table 4.A: SJVAB Air Quality Attainment Status**

Pollutant	State	Federal
Ozone (1-hour)	Severe/Nonattainment	Standard Revoked
Ozone (8-hour)	Nonattainment	Extreme Nonattainment
PM <sub>10</sub>	Nonattainment	Attainment (Maintenance)
PM <sub>2.5</sub>	Nonattainment	Nonattainment
Carbon Monoxide	Attainment	Attainment (Maintenance)
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Lead	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified
Sulfates	Attainment	No Federal Regulation
Hydrogen Sulfide	Unclassified	No Federal Regulation

Source: San Joaquin Valley Air Pollution Control District (2016).

An air quality plan describes air pollution control strategies to be implemented by a city, county, or region classified as a non-attainment area. The main purpose of the air quality plan is to bring the area into compliance with the requirements of the federal and State air quality standards. To bring the San Joaquin Valley into attainment, the SJVAPCD adopted the 2016 Plan for the 2008 8-Hour Ozone Standard in June 2016 to satisfy Clean Air Act requirements and ensure attainment of the 75 parts per billion 8-hour ozone standard.<sup>4</sup>

To assure the SJVAB's continued attainment of the USEPA PM<sub>10</sub> standard, the SJVAPCD adopted the 2007 PM<sub>10</sub> Maintenance Plan in September 2007.<sup>5</sup> The SJVAPCD adopted the 2018 Plan for the 1997, 2006, and 2012 PM<sub>2.5</sub> Standards in November 2018 to address the USEPA 1997 annual PM<sub>2.5</sub> standard of 15 µg/m<sup>3</sup> and 24-hour PM<sub>2.5</sub> standard of 65 µg/m<sup>3</sup>, the 2006 24-hour PM<sub>2.5</sub> standard of 35 µg/m<sup>3</sup>, and the 2012 annual PM<sub>2.5</sub> standard of 12 µg/m<sup>3</sup>.<sup>6</sup>

CEQA requires that certain proposed projects be analyzed for consistency with the applicable air quality plan. For a project to be consistent with SJVAPCD air quality plans, the pollutants emitted from a project should not exceed the SJVAPCD emission thresholds or cause a significant impact on air quality. In addition, emission reductions achieved through implementation of offset requirements are a major component of the SJVAPCD air quality plans.

As discussed below, development of the WTPs would not result in the generation of criteria air pollutants that would exceed SJVAPCD thresholds of significance. Therefore, the proposed project would not conflict with or obstruct implementation of SJVAPCD air quality plans.

<sup>4</sup> San Joaquin Valley Air Pollution Control District, 2016. *2016 Plan for the 2008 8-Hour Ozone Standard*. June 16. Website: [www.valleyair.org/Air\\_Quality\\_Plans/Ozone-Plan-2016.htm](http://www.valleyair.org/Air_Quality_Plans/Ozone-Plan-2016.htm) (accessed July 2019).

<sup>5</sup> San Joaquin Valley Air Pollution Control District, 2007. *2007 PM<sub>10</sub> Maintenance Plan and Request for Redesignation*. Available online at: [www.valleyair.org/Air\\_Quality\\_Plans/docs/Maintenance%20Plan10-25-07.pdf](http://www.valleyair.org/Air_Quality_Plans/docs/Maintenance%20Plan10-25-07.pdf) (accessed July 2019).

<sup>6</sup> San Joaquin Valley Air Pollution Control District, 2018. *2018 Plan for the 1997, 2006, and 2012 PM<sub>2.5</sub> Standards*. November 15. Available online at: [valleyair.org/pmplans/documents/2018/pm-plan-adopted/2018-Plan-for-the-1997-2006-and-2012-PM2.5-Standards.pdf](http://valleyair.org/pmplans/documents/2018/pm-plan-adopted/2018-Plan-for-the-1997-2006-and-2012-PM2.5-Standards.pdf) (accessed July 2019).

*b. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?*

As identified above, the SJVAB is designated as non-attainment for O<sub>3</sub> and PM<sub>2.5</sub> for federal standards and non-attainment for O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> for State standards. The SJVAPCD's nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of AAQS. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, the SJVAPCD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is not necessary. The following analysis assesses the potential project-level air quality impacts associated with construction and operation of the proposed project.

**Short-Term (Construction) Emissions.** During construction, short-term degradation of air quality may occur due to the release of particulate emissions generated by grading, paving, building, and other activities. Emissions from construction equipment are also anticipated and would include CO, nitrogen oxides (NO<sub>x</sub>), reactive organic gases (ROG), directly-emitted particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>), and toxic air contaminants (TACs) such as diesel exhaust particulate matter.

Project construction activities would include grading, paving, and building activities. Construction-related effects on air quality from the proposed project would be greatest during the site preparation phase due to the disturbance of soils. If not properly controlled, these activities would temporarily generate particulate emissions. Sources of fugitive dust would include disturbed soils at the construction site. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM<sub>10</sub> emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM<sub>10</sub> emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of operating equipment. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

Water or other soil stabilizers can be used to control dust, resulting in emission reductions of 50 percent or more. The SJVAPCD has implemented Regulation VIII measures for reducing fugitive dust emissions (PM<sub>10</sub>). With the implementation of Regulation VIII measures, fugitive dust emissions from construction activities would not result in adverse air quality impacts.

In addition to dust-related PM<sub>10</sub> emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO<sub>2</sub>, NO<sub>x</sub>, ROG, and some soot particulate (PM<sub>2.5</sub> and PM<sub>10</sub>) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles idle in traffic. These emissions would be temporary in nature and limited to the immediate area surrounding the construction site.

The California Emissions Estimator Model (CalEEMod), Version 2016.3.2, was used to estimate construction emissions for the proposed project. Construction of the proposed project would begin October 2019 and would be completed by November 2020. Construction activities and equipment for both of WTPs includes the following:

- Shallow soil excavation and re-compaction using bulldozers;
- Limited trenching for conveyance pipelines and electrical duct bank installation using backhoes;
- Forming and pouring of concrete foundation slabs and equipment pads using typical equipment;
- Installation of process vessels, tanks and electrical power and controls using a crane and reach-lift; and
- Site resurfacing including minor paving using typical equipment.

The total ground disturbance area for the Station 7 WTP would be approximately 27,000 square feet and approximately 500 cubic yards of soil off-haul would be required and the total ground disturbance area for the Station 11 WTP would be approximately 47,000 square feet and approximately 750 cubic yards of soil off-haul would be required, which was included in the CalEEMod analysis. Results, summarized in Table 4.B, were compared to SJVAPCD thresholds of significance for construction impacts. CalEEMod output sheets are included in Appendix A.

**Table 4.B: Project Construction Emissions (Tons per Year)**

	CO	NO <sub>x</sub>	ROG	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Project Construction Emissions	0.3	2.5	2.1	<0.1	0.3	0.2
SJVAPCD Significance Threshold	100.0	10.0	10.0	27.0	15.0	15.0
<b>Exceed Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Source: LSA (July 2019).

In addition to the construction period thresholds of significance, the SJVAPCD has implemented Regulation VIII measures for dust control during construction. These control measures are intended to reduce the amount of PM<sub>10</sub> emissions during the construction period. Implementation of Mitigation Measure AIR-1 would ensure that the proposed project complies with Regulation VIII and further reduces the short-term construction period air quality impacts.

**Mitigation Measure AIR-1:**

Consistent with SJVAPCD Regulation VIII (Fugitive PM<sub>10</sub> Prohibitions), the following controls are required to be included as specifications for the proposed project and implemented at the construction site:

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.
- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.
- When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least 6 inches of freeboard space from the top of the container shall be maintained.
- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.)
- Following the addition of materials to, or the removal of materials from, the surface of out-door storage piles, said piles shall be effectively stabilized of fugitive dust emission utilizing sufficient water or chemical stabilizer/suppressant.

**Long-Term (Operational) Emissions.** Long-term air pollutant emission impacts are those associated with mobile sources (e.g., vehicle trips), energy sources (e.g., electricity), and area sources (e.g., landscape maintenance equipment use) related to the proposed project. The proposed project would also generate stationary source emissions associated with a future generator at the Station 7 WTP.

PM<sub>10</sub> emissions result from running exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM<sub>10</sub> occurs when vehicle tires pulverize small rocks and pavement and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other PM emission processes. Gasoline-powered engines have small rates of particulate matter emissions compared with diesel-powered vehicles.



Energy source emissions typically result from activities in buildings for which electricity and natural gas are used. The quantity of emissions is the product of usage intensity (i.e., the amount of electricity or natural gas) and the emission factor of the fuel source. Sources of energy demand for the proposed project could include mechanical systems, such as lighting, booster pumps, and process equipment. Area source emissions associated with the project would include emissions from the use of architectural coatings and maintenance equipment. The proposed project would also generate stationary source emissions associated with a future emergency backup generator at the Station 7 WTP.

Long-term operational emissions associated with the proposed project were estimated using CalEEMod and are shown in Table 4.C, below. For purposes of evaluating the proposed project, the air district in CalEEMod was specified as the SJVAPCD and the climate zone of 2 was selected. Based on this climate zone, CalEEMod assumed a wind speed of 2.7 meters per second and precipitation frequency of 45 days per year. The operational year was assumed to be 2020. The utility company for the region was selected as PG&E and the CO<sub>2</sub> intensity was determined to be 328.8 pounds per megawatt hour based on a five-year average estimated by PG&E.

To reflect the paving that would occur as part of the project, the CalEEMod analysis assumed 27,000 square feet of parking lot uses for WTP 7 and 47,000 square feet of parking lot uses for WTP 11. Trip generation rates for the project assumed that current staff visits to the site would remain the same at both well sites, truck trips associated with the two loads of liquid brine that would be off-hauled daily (one load from each site) to the EBMUD facility, and one load of solid arsenic/brine wastes that would be off-hauled every 3 months to Waste Management Kettleman Hills Landfill. In addition, the proposed project would include a future emergency backup generator at the Station 7 WTP, which was included in the CalEEMod analysis. Where project-specific data were not available, default assumptions from CalEEMod were used to estimate project emissions. Model results are shown in Table 4.C. CalEEMod output sheets are included in Appendix A.

The primary emissions associated with the project are regional in nature, meaning that air pollutants are rapidly dispersed on release or, in the case of vehicle emissions associated with the project; emissions are released in other areas of the Air Basin. The annual emissions associated with project operational trip generation, energy, and area sources are identified in Table 4.C for ROG, NO<sub>x</sub>, CO, SO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>.

**Table 4.C: Project Operation Emissions (Tons per Year)**

	ROG	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Area Source Emissions	0.01	<0.01	<0.01	0.00	0.00	0.00
Energy Source Emissions	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Mobile Source Emissions	<0.01	0.04	<0.01	<0.01	<0.01	<0.01
Stationary Source Emissions	0.01	0.02	0.03	<0.01	<0.01	<0.01
Total Project Operation Emissions	0.01	0.06	0.03	<0.01	<0.01	<0.01
SJVAPCD Significance Threshold	100.0	10.0	10.0	27.0	15.0	15.0
<b>Exceed Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Source: LSA (July 2019).

As shown in Table 4.C, long-term operational emissions associated with the proposed project would be minimal and would be well below SJVAPCD significance thresholds. Therefore, the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard and impacts would be less than significant. No mitigation is required.

*c. Would the project expose sensitive receptors to substantial pollutant concentrations?*

Sensitive receptors are defined as people that have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential dwelling units. The closest sensitive receptors to Well Site 7 include the planned residential development located approximately 80 feet west of the site boundary and the closest sensitive receptors to Well Site 11 include the single-family residences located approximately 90 feet south of the site boundary.

Construction activities associated with the proposed project would generate airborne particulates and fugitive dust, as well as a small quantity of pollutants associated with the use of construction equipment (e.g., diesel-fueled vehicles and equipment) on a short-term basis. However, construction contractors would be required to implement measures to reduce or eliminate emissions by following SJVAPCD Regulation VIII, as described above. Project construction emissions would be well below SJVAPCD significance thresholds. The proposed project would include a future emergency backup generator at the Station 7 WTP. However, as identified in Table 4.C, project operational emissions of criteria pollutants would be below SJVAPCD significance thresholds; thus, they are not likely to have a significant impact on nearby residences given the distance and the dispersion that would occur. Compliance with SJVAPCD rules would further reduce potential health risk related to a level that is not significant. Therefore, nearby sensitive receptors would not be exposed to a risk that equals or exceeds 20 in one million in regards to carcinogenic TACs. In addition, nearby sensitive receptors would not be exposed to a risk that equals or exceeds a health index of 1 for non-carcinogenic TACs. Therefore, operation emissions from the project would not result in a substantial health risk. The proposed project would not expose sensitive receptors to substantial pollutant concentrations.

*d. Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?*

The SJVAPCD addresses odor criteria within the Guidance for Assessing and Mitigating Air Quality Impacts. The district has not established a rule or standard regarding odor emissions, rather, the district has a nuisance rule: "Any project with the potential to frequently expose members of the public to objectionable odors should be deemed to have a significant impact." Heavy-duty equipment in the project area during construction would emit odors, primarily from the equipment exhaust. However, the construction activity would cease to occur after individual construction is completed. Stored hazardous materials are regulated under Chapter 50 of the California Fire Code (CFC). Per CFC, hazardous materials must have both double containment and spill protection. As such, the proposed treatment processes are not anticipated to emit any objectionable odors. Any odors in general would be confined mainly to the project site and would readily dissipate. Therefore, objectionable odors affecting a substantial number of people would not occur as a result of the project.

## 4.4 BIOLOGICAL RESOURCES

	Potentially Significant Impact	Less Than Significant with 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 4.4.1 Impact Analysis

A general biological survey of the project site was conducted on July 10, 2019 by LSA biologist Anna Van Zuuk to map plant communities and identify sensitive resources. A list of sensitive wildlife and plant species potentially occurring within the project site was compiled to evaluate potential impacts resulting from project construction. Sources used to compile the list include the California Natural Diversity Database (CNDDDB), the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation Trust Resources, and the California Native Plant Society Online Inventory. These special status species lists were reviewed to determine which species could potentially occur on the project site based on availability of suitable habitat and known occurrences of the species in the area. Record searches are included in Appendix B.

**Well Site 7.** Well Site 7 is approximately 3.14 acres and consists entirely of ruderal/disturbed and developed/barren areas (Figure 4-1). Approximately 1.42 acres of the project site are already developed, including the existing water storage tank, transformer, storage sheds, and other associated structures. A second water storage tank is currently under construction north of the existing tank, although available aerial imagery does not reflect this development. The remaining

1.72 acres are considered ruderal/disturbed and include the existing solar field, a mowed area south of the solar field north of Bush Street, and areas east of the existing access road. These areas are dominated by a variety of native colonizing species, including silverscale saltbush (*Atriplex argentea*), alkali weed (*Cressa truxillensis*), bush seepweed (*Suaeda nigra*), telegraph weed (*Heterotheca grandiflora*), and alkali mallow (*Malvella leprosa*). All areas within the project site are actively managed via mechanical and chemical controls to reduce vegetation height and density.

Wildlife observed on the project site or traveling through the project site was limited to regionally common species such as red tailed hawks (*Buteo jamaicensis*), turkey vulture (*Cathartes aura*), killdeer (*Charadrius vociferous*), black-tailed jackrabbit (*Lepus californicus*), northern mockingbird (*Mimus polyglottos*), Eurasian collared-dove (*Streptopelia decaocto*), Audubon's cottontail (*Sylvilagus audubonii*), and western kingbird (*Tyrannus verticalis*).

Off-site areas surrounding Well Site 7 north of Bush Street can be classified as saltbush scrub, however these areas appear to be periodically disturbed by disking or tilling, likely to reduce fire danger.

No vernal pools, potentially jurisdictional drainage features, wetland/riparian vegetation communities or CNDDB sensitive vegetation communities were found on the project site. Additionally, there are no water bodies or drainage features on the project site that may be subject to jurisdiction by the United States Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and/or California Department of Fish and Wildlife (CDFW).

**Well Site 11.** Well Site 11 is approximately 4.15 acres and consists entirely of ruderal/disturbed and developed/barren areas (Figure 4-2). Approximately 1.86 acres of the project site are already developed, including the existing water storage tank, solar field, pump station, well, and other associated structures. This includes areas surround the existing structures which have less than 5 percent plant cover. The remaining 2.29 acres are considered ruderal/disturbed and include the mowed field south of the existing infrastructure, north of Glendale Avenue. These areas are dominated by a variety of ruderal vegetation, including foxtail barley (*Hordeum murinum*), puncture vine (*Tribulus terrestris*), Bermuda grass (*Cynodon dactylon*), prostrate knotweed (*Polygonum aviculare*), alkali mallow, ripgut brome (*Bromus diandrus*), and johnsongrass (*Sorghum halepense*). Well Site 11 also includes 11 mature, planted trees along the southern edge of the property, which are a mix of ash (*Fraxinus sp.*), Chinese pistache (*Pistacia chinensis*), and Japanese zelkova (*Zelkova serrata*). All areas within the project site are actively managed via mechanical and chemical controls to reduce vegetation height and density.

Wildlife observed on the project site or traveling through the project site was limited to regionally common species such as killdeer, Eurasian collared-dove, and Botta's pocket gopher (*Thomomys bottae*).



Figure 4-1

LSA

LEGEND



Study Area - (3.14 ac)

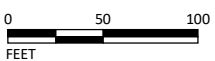
**Plant Communities / Land Uses - (3.14 ac)**



Developed / Barren - (1.42 ac)



Ruderal / Disturbed - (1.72 ac)



SOURCE: DigitalGlobe Aerial Imagery (06/2018); Mapping - LSA (07/2019)

I:\LMR1901\GIS\Reports\Fig4.4-1\_Plant\_comm\_Stn7.mxd (7/29/2019)

*City of Lemoore Water Treatment Plants Project*  
**Plant Communities / Land Uses - Well Site 7**





Figure 4-2

LSA

LEGEND



Study Area - (4.15 ac)



Tree Location

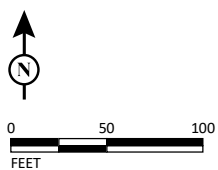
Plant Communities / Land Uses - (4.15 ac)



Developed / Barren - (1.86 ac)



Ruderal / Disturbed - (2.29 ac)



SOURCE: DigitalGlobe Aerial Imagery (06/2018); Mapping - LSA (07/2019)

I:\LMR1901\GIS\Reports\Fig4.4-2\_Plant\_comm\_Stn11.mxd (7/30/2019)

City of Lemoore Water Treatment Plants Project  
Plant Communities / Land Uses - Well Site 11

Areas adjacent to Well Site 11 consist of agricultural fields, with the current crop being alfalfa (*Medicago sativa*), to the north and east, almond orchards to the west, and a residential area to the south.

No vernal pools, potentially jurisdictional drainage features, wetland/riparian vegetation communities or CNDDDB sensitive vegetation communities were found on the project site. Additionally, there are no water bodies or drainage features on the project site that may be subject to jurisdiction by the USACE, RWQCB, and/or CDFW.

The proposed project would be subject to the following regulations.

**Federal Endangered Species Act (FESA).** Under FESA, it is unlawful to “take any species listed as threatened or endangered”. “Take” is defined as to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.” An activity is defined as “take” even if it is unintentional or accidental. Take provisions under FESA apply only to listed fish and wildlife species under the jurisdiction of the USFWS and/or National Marine Fisheries Service (NMFS). Consultation with USFWS or NMFS is required if a project “may affect” a listed species.

When a species is listed, the USFWS and/or the NMFS, in most cases, must officially designate specific areas as critical habitat for the species. Consultation with USFWS and/or the NMFS is required for projects that include a federal action or federal funding if the project may affect designated critical habitat.

**California Endangered Species Act (CESA).** Under the CESA, it is unlawful to “take” any species listed as rare, threatened, or endangered. Under CESA, “take” means to “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”. CESA take provisions apply to fish, wildlife, and plant species. Take may result whenever activities occur in areas that support a listed species. Consultation with CDFW is required if a project will result in “take” of a listed species.

**Migratory Bird Treaty Act (MBTA).** The MBTA prohibits affirmative and purposeful actions that will result in “take” of migratory birds, their eggs, feathers, or nests. “Take” is defined in the MBTA as any means or any manner to hunt, pursue, wound, kill, possess, or transport, any migratory bird, nest, egg, or part thereof.

Migratory birds are also protected, as defined in the MBTA, under Section 3513 of the California Fish and Game Code.

**California Fish and Game Code (Breeding Birds).** Section 3503 of the California Fish and Game Code prohibits the take, possession, or needless destruction of the nest or eggs of any bird, except as otherwise provided by the California Fish and Game Code or other regulation.

- a. Would the project 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?*

No candidate, sensitive, or other special-status species were observed or are known to occur on either the Well Site 7 or Well Site 11 project sites, and no habitat for any candidate, sensitive, or other special-status species occurs on the either site. Therefore, no State or federally listed species would be affected by construction or operation of the proposed project and there would be no impact.

- b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

No riparian habitat or other sensitive natural communities occur on either the Well Site 7 or Well Site 11 project sites. Both project sites consist entirely of developed/barren and ruderal/disturbed areas. Therefore, neither construction nor operation of the proposed project would have an impact on any riparian area or other sensitive natural community.

- c. Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

No aquatic resources, including State or federally protected wetlands, occur on either the Well Site 7 or Well Site 11 project sites. The nearest aquatic resources consist of a series of unnamed agricultural ditches. Therefore, neither construction nor operation of the proposed project would have an impact on State or federally protected wetlands.

- d. Would the project 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?*

Wildlife movement corridors are linear habitats that function to connect two or more areas of significant wildlife habitat. These corridors may function on a local level as links between small habitat patches (e.g., streams in urban settings) or may provide critical connections between regionally significant habitats (e.g., deer movement corridors). Wildlife corridors typically include vegetation and topography that facilitate the movements of wild animals from one area of suitable habitat to another, in order to fulfill foraging, breeding, and territorial needs. These corridors often provide cover and protection from predators that may be lacking in surrounding habitats. Wildlife corridors generally include riparian zones and similar linear expanses of contiguous habitat.

There is no evidence that either project site functions as a significant migration route. Both project sites are either partially or entirely fenced, and the sites and surrounding areas are heavily impacted by human activity (ongoing maintenance, residential and agricultural uses, etc.).



Well Site 11 includes tree canopy from 11 planted trees along the southern boundary which have the potential to support nesting and migratory bird species. Disturbance of migratory birds during their nesting season (February 1 to August 31) could result in “take”, which is prohibited under the Migratory Bird Treaty Act and Section 3513 of the CFGC. Construction of the project is scheduled to begin in October 2019, outside of the nesting bird season, and would be completed by November 2020. The proposed project does not include disturbance or removal of these trees and no nests were observed during the field survey. However, disturbance of nesting birds may still result if construction is paused or otherwise delayed during the nesting bird season, allowing for nests to become established. Mitigation Measure BIO-1 would be implemented in the event that construction is delayed for longer than 10 consecutive days to minimize the potential for take of nesting birds and reduce impacts to a less-than-significant level:

**Mitigation Measure BIO-1:** If work during the nesting season (February 1 to August 31) is delayed for longer than a period of 10 consecutive days, a qualified biologist shall survey all suitable nesting habitat at the project site for presence of nesting birds. If no nesting activity is observed, work may proceed as planned. If an active nest is discovered, a qualified biologist shall evaluate the potential for the project to disturb nesting activities. The evaluation criteria shall include, but not be limited to, the location/orientation of the nest in the nest tree, the distance of the nest from the work area, the line of sight between the nest and the work area, and the feasibility of establishing no-disturbance buffers.

Additionally, the CDFW shall be contacted to review the evaluation and determine if the project can proceed without adversely affecting nesting activities.

If work is allowed to proceed, a qualified biologist shall be on-site weekly during construction activities to monitor nesting activity. The biologist shall have the authority to stop work if it is determined that the project is adversely affecting nesting activities. Monitoring shall continue until the young have fledged or the nest fails, as determined by the qualified biologist.

*e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

The proposed project falls within the City of Lemoore, and is subject to the City’s Municipal Code, specifically Ordinance 7-5 ‘Street Trees’.<sup>7</sup> The proposed project does not propose the removal or alteration of any of the trees identified at the Well Site 11 project site. Therefore, the proposed project would not conflict with any local policies or ordinances protecting biological resources and there would be no impact.

<sup>7</sup> Lemoore, City of, 2018. *Lemoore, California City Code*. September 18.

*f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

The proposed project falls within the City of Lemoore and is therefore subject to the 2030 Lemoore General Plan, specifically policies outlined in 'Chapter 7: Conservation and Open Space'. Although the project would be required to comply with the General Plan, no protected open space categories or habitat suitable to support special-status species occurs within the project area. Therefore, the proposed project would not conflict with the 2030 Lemoore General Plan and there would be no impact.

## 4.5 CULTURAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### 4.5.1 Impact Analysis

LSA conducted a Cultural Resource Survey Assessment for the proposed project to (1) identify archaeological deposits that may meet the CEQA definition of a historical resource (California Public Resources Code [PRC] §21084.1) or a unique archaeological resource (PRC §21083.2) and that may be impacted by the proposed project, and (2) recommend procedures for avoiding or mitigating impacts to such deposits, as necessary. The study consisted of background research and a field survey, and was conducted by LSA Senior Cultural Resources Manager Kerrie Collison, M.A., Registered Professional Archaeologist (RPA) No. 28731436. The analysis in this Cultural Resources section is based on the results of the Cultural Resource Survey Assessment.

*a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?*

**Southern San Joaquin Valley Information Center.** A record search of the project site and a 0.25-mile radius was conducted on June 28, 2019, by staff at the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System at California State University, Bakersfield. The SSJVIC, an affiliate of the California Office of Historic Preservation, is the official repository of cultural resources records and reports for Kings County. Background research also included a review of the following State and federal inventories: Directory of Properties in the Historic Property Data File, which includes the listings of the National Register of Historic Places, National Historic Landmarks, the California Register of Historical Resources, California Historical Landmarks, and California Points of Historical Interest; California Historical Landmarks; California Points of Historical Interest; Five Views: An Ethnic Historic Site Survey for California; and California Inventory of Historic Resources. There are no local (City of Lemoore or Kings County) registers or inventories to review.

The record search results indicate that no cultural resources have been recorded in the project site. One historic-period archaeological cultural resource (a railroad) has been recorded within a 0.25-mile radius of Well Site 7. Three cultural resource studies have included portions of Well Site 7—all three of which are surveys. One of those surveys also included a portion of Well Site 11.

**Map and Aerial Photograph Review.** Additional background research included a review of historic-period USGS maps and aerial photographs to assess the potential for subsurface historic-period archaeological cultural resources at the project site. The results of this review are presented below, by well area.

**Well Site 7.** The oldest aerial photograph of Well Site 7 is from 1980 and shows the site as undeveloped. The next aerial photograph dates to 1994 and shows that the surface of the site has been disturbed by the clearing of a road. Well Site 7 was initially developed between 1994 and 2005, and the solar panels in the southern portion of the site were constructed between 2012 and 2014.

The earliest available topographic quadrangle reviewed by LSA dates to 1927 and shows Well Site 7 as undeveloped, with an intermittent stream approximately 200 feet to the west. The 1927 topographic quadrangle also shows a railroad along the northern portion of the site. All subsequent topographic quadrangle editions (dating to 1942, 1957, 1963, 1986, 2012, and 2015) show no change in the condition of Well Site 7 from that of 1927.

**Well Site 11.** The oldest aerial photograph of Well Site 11 is from 1980 and shows the site as an open field. The aerial photograph from 1994 shows the same site conditions. Well Site 11 was initially developed between 1994 and 2005, and the solar panels in the western portion of the site were constructed between 2012 and 2014. The aerial photograph from 2010 shows surface disturbance to the project site as a result of the clearing of multiple dirt roads.

The earliest available topographic quadrangle map reviewed by LSA dates to 1927 and shows that Well Site 11 contains a building with an intermittent stream approximately 1,750 feet to the east. Subsequent topographic quadrangle editions (dating to 1942, 1957, 1963, and 1986) also show the building on the project site. Editions dating to 2012 and 2015 do not show the building.

**Field Survey.** On July 24, 2019, LSA Archaeologist Kerrie Collison, M.A., RPA, conducted a pedestrian field survey of the project sites at Well Site 7 and Well Site 11. Ms. Collison surveyed the entire project site by walking transects spaced less than 5 meters. Ground surface visibility was 100 percent at Well Site 7, with portions of the site already paved. Ground surface visibility was approximately 50 percent at Well Site 11 due to flattened dry grasses. A trowel was used to clear the dry grasses and expose additional native soil in a few places to obtain a better view of the ground at Well Site 11. Rodent burrowing holes and back-dirt piles were examined for indications of archaeological cultural resources at Well Site 11.

The field survey did not identify any archaeological cultural resources in the project site. The project site consists of flat, open areas that have been disturbed by vehicle traffic and construction of the existing well sites. Rodent burrowing holes and back-dirt piles, where present, were examined for archaeological cultural resources; none were observed.

**Results.** The Cultural Resources study, consisting of background research and a field survey, did not identify archaeological cultural resources in the project sites. The project sites have not been subject to prior subsurface cultural resource study. The ground visibility, the ability to examine samples of

soils from below the surface, and the negative survey results indicate that there is a low likelihood of encountering buried archaeological cultural resources during construction activities. However, the potential for encountering intact archaeological deposits and/or human remains during construction of the proposed project cannot be ruled out. Any impacts to such resources would be significant under CEQA. Implementation of Mitigation Measure CUL-1 would reduce potential impacts to cultural resources or their accidental discovery during project construction to less than significant.

**Mitigation Measure CUL-1:** In the unlikely event that cultural resources are encountered during project activities, contractors should stop work in the immediate area of the find and contact a qualified professional archaeologist to assess the nature and significance of the find and determine if any additional study or treatment of the find is warranted. Additional studies could include, but would not be limited to, collection and documentation of artifacts, documentation of the cultural resources on State of California Department of Parks and Recreation Series 523 forms, or subsurface testing. If deemed appropriate, future monitoring should continue until grading and excavation are complete or until the monitoring archaeologist determines, based on field observations, that there is no likelihood of encountering intact archaeological cultural resources. Upon completion of any monitoring activities, the archaeologist should prepare a report to document the methods and results of monitoring activities. The final version of this report should be submitted to the Southern San Joaquin Valley Information Center (SSJVIC).

Implementation of Mitigation Measure CUL-1 would reduce potential impacts related to the substantial adverse change in the significance of historical or archaeological resources to a less-than-significant level.

*b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?*

Mitigation Measure CUL-1, as presented in Section 4.5.1.a above, would ensure that potential impacts to archaeological resources would be reduced to a less-than-significant level. Therefore, the project would not cause a substantial adverse change in the significance of an archaeological resource.

*c. Would the project disturb any human remains, including those interred outside of formal cemeteries?*

Although no such remains have been identified within the project sites, there is a possibility of encountering such remains, either in isolation or with prehistoric archaeological deposits. Such remains could be uncovered during project ground-disturbing activities. Based on the significance criteria identified above, the project would have a significant effect on the environment if it would disturb human remains, including those interred outside of formal cemeteries.

Implementation of Mitigation Measure CUL-2 would reduce potential impacts to human remains to a less than significant level.

**Mitigation Measure CUL-2:** Any human remains encountered during project-related ground-disturbing activities shall be treated in accordance with California Health and Safety Code Section 7050.5. The project sponsor shall inform all contractor(s) performing excavation of the sensitivity of the project site for human remains and include the following directive in the appropriate contract documents:

If human remains are uncovered, all work within 50 feet of the discovery shall be halted and the Kings County Coroner notified immediately. At the same time, the on-site monitoring archaeologist shall assess the situation and consult with agencies as appropriate. Project personnel shall not collect or move any human remains or associated materials. If the human remains are of Native American origin, the Coroner must notify the California State Native American Heritage Commission (NAHC) within 24 hours of this identification. The NAHC will formally identify a Native American Most Likely Descendant—if one is not already on-site—to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods. Such recommendations shall be carried out to the satisfaction of the NAHC prior to work resuming within 50 feet of the discovered remains.

## 4.6 ENERGY

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### 4.6.1 Impact Analysis

- a. *Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?*

Construction of the proposed project would require the use of energy to fuel grading vehicles, trucks, and other construction vehicles. All or most of this energy would be derived from non-renewable resources. Construction activities are not anticipated to result in an inefficient use of energy as gasoline and diesel fuel would be supplied by construction contractors who would conserve the use of their supplies to minimize their costs on the project. Energy usage on the project site during construction would be temporary in nature and would be relatively small in comparison to the State's available energy sources. Therefore, construction energy impacts would be less than significant.

Typically, energy consumption is associated with fuel used for vehicle trips and natural gas and energy use. Operation of the WTPs would require energy electricity consumption and fuel used for vehicle trips associated with maintenance. The proposed project would have minimal to no effect on natural gas demand.

The proposed WTPs would be powered by electricity. The existing Well Site 7 operating load is 540A and the new Station 7 WTP operating load would be 472A for a total expected operating load of 1,012A. In addition, there would be some additional loads for site lighting and heat tracing, which would be confirmed during final design. The existing main electrical panel at Well Site 7 is insufficiently rated for the addition of the proposed new electrical loads to the existing electrical loads. As such, the existing 480V utility service capacity from PG&E would be modified to accommodate the project.<sup>8</sup>

The existing Well Site 11 operating load is 546A and the new Station 11 WTP operating load would be 502A for a total expected operating load of 1,048A. In addition, there would also be some additional loads for site lighting and heat tracing, which would be confirmed during final design. The existing main electrical panel at Well Site 11 is insufficiently rated for the addition of the proposed new electrical loads to the existing electrical loads. As such, the existing 480V utility service capacity

<sup>8</sup> Carollo, 2019. *City of Lemoore Water Treatment Plants Project Basis of Design Report*. January.

from PG&E would also be modified to accommodate the project.<sup>9</sup> Due to the small electricity demand associated with the proposed project, the proposed project would not result in the wasteful, inefficient or unnecessary consumption of electricity. In addition, both well sites have existing solar fields that would be used for the WTPs which would allow for a decreased dependence on nonrenewable energy resources.

In addition, the proposed project would result in energy usage associated with gasoline and diesel to fuel project-related maintenance and brine disposal trips. Current staff visits to the site would remain the same at both well sites with implementation of the proposed project. Therefore, the project would not increase daily staff trip generation to the sites. However, as discussed in the Project Description, two loads of liquid brine would be off-hauled daily (one load from each site) to the EBMUD facility and one load of solid arsenic/brine wastes would be off-hauled every 3 months to Waste Management Kettleman Hills Landfill. This analysis assumes that these haul trucks would be diesel-fueled.

In 2015, vehicles in California consumed approximately 15.1 billion gallons of gasoline<sup>10</sup> and 4.2 billion gallons of diesel.<sup>11</sup> Nearly all heavy duty-trucks, delivery vehicles, buses, trains, ships, boats and barges, farm, construction and heavy duty military vehicles and equipment have diesel engines. Diesel is the fuel of choice because it has 12 percent more energy per gallon than gasoline and has fuel properties that prolong engine life making it ideal for heavy duty vehicle applications.<sup>12</sup> As such, diesel demand generated by the haul truck trips associated with the proposed project would be a minimal fraction of diesel fuel consumption in California. In addition, staff vehicles and haul trucks driving to and from the well sites would be subject to fuel economy and efficiency standards applied throughout the State. As such, the fuel efficiency of vehicles and haul trucks associated with the project site would increase throughout the life of the project. Therefore, implementation of the proposed project would not result in a substantial increase in transportation-related energy uses. The proposed project would not result in the wasteful, inefficient or unnecessary consumption of fuel or energy and would incorporate renewable energy or energy efficiency measures into building design, equipment use, and transportation. Impacts would be less than significant.

*b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?*

In 2002, the Legislature passed Senate Bill 1389, which required the CEC to develop an integrated energy plan every two years for electricity, natural gas, and transportation fuels, for the California Energy Policy Report. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero emission vehicles and their infrastructure needs, and encouragement of urban designs that reduce vehicle miles traveled (VMT) and accommodate pedestrian and bicycle access.

<sup>9</sup> Ibid.

<sup>10</sup> California Energy Commission, 2017. *California Gasoline Data, Facts, and Statistics*. Website: [www.energy.ca.gov/almanac/transportation\\_data/gasoline](http://www.energy.ca.gov/almanac/transportation_data/gasoline) (accessed July 2019).

<sup>11</sup> California Energy Commission, 2017. *Diesel Fuel Data, Facts, and Statistics*. Website: [www2.energy.ca.gov/almanac/transportation\\_data/diesel.html](http://www2.energy.ca.gov/almanac/transportation_data/diesel.html) (accessed July 2019).

<sup>12</sup> Ibid.



The California Energy Commission (CEC) recently adopted the 2017 Integrated Energy Policy Report.<sup>13</sup> The 2017 Integrated Energy Policy Report provides results from the CEC's assessments of a variety of energy issues facing California. Many of these issues will require action if the State is to meet its climate, energy, air quality, and other environmental goals while maintaining energy reliability and controlling costs. The 2017 Integrated Energy Policy Report covers a broad range of topics, including implementation of Senate Bill 350, integrated resource planning, distributed energy resources, transportation electrification, solutions to increase resiliency in the electricity sector, energy efficiency, transportation electrification, barriers faced by disadvantaged communities, demand response, transmission and landscape-scale planning, the California Energy Demand Preliminary Forecast, the preliminary transportation energy demand forecast, renewable gas (in response to Senate Bill 1383), updates on Southern California electricity reliability, natural gas outlook, and climate adaptation and resiliency.

As indicated above, energy usage on the project sites during construction would be temporary in nature. In addition, energy usage associated with operation of the proposed project would be relatively small in comparison to the State's available energy sources and energy impacts would be negligible at the regional level. Because California's energy conservation planning actions are conducted at a regional level, and because the project's total impact to regional energy supplies would be minor, the proposed project would not conflict with California's energy conservation plans as described in the CEC 2017 Integrated Energy Policy Report. Thus, as shown above, the project would avoid or reduce the inefficient, wasteful, and unnecessary consumption of energy and not result in any irreversible or irretrievable commitments of energy. In addition, both well sites have existing solar fields that would be used for the WTPs which would allow for a decreased dependence on nonrenewable energy resources. Therefore, the proposed project would not result in the wasteful, inefficient or unnecessary consumption of energy resources during project construction or operation. Impacts would be less than significant.

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<sup>13</sup> California Energy Commission, 2017. *2017 Integrated Energy Policy Report*. California Energy Commission. Publication Number: CEC-100-2017-001-CMF.

## 4.7 GEOLOGY AND SOILS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Directly or indirectly cause 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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii. Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii. Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv. Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### 4.7.1 Impact Analysis

A Geotechnical Engineering Investigation Report (Geotechnical Report) was prepared for the proposed project which presents the results of a geotechnical engineering investigation conducted by BSK Associates, for the Lemoore Water Treatment Plants within the City of Lemoore, California.<sup>14</sup> The Geotechnical Report provides a description of the geotechnical conditions at the well sites and provides specific recommendations for earthwork and foundation design with respect to the planned structures. Several of the following responses are based on the results of that report.

<sup>14</sup> BSK Associates, 2018. *Geotechnical Engineering Investigation Report Lemoore Water Treatment Plants*. November 6.

- a. *Would the project directly or indirectly cause 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.*

The project sites are not located within a currently designated Alquist-Priolo Earthquake Zone.<sup>15</sup> In addition, no known active or potentially active faults or fault traces are located in the project sites vicinity. There are no known active seismic faults in Kings County or its immediate vicinity.<sup>16</sup> The closest active fault is the Nunez fault located in western Fresno County. The Nunez fault is a 4.2-kilometer-long, north-south-trending, right-reverse, oblique-slip fault situated about 8 miles northwest of Coalinga.<sup>17</sup> The Nunez fault is located approximately 40 miles west of the City of Lemoore. Therefore, due to the location of this fault; earthquakes would not cause any damage. In addition, the well sites are not in a Seismic Hazard Zone as specified by the State of California.<sup>18</sup> Therefore, no people or structures would be exposed to potential substantial adverse effects, including the risk of loss, injury, or death from the rupture of a known earthquake fault as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, and there would be no impact.

ii. *Strong seismic ground shaking?*

As discussed above, the closest known active fault is the Nunez fault, located approximately 40 miles west of Lemoore. According to the City's General Plan, the most likely hazard associated with earthquakes for the Lemoore area is ground shaking, rather than surface rupture or ground failure. However, due to the distance to the known fault, hazards due to ground shaking would be minimal. In addition, the well sites are not in a Seismic Hazard Zone as specified by the State of California. Therefore, impacts related to strong seismic ground shaking would be less than significant.

iii. *Seismic-related ground failure, including liquefaction?*

Secondary natural hazards associated with earthquakes result from the interaction of ground shaking with existing ground instabilities, and include liquefaction, settlement or subsidence, landslides and seiches. Liquefaction describes a condition in which a saturated, cohesionless soil loses shear strength during earthquake shocks. Ground motion from an earthquake may induce cyclic reversals of shearing strains of large amplitude. Lateral and vertical movements of the soil mass, combined with loss of bearing strength, usually result from this phenomenon. Historically, liquefaction of soils has caused severe damage to structures, berms, levees and roads. Liquefaction potential depends on soil type, void ratio, depth to groundwater, duration of

<sup>15</sup> California Geologic Survey, 2010. *Cities and Counties Affected by Alquist-Priolo Earthquake Fault Zones*. January.

<sup>16</sup> Lemoore, City of, 2008, op. cit.

<sup>17</sup> Ibid.

<sup>18</sup> BSK Associates, 2018, op. cit.

shaking and confining pressures over the potentially liquefiable soil mass. Fine, well-sorted, loose sand, shallow groundwater, severe seismic ground motion and particularly long durations of ground shaking are conditions conducive for liquefaction.

The analysis indicates that liquefaction may occur in the fine grained and granular sediments. The total seismically-induced settlement due to liquefaction was evaluated to be less than 1 inch. The differential settlement due to liquefaction is estimated to be 0.75 inches across the width of the mat/slab foundation. In addition, both well sites are generally level and implementation of the proposed project would not expose people or structures to potential substantial effects associated with seismic-related ground failure, including liquefaction. Therefore, this impact is less than significant.

#### *iv. Landslides?*

As discussed above, the City's General Plan states that secondary natural hazards associated with earthquakes, including landslides, are not considered a concern within Lemoore due to the distance from the San Andreas Fault, the lack of steep slopes, and the clay composition of area soils. As such, the proposed project would not expose people or structures to potential substantial adverse effects associated with landslides. Therefore, impacts related to landslides would be less than significant.

#### *b. Would the project result in substantial soil erosion or the loss of topsoil?*

Soil erosion is a process whereby soil materials are worn away and transported to another area, either by wind or water. Rates of erosion can vary depending on the soil material and structure, placement, and human activity. Soil containing high amounts of silt can be easily eroded, while sandy soils are less susceptible. Excessive soil erosion can eventually damage building foundations and roadways. Erosion is most likely to occur on sloped areas with exposed soil, especially where unnatural slopes are created by cut-and-fill activities. Soil erosion rates can be higher during the construction phase. Typically, the soil erosion potential is reduced once the soil is graded and covered with concrete, structures, or asphalt.

Implementation of the proposed project would include grading activities that could result in short-term soil erosion during the construction period. Exposed soils are considered erodible when subjected to concentrated surface flow or wind. Mitigation Measure GEO-1, described below, would reduce the potential for soil erosion.

**Mitigation Measure GEO-1:** To reduce the potential for soil erosion during construction of the proposed project, an Erosion Control Plan shall be prepared for the project in conformance with the California Storm Water Best Management Practice Handbook for Construction Activity, prior to the start of grading.

In addition, soil erosion and loss of topsoil would be minimized through implementation of SVJAPCD Regulation VIII fugitive dust control measures and compliance with the National Pollutant Discharge Elimination System (NPDES) permit requirements. With incorporation of Mitigation Measure GEO-1

and compliance with NPDES permit requirements, construction of the proposed project would not result in substantial soil erosion or loss of topsoil. This impact would be less than significant with mitigation incorporated.

*c. Would the project 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?*

See Sections 3.7.1.a.iii and 3.7.1.a.iv above. The proposed project would not require a substantial grade change or change in topography. The project would not result in on- or off-site landslides, lateral spreading, subsidence, liquefaction or collapse. Therefore, this impact would be less than significant.

*d. Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?*

Expansive soils possess a “shrink-swell” characteristic. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in fine-grained clay sediments from the process of wetting and drying. Structural damage may occur over a long period of time, usually the result of inadequate soil and foundation engineering, or the placement of structures directly on expansive soils. Several portions of Lemoore have soil with high to moderate shrink-swell potential. Figure 7-2 of the City’s General Plan maps soil types in the City. Based on this mapping, Well Site 7 has Goldberg Loam, partially drained soil and Well Site 11 has Nord Complex soil. In addition, based on Figure 7-2, Well Site 7 has soil with severe building limitations. Therefore, consistent with the recommendations contained in the Geotechnical Report, project construction would include uniformly over-excavated soil surfaces to a depth of 24 inches below the proposed foundations. Additionally, engineered fill would consist of non-expansive soil and would be compacted to 90 percent relative compaction. As such, the proposed project would be constructed in compliance with applicable construction codes and requirements intended to reduce any adverse impacts resulting from expansive soils. Therefore, the project would result in a less than significant impact related to substantial risks to life or property due to expansive soils.

*e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?*

The proposed project includes the installation of WTPs at Well Site 7 and Well Site 11 to meet the water quality objectives for treating the City’s water supply. As discussed in the Project Description, regeneration would occur via an onsite brine tank and brine transfer system. At Station 7, some of the non-brine portions of the ion exchange process would be disposed into the sewer and brine waste would be stored onsite in an equalization tank for subsequent management offsite. For Station 11, brine waste would undergo an additional coagulation and settlement process to precipitate arsenic which also occurs naturally in the wells feeding the plant. Once arsenic is removed, the spent brine would be disposed of offsite. Arsenic sludge would be characterized and periodically disposed of offsite. The City estimates that two loads of liquid brine would be off-hauled daily (one load from each site) to the EBMUD facility and one load of solid arsenic/brine wastes



would be off-hauled every 3 months to Waste Management Kettleman Hills Landfill. Implementation of the project would not result in impacts to soils associated with the use of such wastewater treatment systems. Therefore, this impact would be less than significant.

*f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

Paleontological resources are the mineralized (fossilized) remains of prehistoric plant and animal life exclusive of human remains or artifacts. Fossil remains such as bones, teeth, shells, and leaves are found in geologic deposits (rock formations) where they were originally buried. Fossil remains are considered to be important as they provide indicators of the earth's chronology and history. These resources are afforded protection under CEQA and are considered to be limited and nonrenewable, and they provide invaluable scientific and educational data. Due to the sensitive nature of these paleontological resources, they are not mapped.

Implementation of the proposed project would require ground disturbing construction activities that may inadvertently encounter and damage paleontological resources. Should this occur, project construction at both well sites may result in the destruction of a unique paleontological site, resulting in a potentially significant impact. Mitigation Measure GEO-2 would reduce this impact to less than significant.

The following mitigation measure would reduce the paleontological resource impacts associated with the proposed project to a less-than-significant level.

**Mitigation Measure GEO-2:** The project applicant shall inform its contractor(s) of the sensitivity of the project area for paleontological resources. Should paleontological resources be encountered during project subsurface construction activities, all ground-disturbing activities within 25 feet shall be redirected and a qualified paleontologist contacted to assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. If found to be significant, and project activities cannot avoid the paleontological resources, adverse effects to paleontological resources shall be mitigated. Mitigation may include monitoring, recording the fossil locality, data recovery and analysis, a final report, and accessioning the fossil material and technical report to a paleontological repository. Public educational outreach may also be appropriate. Upon completion of the assessment, a report documenting methods, findings, and recommendations shall be prepared and submitted to the City of Lemoore for review, and (if paleontological materials are recovered) a paleontological repository, such as the University of California Museum of Paleontology. The City shall verify that the above directive has been included in the appropriate contract documents.

## 4.8 GREENHOUSE GAS EMISSIONS

	Potentially Significant Impact	Less Than Significant with 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### 4.8.1 Impact Analysis

- a. *Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*

Greenhouse gas emissions (GHGs) are present in the atmosphere naturally, and are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. However, over the last 200 years, human activities have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere, and enhancing the natural greenhouse effect, which is believed to be causing global climate change. The gases that are widely seen as the principal contributors to human-induced global climate change are:

- Carbon dioxide (CO<sub>2</sub>)
- Methane (CH<sub>4</sub>)
- Nitrous oxide (N<sub>2</sub>O)
- Hydrofluorocarbons
- Perfluorocarbons
- Sulfur Hexafluoride

Certain gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is excluded from the list of GHGs above because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

These gases vary considerably in terms of Global Warming Potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another

gas. GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and the length of time that the gas remains in the atmosphere (“atmospheric lifetime”).

The GWP of each gas is measured relative to CO<sub>2</sub>, the most abundant GHG; the definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO<sub>2</sub> over a specified time period. GHG emissions are typically measured

The SJVAPCD *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA*<sup>19</sup> suggests project GHG emissions would be considered less than significant if a project meets any of the following conditions: is exempt from CEQA requirements; complies with an approved GHG emission reduction plan or GHG mitigation program; or implements Best Performance Standards. Additionally, projects that demonstrate that GHG emissions would be reduced or mitigated by at least 29 percent compared to Business-as-Usual, including GHG emission reductions achieved since the 2002-2004 baseline period, would be considered less than significant.

**Construction Greenhouse Gas Emissions.** Construction activities associated with the WTPs, such as site preparation, site grading, on-site construction vehicles, equipment hauling materials to and from the project sites, and motor vehicles transporting the construction crew would produce combustion emissions from various sources. During construction, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically uses fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O. Furthermore, CH<sub>4</sub> is emitted during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

As discussed in the Project Description, construction of the proposed project would begin October 2019 and would be completed by November 2020. Construction activities and equipment for both of WTPs includes the following:

- Shallow soil excavation and re-compaction using bulldozers;
- Limited trenching for conveyance pipelines and electrical duct bank installation using backhoes;
- Forming and pouring of concrete foundation slabs and equipment pads using typical equipment;
- Installation of process vessels, tanks and electrical power and controls using a crane and reach-lift; and
- Site resurfacing including minor paving using typical equipment.

The total ground disturbance area for the Station 7 WTP would be approximately 27,000 square feet and approximately 500 cubic yards of soil off-haul would be required and the total ground

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<sup>19</sup> San Joaquin Valley Air Pollution Control District, 2009. *Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects Under CEQA*. December 17. Available online at: [www.valleyair.org/Programs/CCAP/12-17-09/3%20CCAP%20-%20FINAL%20LU%20Guidance%20-%20Dec%2017%202009.pdf](http://www.valleyair.org/Programs/CCAP/12-17-09/3%20CCAP%20-%20FINAL%20LU%20Guidance%20-%20Dec%2017%202009.pdf) (accessed July 2019).

disturbance area for the Station 11 WTP would be approximately 47,000 square feet and approximately 750 cubic yards of soil off-haul would be required.

The SJVAPCD does not have an adopted threshold of significance for construction-related GHG emissions. However, lead agencies are encouraged to quantify and disclose GHG emissions that would occur during construction. Using CalEEMod, it is estimated that construction of the WTPs would generate a total of approximately 411.1 metric tons of CO<sub>2</sub> equivalents (CO<sub>2</sub>e). When considered over the 30-year life of the project, the total amortized construction emissions for the WTPs would be 13.7 metric tons of CO<sub>2</sub>e per year. As such, construction of the WTPs would not generate GHG emissions that would have a significant impact on the environment and construction-related impacts would be less than significant.

**Operational Greenhouse Gas Emissions.** Long-term GHG emissions are typically generated from mobile, area, waste, and water sources as well as indirect emissions from sources associated with energy consumption. Mobile-source GHG emissions would include project-generated haul trips to and from the sites. Area-source emissions would be associated with activities such as landscaping and maintenance on the project site. Energy source emissions are typically generated at off-site utility providers as a result of increased electricity demand generated by a project. Stationary source emissions would be associated with the future emergency backup generator at the Station 7 WTP. Waste source emissions generated by the proposed project include energy generated by land filling and other methods of disposal related to transporting and managing project generated waste. In addition, water source emissions associated with the proposed project are generated by water supply and conveyance, water treatment, water distribution, and wastewater treatment.

Operational emissions were estimated using CalEEMod and the results are presented in Table 4.D. CalEEMod output sheets are included in Appendix A.

**Table 4.D: Operational GHG Emissions**

Emissions Source Category	Operational Emissions (Metric Tons per Year)				
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e	Percent of Total
Area	<0.1	0.0	0.0	<0.1	0
Energy	3.9	<0.1	<0.1	3.9	33
Mobile	4.4	<0.1	0.0	4.4	37
Stationary	3.5	<0.1	0.0	3.5	30
Waste	0.0	0.0	0.0	0.0	0
Water	0.0	0.0	0.0	0.0	0
<b>Total Operational</b>				<b>11.8</b>	<b>100</b>

Source: LSA (July 2019).

The proposed project would generate approximately 11.8 metric tons of CO<sub>2</sub>e per year of emissions, as shown in Table 4.D. The SJVAPCD has not established a numeric threshold for GHG emissions. The project would include the installation of WTPs at Well Site 7 and Well Site 11 to meet the water quality objectives for treating the City's water supply. Based on the emission estimates shown in Table 4.D, the proposed project would not result in the generation of substantial GHG emissions. As

such, operation of the WTPs would not generate GHG emissions that would have a significant impact on the environment and construction-related impacts would be less than significant.

*b. Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*

The City of Lemoore does not have an adopted Climate Action Plan or GHG Reduction Plan. Therefore, the following discussion evaluates the proposed project according to the goals of Assembly Bill (AB) 32, the AB 32 Scoping Plan, Executive Order B-30-15, SB 32, and AB 197.

AB 32 is aimed at reducing GHG emissions to 1990 levels by 2020. AB 32 requires the California Air Resource Board (CARB) to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce GHGs that contribute to global climate change. The AB 32 Scoping Plan has a range of GHG reduction actions, which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 implementation fee to fund the program.

Executive Order Executive Order B-30-15 added the immediate target of reducing GHG emissions to 40 percent below 1990 levels by 2030. CARB released a second update to the Scoping Plan, the 2017 Scoping Plan,<sup>20</sup> to reflect the 2030 target set by Executive Order B-30-15 and codified by Senate Bill (SB) 32. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in Executive Order B-30-15. SB 32 builds on AB 32 and keeps us on the path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels. The companion bill to SB 32, AB 197, provides additional direction to the CARB related to the adoption of strategies to reduce GHG emissions. Additional direction in AB 197 intended to provide easier public access to air emissions data that are collected by CARB was posted in December 2016.

As identified above, the AB 32 Scoping Plan contains GHG reduction measures that work towards reducing GHG emissions, consistent with the targets set by AB 32, Executive Order B-30-15 and codified by SB 32 and AB 197. The measures applicable to the proposed project include energy efficiency measures, water conservation and efficiency measures, and transportation and motor vehicle measures, as discussed below.

Energy efficient measures are intended to maximize energy efficiency building and appliance standards, pursue additional efficiency efforts including new technologies and new policy and implementation mechanisms, and pursue comparable investment in energy efficiency from all retail providers of electricity in California. In addition, these measures are designed to expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings. As discussed in Section 4.6.1.b, energy usage on the project sites during construction would be temporary in nature. In addition, energy usage associated with operation of the proposed project would be relatively small in comparison to the State's available energy sources and energy impacts would be negligible at the regional level. Therefore, the proposed project would not conflict with applicable energy measures.

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<sup>20</sup> California Air Resources Board, 2017. *California's 2017 Climate Change Scoping Plan*. November.



Water conservation and efficiency measures are intended to continue efficiency programs and use cleaner energy sources to move and treat water. Increasing the efficiency of water transport and reducing water use would reduce GHG emissions. The purpose of the project is to install WTPs at Well Site 7 and Well Site 11 to meet the water quality objectives for treating the City's water supply. Therefore, the proposed project would not conflict with any of the water conservation and efficiency measures.

The goal of transportation and motor vehicle measures is to develop regional GHG emissions reduction targets for passenger vehicles. Specific regional emission targets for transportation emissions would not directly apply to the proposed project. In addition, as discussed in the Project Description, current staff visits to the site would remain the same at both well sites with implementation of the proposed project; therefore, the project would not result in additional vehicle trips and would not conflict with reduction targets for passenger vehicles. Therefore, the proposed project would not conflict with policies and regulations that have been adopted for the purpose of reducing GHG from transportation sources.

The proposed project would comply with existing State regulations adopted to achieve the overall GHG emissions reduction goals identified in AB 32, the AB 32 Scoping Plan, Executive Order B-30-15, SB 32, and AB 197 and would be consistent with applicable state plans and programs designed to reduce GHG emissions. Therefore, the proposed project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs and impacts would be less than significant.

## 4.9 HAZARDS AND HAZARDOUS MATERIALS

	Potentially Significant Impact	Less Than Significant with 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### 4.9.1 Impact Analysis

#### a. *Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

Hazardous materials are chemicals that could potentially cause harm during an accidental release and are defined as being toxic, corrosive, flammable, reactive, an irritant, or strong sensitizer. Hazardous substances include all chemicals regulated under the United States Department of Transportation<sup>21</sup> "hazardous materials" regulations and the USEPA<sup>22</sup> "hazardous waste" regulations. Hazardous wastes require special handling and disposal because of their potential to damage public health and the environment.

<sup>21</sup> United States Department of Transportation, 2018. *Regulations and Compliance*. Website: [www.phmsa.dot.gov/regulations-and-compliance](http://www.phmsa.dot.gov/regulations-and-compliance) (accessed July 2019).

<sup>22</sup> United States Environmental Protection Agency, 2012. *Hazardous Waste Regulations*. Available online at: [www.epa.gov/osw/laws-regs/regs-haz.htm](http://www.epa.gov/osw/laws-regs/regs-haz.htm) (accessed July 2019).

**Construction.** Exposure to hazardous materials during the construction of the project could result from the improper handling or use of hazardous substances or an inadvertent release resulting from an unforeseen event (e.g., fire, flood, or earthquake). The severity of any such exposure is dependent upon the type, amount, and characteristic of the hazardous material involved; the timing, location, and nature of the event; and the sensitivity of the individual or environment affected.

Project construction would likely require the use of limited quantities of hazardous materials, such as fuels, oils, lubricants, and solvents. The small quantities of hazardous materials that would be transported, used, or disposed of would be well below reportable quantities. The improper use, storage handling, transport, or disposal of hazardous materials during construction could result in accidental release exposing construction workers, the public and the environment, including soil and/or ground or surface water to adverse effects. Construction activities would be conducted with standard construction practices and in accordance with all applicable California Division of Occupational Safety and Health Administration and other safety regulations to minimize the risk to the public. Compliance with federal, State, and local hazardous materials laws and regulations would minimize the risk to the public presented by these potential hazards during construction of the project. Transportation of any hazardous materials generated by excavation is regulated by the federal Department of Transportation and Caltrans. As such, transportation of hazardous materials off-site must be handled by licensed hazardous waste haulers.

**Operation.** Once operational, the treatment process at the WTPs would require several chemicals, including liquid oxygen, sulfuric acid, caustic soda, and saturated brine, in order for the process to be viable in meeting the water quality objectives. Each of these chemicals would need to be stored onsite. Stored hazardous materials are regulated under Chapter 50 of the CFC. Per CFC, hazardous materials exceeding listed quantities must have both double containment and spill protection.

Of the chemicals stored at the treatment plant, brine is not classified as hazardous. The three other chemicals stored onsite (liquid oxygen, sulfuric acid, and caustic soda) would be required to have both double containment and spill protection. All chemical storage would be within proper secondary containment. Spill containment would be provided with a concrete floor and a 6-inch concrete curb around the chemical tank perimeter. For sulfuric acid and caustic soda, the concrete floor would be sloped to a low spot so spilled chemical can be drained out via pumping. For liquid oxygen, the tank would be located on a concrete pad surrounded by permeable road base; which would provide a large surface area to facilitate evaporation of the liquid oxygen for large spills.

The CFC also regulates setbacks of hazardous chemical storage tanks. 93 percent sulfuric acid is considered an oxidizer, water reactive, and corrosive and 50 percent caustic soda is water reactive and corrosive. The maximum required setback distance for these chemicals is governed by the corrosive property. Per Section 5404 of CFC, outdoor storage of corrosive chemicals shall not be within 20 feet of buildings, lot lines, public streets, public alleys, public ways, or means of egress unless a 2-hour fire wall is constructed around the storage area. CFC also regulates setbacks of liquid oxygen in Chapter 55. Pertinent setback requirements are 5 feet from lot lines and 10 feet from building exits. In addition to these setback requirements, CFC requires 20 feet of separation provided between incompatible materials and maintain 25 feet around chemical storage free from

combustible material and vegetation.<sup>23</sup> The proposed project would be required to comply with these requirements.

Ozone is considered an oxidizing gas and highly toxic per the CFC. The proposed ozone system would be regulated as a closed system. Based on the California Building Code (CBC), the Ozone Room would need to be classified as a High-Hazard Occupancy, Group H-4 if greater than 20 cubic feet (at normal temperature and pressure) of ozone is contained in the system and Group H-3 if greater than 1,500 cubic feet (at normal temperature and pressure) of ozone is contained in the system.<sup>24</sup>

Per CFC Chapter 9, ozone rooms must have gas detection systems to shut off the generator and sound an alarm when ambient concentrations exceed the PEL. This would apply to both ozone and oxygen concentrations. Per CFC Chapter 50, the ozone system would provide hazard identification signs per National Fire Protection Association 704. In addition, per CFC Chapter 60, ozone systems would meet the following requirements: ozone generators would meet National Electrical Manufacturers Association 250; ozone generators/generator rooms would have hazardous labels per CFC Section 6005; ventilation of the room where ozone is generated; and doors and piping signage would state "Ozone Gas Generator-Highly Toxicoxidizer".

Compliance with existing safety regulations and widely-accepted industry standards would minimize the hazard to the public and the environment. Construction and operation of the project would be required to comply with the CFC, CBC, and local building codes for the storage of hazardous materials and construction of structures containing hazardous materials. Therefore, potential impacts associated with the transport, use, storage, handling and disposal of hazardous materials during operation of the proposed project would be less than significant.

*b. Would the project 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?*

See Response 4.9.1.a, above. Compliance with existing safety regulations and industry standards would minimize the hazard to the public and the environment. As such, the proposed project would not result in a significant hazard to the public or the environment through a reasonably foreseeable upset or accident condition related to the release of hazardous materials. This impact would be less than significant.

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<sup>23</sup> Ibid.

<sup>24</sup> Ibid.

*c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*

Schools that are within 0.25 miles of the well sites include West Hills College Lemoore, located approximately 0.06 miles south of Well Site 7, Lemoore University Elementary Charter School, located approximately 0.16 miles southwest of Well Site 7, and Meadow Lane Elementary School, located approximately 0.20 miles southeast of Well Site 11 site. However, as discussed in Section 4.9.1.a, compliance with existing safety regulations and industry standards would ensure that the proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste. This impact would be less than significant.

*d. Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

According to the Department of Toxic Substances Control EnviroStor database,<sup>25</sup> neither of the well sites are located on a federal superfund site, State response site, voluntary cleanup site, school cleanup site, evaluation site, school investigation site, military evaluation site, tiered permit site, or corrective action site. In addition, neither of the well sites are included on the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.<sup>26</sup> As a result, no impacts would occur.

*e. Would the project be located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?*

The well sites are not located within an airport land use plan, or within 2 miles of a public airport or public use airport. The closest airport is Naval Air Station Lemoore, located approximately 5 miles southeast of Well Site 7 and approximately 8 miles southeast of Well Site 7. Therefore, the project would not result in a safety hazard for people residing or working in the project area. No impact would occur.

*f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

The proposed project would not result in the development of structures or alteration of existing roadways that would impede or obstruct emergency response plans or evacuation plans. Therefore, development and operation of the proposed project is not anticipated to interfere with any emergency evacuation plan, and no impact would occur.

<sup>25</sup> California Department of Toxic Substances Control, 2019. *EnviroStor*. Website: [www.envirostor.dtsc.ca.gov/public](http://www.envirostor.dtsc.ca.gov/public) (accessed July 2019).

<sup>26</sup> California Environmental Protection Agency, 2019. *Government Code Section 65962.5(a)*. Website: [www.calepa.ca.gov/sitecleanup/corteselist/SectionA.htm](http://www.calepa.ca.gov/sitecleanup/corteselist/SectionA.htm) (accessed July 2019).



*g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?*

Figure 8-2 of the City's General Plan<sup>27</sup> identifies areas within the City as having a high wildfire threat. Based on Figure 8-2, neither of the well sites are identified within a high wildfire threat area. Therefore, implementation of the proposed project would not expose people to significant risk of loss, injury, or death due to wildland fires and this impact would be less than significant.

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<sup>27</sup> Lemoore, City of, 2008, op. cit.

## 4.10 HYDROLOGY AND WATER QUALITY

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Result in substantial erosion or siltation on- or off-site;	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv. Impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### 4.10.1 Impact Analysis

- a. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?*

**Construction.** Pollutants of concern during construction include sediment, trash, petroleum products, concrete waste (dry and wet), sanitary waste, and chemicals. Each of these pollutants on its own or in combination with other pollutants can have a detrimental effect on water quality. During construction activities, excavated soil would be exposed, and there would be an increased potential for soil erosion and sedimentation compared to existing conditions. In addition, chemicals, liquid products, petroleum products (such as paints, solvents, and fuels), and concrete-related waste may be spilled or leaked during construction. Any of these pollutants have the potential to be transported via storm water runoff into receiving waters.

During construction, the total disturbed area at WTP Station 7 would be 27,000 square feet (approximately 0.6 acres) and the total disturbed area at WTP Station 1 would be 47,000 square feet (approximately 1.1 acres). Because the project disturbs greater than 1 acre of soil, the project is subject to the requirements of the State Water Resources Control Board NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No.

2009-0009-DWQ, as amended by 2010-0014-DWG and 2012-0006-DWQ, NPDES No. CAS000002) (Construction General Permit). The permit regulates stormwater discharges from construction sites which result in a Disturbed Soil Area of 1 acre or greater, and/or are smaller sites that are part of a larger common plan of development.

On-site construction activities subject to the Construction General Permit include clearing, grading, excavation, and soil stockpiling. State Water Resources Control Board Construction General Permit also requires the development of a Stormwater Pollution Prevention Plan (SWPPP) by a Qualified SWPPP Developer. A SWPPP identifies all potential pollutants and their sources, including erosion, sediments, and construction materials and must include a list of Best Management Practices (BMPs) to reduce the discharge of construction-related stormwater pollutants. A SWPPP must include a detailed description of controls to reduce pollutants and outline maintenance and inspection procedures. Typical sediment and erosion BMPs include protecting storm drain inlets, establishing and maintaining construction exits and perimeter controls to avoid tracking sediment off-site onto adjacent roadways. A SWPPP also defines proper building material staging and storage areas, paint and concrete washout areas, describes proper equipment/vehicle fueling and maintenance practices, measures to control equipment/vehicle washing and allowable non-stormwater discharges, and includes a spill prevention and response plan.

Required compliance with State and local regulations regarding stormwater during construction would ensure that the proposed project would result in less-than-significant impacts to water quality during construction.

**Operation.** The proposed project would include the installation of WTPs at Well Site 7 and Well Site 11 to meet the water quality objectives for treating the City's water supply. As described in the Project Description, the treatment processes that are proposed for both the Station 7 WTP and Station 11 WTP include pH reduction, ozone injection, GAC filtration, ion exchange filtration, pH stabilization, and disinfection.

Discharging brine water from ion exchange regeneration to the sewer has significant challenges from a regulatory standpoint. The City's current discharge from the wastewater treatment plant (WWTP) is at or near its regulated TDS limit. Backwash water would be supplied by the City's distribution system and backwash flow would be equalized into an equalization tank for subsequent discharge into the sewer system; however once arsenic is removed, spent brine would be disposed of offsite. Arsenic sludge would be characterized and periodically disposed of offsite. The City estimates that two loads of liquid brine would be off-hauled daily (one load from each site) to the EBMUD facility and one load of solid arsenic/brine wastes would be off-hauled every 3 months to Waste Management Kettleman Hills Landfill. Therefore, the proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality and impacts would be less than significant.

*b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?*

Depth to groundwater was encountered within test boring at depths of between 9 and 21 feet below ground surface (bgs).<sup>28</sup> Groundwater level may fluctuate both seasonally and from year to year due to variations in rainfall, temperature, pumping from wells and possibly as the result of other factors such as irrigation. Groundwater is not anticipated to affect design or construction of the proposed WTPs.<sup>29</sup>

Temporary excavations for the WTPs may extend to depths of 5 feet bgs. As such, groundwater is not expected to be encountered during construction activities. Construction activities would compact soil, which can decrease infiltration during construction. However, construction activities would be temporary, and the reduction in infiltration would not be substantial. Therefore, construction of the project would result in a less than significant impact associated with depleting groundwater supplies or substantially interfering with groundwater recharge, and no mitigation is required.

The proposed project would include the installation of WTPs at Well Site 7 and Well Site 11 to meet the water quality objectives for treating the City's water supply. Water would flow to the WTPs directly from the City's groundwater wells that currently feed the site and pressure would be boosted at the WTPs to provide adequate pressure to transfer the water through each treatment process and into the onsite storage reservoir. In addition, all process equipment areas would be placed on concrete slab on grade pads. All other areas would consist of a compacted road base.<sup>30</sup> As such, the proposed WTPs would result in a minimal increase of impervious surface area and would not prevent water from infiltrating into the groundwater nor would it result in direct additions or withdrawals to existing groundwater. As such, operation of the project would result in a less than significant impact associated with depleting groundwater supplies or substantially interfering with groundwater recharge.

*c. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:*

*i. Result in substantial erosion or siltation on- or off-site;*

Implementation of the proposed project would include grading activities that could result in short-term soil erosion during the construction period. Exposed soils are considered erodible when subjected to concentrated surface flow or wind. As discussed under Section 4.7.1.b above, Mitigation Measure GEO-1 would reduce the potential for soil erosion. In addition, soil erosion and loss of topsoil would be minimized through implementation of SVJAPCD Regulation VIII fugitive dust control measures and compliance with the NPDES permit requirements. With incorporation of Mitigation Measure GEO-1 and compliance with NPDES permit requirements,

<sup>28</sup> BSK Associates, 2018, op. cit.

<sup>29</sup> Ibid.

<sup>30</sup> Carollo, 2019, op. cit.

construction of the proposed project would not result in substantial soil erosion or loss of topsoil. This impact would be less than significant with mitigation incorporated.

*ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;*

At Well Site 7, existing grade gently slopes from the north to the south. To minimize excavation and grading, slope of the plant area would also slope from north to south. Stormwater collection points would be provided and tie into the existing stormwater system. At Well Site 11, the existing grade is mostly flat with a slight slope to the north. Well Site 11 site does not connect into the City's stormwater collection system and contains a detention pond to capture stormwater. At both well sites, concrete surfaces without spill containment curbs would be sloped at 1 to 2 percent for facilitate drainage.

As discussed above, the proposed WTPs would result in a minimal increase of impervious surface area and would not prevent water from infiltrating into the groundwater. As such, implementation of the proposed project would not substantially increase the rate or amount of surface runoff that would result in flooding on or off site. This impact would be less than significant.

*iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or*

See Response 4.10.1.a.ii above. Implementation of the proposed project would not substantially increase the rate or amount of surface runoff that would the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. This impact would be less than significant.

*iv. Impede or redirect flood flows?*

Well Site 7 has a mix of Zone X (shaded), Zone X (unshaded), and Zone AE designations and Well Site 11 has a Zone X (unshaded) designation per the Federal Emergency Management Agency (FEMA) flood map.<sup>31</sup> Zone X (shaded) indicates a moderate flood hazard area and is between the limits of the base flood (100-year) and the 0.2 percent annual change (or 500 year) flood. Zone X (unshaded) is an area of minimal flood hazard. Zone AE is a special flood hazard area defined as having a 1 percent probability of flooding (100-year flood plain). The only portion of the Well 7 site shown as Zone AE is south of the site (where the existing Solar Field is) and east of the site access road. The elevations at Well Site 7 range from 213 to 215 feet, which is well above the base flood elevation line of 204 feet shown on the FEMA map. As such, Well Site 7 is outside of the pertinent 100-year flood plain. In addition, the elevations at Well Site 11 are approximately 210, which is also well above the base flood elevation line. As such, Well Site 11 is also outside of the pertinent 100-year flood plain. In addition, the project sites are generally level and are not immediately adjacent to any hillsides. As such, the risk from flooding would be low. Therefore, implementation of the proposed project would not impede or redirect flood flows, and a less-than-significant impact would occur.

<sup>31</sup> Carollo, 2019, op. cit.

*d. In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?*

As indicated above, the project sites are not located within a FEMA designated 100-year or 500-year floodplain. In addition, the project sites are generally level and are not immediately adjacent to any hillsides. As such, the risk from flooding would be low. Furthermore, no enclosed bodies of water are in close enough proximity that would create a potential risk for seiche or a tsunami at the project sites. Therefore, there would be no impact related to potential hazards from inundation from flood, tsunami, or seiche.

*e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?*

As discussed in Response 4.10.1.a, pollutants of concern during construction include sediment, trash, petroleum products, concrete waste (dry and wet), sanitary waste, and chemicals. Each of these pollutants on its own or in combination with other pollutants can have a detrimental effect on water quality. During construction activities, excavated soil would be exposed, and there would be an increased potential for soil erosion and sedimentation compared to existing conditions. In addition, chemicals, liquid products, petroleum products (such as paints, solvents, and fuels), and concrete-related waste may be spilled or leaked during construction. These pollutants may percolate to shallow groundwater from construction activities. However, required compliance with State and local regulations regarding stormwater during construction would ensure that the proposed project would result in less-than-significant impacts to water quality during construction.

During operation of the proposed project, the WTPs at Well Site 7 and Well Site 11 would meet the water quality objectives for treating the City's water supply. Water would flow to the WTPs directly from the City's groundwater wells that currently feed the site and pressure would be boosted at the WTPs to provide adequate pressure to transfer the water through each treatment process and into the onsite storage reservoir. In addition, all process equipment areas at the WTPs would be constructed on a concrete slab on grade pads. All other areas would consist of a compacted road base. As such, the proposed WTPs would result in a minimal increase of impervious surface area and would not prevent water from infiltrating into the groundwater nor would it result in direct additions or withdrawals to existing groundwater. As such, operation of the project would result in a less than significant impact associated with groundwater quality due to stormwater runoff. As such, the proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan and impacts would be less than significant.



## 4.11 LAND USE AND PLANNING

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 4.11.1 Impact Analysis

#### a. *Would the project physically divide an established community?*

The physical division of an established community typically refers to the construction of a feature (such as an interstate highway or railroad tracks) or removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community, or between a community and outlying areas. For instance, the construction of an interstate highway through an existing community may constrain travel from one side of the community to another; similarly, such construction may also impair travel to areas outside of the community.

The proposed project would include the installation of WTPs at Well Site 7 and Well Site 11 to meet the water quality objectives for treating the City's water supply. Installation of the WTPs within these existing well sites would not disturb or alter access to any existing adjacent land uses. Therefore, the proposed project would not result in a physical division of an established community or adversely affect the continuity of land uses in the vicinity, and there would be no impact.

#### b. *Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?*

The Land Use Element of the City of Lemoore General Plan currently designates Well Site 7 as Public/Institutional and designates Well Site 11 as Transportation/Utilities/ROW. The zoning designation for Well Site 7 is Public Services and Community Facilities (CF) and Medium Density Residential (RMD) and the zoning designation for Well Site 11 is Parks and Recreation/Ponding Basin (PR). Land use at the project sites would remain the same with project implementation, and the proposed project would not conflict with any applicable land use plan, policy or regulation of the City of Lemoore that was adopted for the purpose of avoiding or mitigating an environmental impact. As such, no land use incompatibilities or conflicts with existing plans or policies would result from the proposed project. Therefore, the proposed project would not conflict with any applicable land use plan, policy or regulation, and no impact would occur.

## 4.12 MINERAL RESOURCES

	Potentially Significant Impact	Less Than Significant with 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 4.12.1 Impact Analysis

- a. *Would the project 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?*

The Surface Mining and Reclamation Act (SMARA) regulates surface mining in California. SMARA was adopted in 1975 to protect the State's need for a continuing supply of mineral resources and to protect the public and environmental health. SMARA requires that all cities incorporate mapped mineral resource designations approved by the State Mining and Geology Board into their General Plans.

State and local governments classify mineral resources based on geologic factors. The State Geologist is required classify the mineral resources area as one of the four mineral resource zones (MRZ), as a scientific resource zone, or as an identified resource area as follows:

- **MRZ-1:** Adequate information indicates that no significant mineral deposits are present or likely to be present.
- **MRZ-2:** Adequate information indicates that significant mineral deposits are present, or a likelihood of their presence, and development should be controlled.
- **MRZ-3:** The significance of mineral deposits cannot be determined from the available data.
- **MRZ-4:** There is insufficient data to assign any other MRZ designation.
- **SZ Areas:** Contains unique or rare occurrences of rocks, minerals, or fossils that are of outstanding scientific significance.
- **IRA Areas:** Areas identified by the County or State Division of Mines and Geology, where adequate production and information indicates that significant minerals are present.

According to the City's General Plan, there are no mapped mineral resources in the City and no regulated mine facilities as of July 2007.<sup>32</sup>

The proposed project would include the installation of WTPs at two existing well sites. The project would result in disturbance to a relatively small area, and based on available data, a mineral resource loss associated with project implementation is not anticipated. Therefore, implementation of the proposed project would not result in the loss of known mineral resources or recovery sites. Therefore, no impact would occur.

*b. Would the project 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?*

Refer to Section 4.12.1.a. Implementation of the proposed project would not result in the loss of availability of a locally-important mineral resource recovery site. Therefore, no impact would occur.

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<sup>32</sup> Lemoore, City of, 2008, op. cit.

## 4.13 NOISE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:				
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 4.13.1 Impact Analysis

- a. *Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, or sleep. Several noise measurement scales exist that are used to describe noise in a particular location. A decibel (dB) is a unit of measurement that indicates the relative intensity of a sound. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense and 30 dB is 1,000 times more intense. Each 10 dB increase in sound level is perceived as approximately a doubling of loudness; and similarly, each 10 dB decrease in sound level is perceived as half as loud. Sound intensity is normally measured through the A-weighted sound level (dBA). This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. The A-weighted sound level is the basis for 24-hour sound measurements that better represent human sensitivity to sound at night.

As noise spreads from a source, it loses energy so that the farther away the noise receiver is from the noise source, the lower the perceived noise level would be. Geometric spreading causes the sound level to attenuate or be reduced, resulting in a 6 dB reduction in the noise level for each doubling of distance from a single point source of noise to the noise sensitive receptor of concern.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. Equivalent continuous sound level ( $L_{eq}$ ) is the total sound energy of time varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the  $L_{eq}$ , the community noise equivalent level (CNEL), and the day-night average level ( $L_{dn}$ ) based on dBA. CNEL is the time varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly  $L_{eq}$  for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and 10 dBA

weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours).  $L_{dn}$  is similar to the CNEL scale, but without the adjustment for events occurring during the evening relaxation hours. CNEL and  $L_{dn}$  are within one dBA of each other and are normally exchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours.

A project would have a significant noise effect if it would substantially increase the ambient noise levels for adjoining areas or conflict with adopted environmental plans and goals of applicable regulatory agencies, including, as appropriate, the City of Lemoore.

The City's General Plan Noise Element<sup>33</sup> provides guiding policies and implementing policies that strive to achieve an acceptable noise environment, ensure new development is compatible with the noise environment, and protect especially sensitive uses from excessive noise, including schools, hospitals, and senior care facilities. The following policies are applicable to the proposed project:

- SN-I-32: Use the community noise compatibility standards, shown in Table 4.E, as review criteria for new land uses.
- SN-I-33: Consider an increase of 5 or more dBA to be "significant" if the resulting noise level would exceed that described as "normally acceptable" in Table 4.E.
- SN-I-40: Require developers to mitigate the noise impacts of new development on adjacent properties as a condition of permit approval through appropriate means, including, but not limited to:
  - Screen and control noise sources, such as parking and loading facilities, outdoor activities, and mechanical equipment;
  - Increase setbacks for noise sources from adjacent dwellings;
  - Retain fences, walls, and landscaping that serve as noise buffers;
  - Use soundproofing materials and double-glazed windows;
  - Use open space, building orientation and design, landscaping and running water to mask sounds;
  - Control hours of operation, including deliveries and trash pickup, to minimize noise impacts; and
  - As a last resort, construct noise walls along highways and arterials when compatible with aesthetic concerns and neighborhood character. This would be a developer responsibility.

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<sup>33</sup> Lemoore, City of, 2008, op. cit.

**Table 4.E: Land Use Compatibility for Community Noise Environments**

	Community Noise Exposure $L_{dn}$ or CNEL (dB)						
	55	60	65	70	75	80	85
Residential – Low Density Single Family							
Residential – Multi Family							
Mixed-Use and High Density Residential							
Transient Lodging – Motels, Hotels							
Schools, Libraries, Churches, Hospitals, Nursing Homes							
Auditoriums, Concerts, Halls, Amphitheaters							
Sports Area, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Businesses Commercial and Professional							
Industrial, Manufacturing Utilities, Agriculture							

Source: City of Lemoore (2007).

Normally Acceptable

Conditionally Acceptable

Normally Unacceptable

Clearly Unacceptable

Specified land use is satisfactory, based upon the assumption that any building involved is of normal conventional construction, without any special noise insulation requirements.

New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

New construction or development should not be undertaken.



- SN-I-43: Require new noise sources to use best available control technology to minimize noise emissions.
- SN-I-44: Require noise from permanent mechanical equipment to be reduced by soundproofing materials and sound-deadening installation.
- SN-I-45: Minimize vehicular and stationary noise sources and noise emanating from temporary activities, such as those arising from construction work.

Article 9-5B-2: Noise, Odor, and Vibration Performance Standards (Noise Standards) in the City's Municipal Code includes performance standards for all permanent and temporary land uses within the City relative to noise, odor, and vibration in order to provide compatibility between neighboring land uses by minimizing various potential impacts.<sup>34</sup> The Noise Standards set land use noise standards as shown in Table 4.F.

**Table 4.F: Land Use Noise Standards**

Land Use	Noise Standards (dB CNEL)	
	Interior Noise	Exterior Noise
Residential Uses	45	65 <sup>1</sup>
Residential Uses in Mixed Use Zones	45	70
Commercial	-	70
Office	50	70
Industrial	55	75
Public Facilities	50	70
Parks	-	70
Schools	50	65

Source: City of Lemoore (2018).

<sup>1</sup> In outdoor living areas, e.g., backyards.

The Noise Standards also address construction activity noise and states that construction activities are exempt from the City's noise standards provided that activities occur between the hours of 7:00 a.m. to 8:00 p.m. Monday through Saturday. Extended construction hours may only be allowed by the review authority through conditions of approval between 8:00 p.m. and 10:00 p.m. On Sundays and national holidays, construction activities may only be allowed by the review authority through conditions of approval between 9:00 a.m. and 5:00 p.m.

Certain land uses are considered more sensitive to noise than others. Examples of these sensitive land uses include residential areas, educational facilities, hospitals, childcare facilities, and senior housing. The closest sensitive receptors to Well Site 7 include the planned residential development located approximately 80 feet west of the site boundary and the closest sensitive receptors to Well Site 11 include the single-family residences located approximately 90 feet south of the site boundary.

<sup>34</sup> Lemoore, City of, 2018, op. cit.

**Short-Term (Construction) Noise Impacts.** Project construction would result in short-term noise impacts on the nearby sensitive receptors. Maximum construction noise would be short-term, generally intermittent depending on the construction phase, and variable depending on receiver distance from the active construction zone. The duration of noise impacts generally would be from one day to several days depending on the phase of construction. The level and types of noise impacts that would occur during construction are described below.

Short-term noise impacts would occur during grading and site preparation activities. Table 4.G lists typical construction equipment noise levels ( $L_{max}$ ) recommended for noise impact assessments, based on a distance of 50 feet between the equipment and a noise receptor, obtained from the Federal Highway Administration (FHWA) Roadway Construction Noise Model. Construction-related short-term noise levels would be higher than existing ambient noise levels currently in the project area but would no longer occur once construction of the project is completed.

**Table 4.G: Typical Construction Equipment Noise Levels**

Equipment Description	Acoustical Usage Factor (%)	Maximum Noise Level ( $L_{max}$ ) at 50 Feet <sup>1</sup>
Backhoes	40	80
Compactor (ground)	20	80
Compressor	40	80
Cranes	16	85
Dozers	40	85
Dump Trucks	40	84
Excavators	40	85
Flat Bed Trucks	40	84
Forklift	20	85
Front-end Loaders	40	80
Graders	40	85
Impact Pile Drivers	20	95
Jackhammers	20	85
Pick-up Truck	40	55
Pneumatic Tools	50	85
Pumps	50	77
Rock Drills	20	85
Rollers	20	85
Scrapers	40	85
Tractors	40	84
Welder	40	73

Source: Roadway Construction Noise Model (FHWA 2006).

Note: Noise levels reported in this table are rounded to the nearest whole number.

<sup>1</sup> Maximum noise levels were developed based on Spec 721.560 from the Central Artery/Tunnel (CA/T) program to be consistent with the City of Boston's Noise Code for the "Big Dig" project.

$L_{max}$  = maximum instantaneous sound level

Two types of short-term noise impacts could occur during construction of the proposed project. The first type involves construction crew commutes and the transport of construction equipment and materials to the sites, which would incrementally increase noise levels on roads leading to the sites.

As shown in Table 4.G, there would be a relatively high single-event noise exposure potential at a maximum level of 84 dBA  $L_{max}$  with trucks passing at 50 feet.

The second type of short-term noise impact is related to noise generated during grading and construction on the project site. Construction is performed in discrete steps, or phases, each with its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on site. Therefore, the noise levels vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase.

Typical maximum noise levels range up to 87 dBA  $L_{max}$  at 50 feet during the noisiest construction phases. The site preparation phase, including excavation and grading of the site, tends to generate the highest noise levels because earthmoving machinery is the noisiest construction equipment. Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, draglines, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full-power operation followed by 3 or 4 minutes at lower power settings.

Construction of the proposed project would begin October 2019 and would be completed by November 2020. Construction activities and equipment for both of WTPs includes the following:

- Shallow soil excavation and re-compaction using bulldozers;
- Limited trenching for conveyance pipelines and electrical duct bank installation using backhoes;
- Forming and pouring of concrete foundation slabs and equipment pads using typical equipment;
- Installation of process vessels, tanks and electrical power and controls using a crane and reach-lift; and
- Site resurfacing including minor paving using typical equipment.

This analysis assumes that a bulldozer, dump truck, and backhoe would be operating simultaneously during construction of the WTPs. Based on the typical construction equipment noise levels shown in Table 4.G, noise levels associated with a bulldozer, dump truck, and backhoe operating simultaneously would be approximately 88 dBA  $L_{max}$  at 50 feet.

As noted above, the closest sensitive receptors to Well Site 7 include the planned residential development located approximately 80 feet west of the site boundary and the closest sensitive receptors to Well Site 11 include the single-family residences located approximately 90 feet south of the site boundary.

At 80 feet, there would be a decrease of approximately 4 dBA due to distance attenuation compared to the noise level measured at 50 feet from the active construction area and at 90 feet, there would be a decrease of approximately 5 dBA due to distance attenuation. Therefore, the closest sensitive receptor to Well Site 7 may be subject to short-term maximum construction noise reaching 84 dBA

$L_{max}$  during construction and the closest sensitive receptor to Well Site 11 may be subject to short-term maximum construction noise reaching 83 dBA  $L_{max}$  during construction. However, construction equipment would operate at various locations within the project sites and would only generate this maximum noise level when operations occur closest to the receptor.

Construction noise is permitted by the City of Lemoore when activities occur between the hours of 7:00 a.m. to 8:00 p.m. Monday through Saturday. In addition, Mitigation Measure NOI-1 would be required to limit construction activities to daytime hours and would reduce potential construction period noise impacts for the indicated sensitive receptors to a less-than-significant level.

- Mitigation Measure NOI-1:** The project contractor shall implement the following measures during construction of the proposed WTPs:
- Equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.
  - Place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the active project site.
  - Locate equipment staging in areas that would create the greatest possible distance between construction-related noise sources and noise-sensitive receptors nearest the active project site during all construction activities.
  - Ensure that all general construction related activities are restricted to between the hours of 7:00 a.m. to 8:00 p.m. Monday through Saturday.
  - Designate a "disturbance coordinator" at the City who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler) and would determine and implement reasonable measures warranted to correct the problem.

Implementation of Mitigation Measure NOI-1 would limit construction hours and require the construction contractor to implement noise reducing measures during construction, which would reduce short-term construction noise impacts to a less-than-significant level.

**Operational Noise Impacts.** A significant impact would occur if the project would exceed established standards, including resulting in a substantial permanent increase in ambient exterior noise levels above levels existing without the project. In acoustics, every doubling of an equal sound energy would result in a 3 dBA increase in combined noise level (an increase of 3 dBA represents the lowest noise increase that is perceptible by humans outside of a laboratory environment). As identified above, General Plan Policy SN-I-33 states that an increase of 5 or more dBA would be significant.

The proposed project includes the installation of WTPs at two existing well sites. Operation of the WTPs has the potential to generate an increase in the ambient noise environment associated with noise from vehicles and trucks, pumps, and other similar equipment.

As identified in the Project Description, the proposed WTPs would both operate 18 to 24 hours a day 7 days a week and staff operations would occur 4 hours day, Monday through Friday. Current staff visits to the site would remain the same at both well sites with implementation of the proposed project. Two maintenance workers would continue to visit the sites daily. In addition, the City estimates that two loads of liquid brine would be off-hauled daily (one load from each site). Due to the limited increase in daily traffic trips, the proposed project would not result in substantial traffic noise effects on adjacent land uses.

The components of the proposed WTPs that would generate the most noise would be the booster pumps used for boosting pressure to get through the treatment processes. Each booster pump is conservatively estimated to generate 65 dBA  $L_{max}$  at 20 feet from the pump.

**Well Site 7.** At Well Site 7, there are currently three existing booster pumps, which generate a combined noise level of approximately 69.8 dBA  $L_{max}$  at 50 feet. Implementation of the Station 7 WTP would include two new pumps for a total of five booster pumps, which would generate a combined noise level of approximately 72.0 dBA  $L_{max}$  at 50 feet. Therefore, operation of the booster pumps at the Station 7 WTP would increase noise levels by approximately 2.2 dBA, which is below the 3 dBA increase considered to be perceptible by the human ear in an outdoor environment and the City's significance criteria of 5 dBA or more.

In addition, the closest sensitive receptors to Well Site 7 include the planned residential development located approximately 80 feet west of the site boundary. However, booster pumps would be located approximately 45 feet east of the project boundary, approximately 125 feet from the residences. At 125 feet, there would be a decrease of approximately 16 dBA due to distance attenuation. Therefore, the closest sensitive receptor would be subject to noise levels of approximately 56.0 dBA  $L_{max}$ . As shown in Table 4.F above, the City sets exterior noise level standards at 65 dBA CNEL at receiving residential land uses. As identified above, the WTP would operate up to 24 hours a day 7 days a week. When averaged over a 24-hour period, this noise level would be approximately 62.7 dBA CNEL, which would not exceed the City's noise level standards for residential land uses. Therefore, the Station 7 WTP would not expose persons to noise levels in excess of noise standards and noise impacts would be less than significant.

**Well Site 11.** At Well Site 11, there are currently two existing booster pumps and one reserved for future use, which generate a combined noise level of approximately 69.8 dBA  $L_{max}$  at 50 feet. Implementation of the proposed project would include four new pumps for a total of seven booster pumps, which would generate a combined noise level of approximately 73.5 dBA  $L_{max}$  at 50 feet. Therefore, operation of the booster pumps at the Station 11 WTP would increase noise levels by approximately 3.7 dBA, which would be below the City's significance criteria of 5 dBA or more.

In addition, the closest sensitive receptors to Well Site 11 include the single-family residences located approximately 90 feet south of the site boundary. However, booster pumps would be

located approximately 35 feet north of the project boundary, approximately 125 feet from the residences. At 125 feet, there would be a decrease of approximately 16 dBA due to distance attenuation. Therefore, the closest sensitive receptor would be subject to noise levels of approximately 57.5 dBA  $L_{max}$ . As shown in Table 4.F above, the City sets exterior noise level standards at 65 dBA CNEL at receiving residential land uses. As identified above, the WTP would only operate up to 24 hours a day 7 days a week. When averaged over a 24-hour period, this noise level would be approximately 64.2 dBA CNEL. In addition, a 7-foot tall CMU wall would be added along the southern border of the site to screen the residential area from the Station 11 WTP. LSA calculated the attenuation provided by the wall, and determined that the wall would reduce noise levels by approximately 6.1 dBA. Therefore, the closest sensitive receptors would be exposed to a maximum noise level of approximately 58.1 dBA  $L_{max}$ , which would not exceed the City's noise level standards for residential land uses. Therefore, the Station 11 WTP would not expose persons to noise levels in excess of noise standards and noise impacts would be less than significant.

*b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?*

Vibration refers to groundborne noise and perceptible motion. Groundborne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors. Vibration energy propagates from a source, through intervening soil and rock layers, to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by the occupants as the motion of building surfaces, rattling of items on shelves or hanging on walls, or as a low-frequency rumbling noise. The rumbling noise is caused by the vibrating walls, floors, and ceilings radiating sound waves. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by 10 dB or less. This level is an order of magnitude below the damage threshold for normal buildings.

Typical sources of groundborne vibration are construction activities (e.g., pavement breaking and operating heavy-duty earthmoving equipment), and occasional traffic on rough roads. In general, groundborne vibration from standard construction practices is only a potential issue when within 25 feet of sensitive uses. Groundborne vibration levels from construction activities very rarely reach levels that can damage structures; however, these levels are perceptible near the active construction site. With the exception of old buildings built prior to the 1950s or buildings of historic significance, potential structural damage from heavy construction activities rarely occurs. When roadways are smooth, vibration from traffic (even heavy trucks) is rarely perceptible.

The streets surrounding the well sites consist of compacted road base and are unlikely to cause significant groundborne vibration. In addition, the rubber tires and suspension systems of buses and other on-road vehicles make it unusual for on-road vehicles to cause groundborne noise or vibration problems. It is, therefore, assumed that no such vehicular vibration impacts would occur, and no vibration impact analysis of on-road vehicles would be necessary. Therefore, once constructed, the WTPs would not contain uses that would generate groundborne vibration. This impact would be less than significant.



In addition, construction of the WTPs would involve grading and site preparation activities but would not involve the use of construction equipment that would result in substantial ground-borne vibration or ground-borne noise on properties adjacent to the well sites. No pile driving or other construction activity that would generate very high noise levels or ground borne vibration would occur. Furthermore, operation of the WTPs would not generate substantial ground-borne noise and vibration. Therefore, implementation of the proposed project would not result in the exposure of persons to or generation of excessive ground-borne noise and vibration impacts are considered less than significant.

*c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*

The well sites are not located within an airport land use plan, or within 2 miles of a public airport or public use airport. The closest airport is Naval Air Station Lemoore, located approximately 5 miles southeast of Well Site 7 and approximately 8 miles southeast of Well Site 11. Therefore, the project sites are not located within 2 miles of a public or public use airport. In addition, the proposed project would install WTPs at existing well sites and would not increase the residential or working population at the project sites. Therefore, the proposed project would not expose people to excessive noise levels related to airports and no impact would occur.

## 4.14 POPULATION AND HOUSING

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 4.14.1 Impact Analysis

- a. *Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*

The proposed project would include the installation of WTPs at Well Site 7 and Well Site 11 to meet the water quality objectives for treating the City's water supply. Current staff visits to the site would remain the same at both well sites with implementation of the proposed project. Two maintenance workers would continue to visit the sites daily. No increase in employment is anticipated as a result of project implementation. The proposed project would not include any new housing, commercial or industrial space, result in the conversion of adjacent land uses, or provide access to previously inaccessible areas. It would not provide additional major infrastructure or increase the capacity of the existing water system. Therefore, implementation of the proposed project would not directly or indirectly induce substantial population growth and no impact would occur.

- b. *Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?*

The Station 7 WTP would be located at Well Site 7. Well Site 7 currently consists of a 1.5 MG storage reservoir, a booster pump station, a sodium hypochlorite chemical feed system, Well 7, and a solar field. In addition, a new 1.5 MG reservoir is in the process of being constructed north of the existing water storage reservoir. A 12-inch sewer line runs along the west side of the plant. The Station 11 WTP would be located at Well Site 11. Well Site 11 consists of a 0.9 MG storage reservoir, a booster pump station, a sodium hypochlorite chemical feed system, Well 11, and a solar field. The City has plans to construct a new 0.9 MG storage reservoir on the south side of the existing reservoir. The existing site has a stormwater detention basin located on the west side of the existing storage reservoir and a 6-inch sewer line running along the east side of the site. As such, both well sites are currently developed with existing infrastructure and no permanent housing is located on the project site. Therefore, implementation of the proposed project would not remove existing housing, necessitating the construction of replacement housing elsewhere. Therefore, no impact would occur.

## 4.15 PUBLIC SERVICES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. 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:				
i. Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii. Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii. Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv. Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v. Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 4.15.1 Impact Analysis

- a. *Would the project 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:*

i. *Fire protection?*

The Lemoore Volunteer Fire Department (LVFD) has operated as an all-volunteer department since 1921. The LVFD includes one Chief, two Assistant Chiefs, four Crew Captains, seven Engineers, eleven Emergency Medical Technicians, one paid part-time Secretary, and one paid full-time maintenance worker. The department covers an area of approximately 9 square miles, with Mutual Aid Agreements with Kings County Fire, Hanford City Fire and the Naval Air Station Lemoore. Other public services provided include fire inspections, tours and demonstrations, permitting of certain hazardous materials, and investigation of hazardous materials incidents. The Fire Department regulates explosive and hazardous materials under the Uniform Fire Code, and permits the handling, storage and use of any explosive or other hazardous material.<sup>35</sup>

The proposed project would not include the construction of structures that would increase the population in the area or that would generate a higher demand for fire protection. Therefore, the demand for fire protection for the project would be the same as under existing conditions. No impact to fire protection would occur.

<sup>35</sup> Lemoore, City of, 2008, op. cit.

*ii. Police protection?*

The Lemoore Police Department provides police protection to the sites. The Lemoore Police Department station is located at 657 Fox Street. The Lemoore Police Department currently has 31 sworn officers, 7 civilian staff members, and 30 vehicles, a ratio of 1.33 officers per 1,000 residents.<sup>36</sup>

The proposed project would not include the construction of structures that would increase the population in the area or that would generate a higher demand for police protection. Therefore, the demand for police protection for the project would be the same as under existing conditions. No impact to police protection would occur.

*iii. Schools?*

Implementation of the proposed project would not include the construction of any new residential uses. As described in Section 4.14.1.a, the proposed project would not induce housing or population growth, either directly or indirectly, within the City. Therefore, implementation of the proposed project would not result in an increase in the number of school-age children in the area and would not increase demand for schools. As a result, no impact would occur.

*v. Parks?*

The proposed project does not include the construction of structures that would increase the population in the area or that would generate a higher demand for parks or other public facilities. Therefore, the demand for parks for the project would be the same as under existing conditions. No impact to parks would occur.

*v. Other public facilities?*

The proposed project does not include the construction of structures that would increase the population in the area or that would generate a higher demand for parks or other public facilities. Therefore, the demand for public facilities for the project would be the same as under existing conditions. No impact to public facilities would occur.

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<sup>36</sup> Ibid.

## 4.16 RECREATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 4.16.1 Impact Analysis

- a. *Would the project 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?*

Development of the project would include the installation of WTPs at Well Site 7 and Well Site 11 to meet the water quality objectives for treating the City's water supply. No housing would be constructed as part of the project. Therefore, implementation of the proposed project would not increase the use of existing neighborhood or regional parks in the project vicinity. Implementation of the proposed project would not have an adverse effect on existing park facilities and would not generate a demand for additional recreational facilities. No impact would occur, and no mitigation is required.

- b. *Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*

See Section 4.16.1.a, above. The proposed project would not include construction or expansion of recreational facilities. Therefore, no impact would occur and no mitigation is required.

## 4.17 TRANSPORTATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 4.17.1 Impact Analysis

*a. Would the project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?*

At the core of Lemoore's circulation network is the roadway system. All modes of transportation depend to some degree upon the roadway system. In Lemoore, this system is based on a traditional grid pattern in the downtown surrounded by a system of arterial and collector roadways. Regional access is provided by State Route 198 from northeast to southwest and State Route 41 from north to south.

Kings Area Rural Transit (KART) provides fixed-route and demand-response (Dial-a-Ride) service in the Lemoore Planning Area. Amtrak and Orange Belt provide bus service connections to areas outside of the KART service area. These services connect to Goshen in Tulare County for transfers to Greyhound or to Paso Robles to connect to points beyond. The Navy base provides bus service around the military base to areas that KART does not serve. The KART fixed route system covers all of the urbanized areas, as well as the rural communities of Kings County and Visalia. Dial-a-Ride services are offered by KART each weekday within the communities of Hanford, Lemoore, Armona and Avenal to meet the needs of the disabled community who might not be able to access the fixed route services.<sup>37</sup>

Kings County's Regional Bicycle Plan, adopted in 2005, illustrates both existing and planned bikeways for the City of Lemoore as well as other jurisdictions within the County. Currently Lemoore's bikeways extend throughout central Lemoore to the Municipal Golf Course and Little League field in the south and out 18<sup>th</sup> Avenue to the north. Planned bikeways will expand the network further out from central Lemoore to include the West Hills Community College in the west.<sup>38</sup>

Pedestrian flow patterns show similarities to vehicular traffic stream characteristics. Speed, flow rate, and density are interrelated. Capacity and density for pedestrians are dependent on width of

<sup>37</sup> Lemoore, City of, 2008, op. cit.

<sup>38</sup> Ibid.



the walking facility and the type of walking facility (e.g., walkways, crosswalks, and street corners). For crosswalks, pedestrian capacity and waiting time is affected by turning vehicles, signal timing, pedestrian/vehicle right-of-way laws, and pedestrian platoons meeting in the middle of the street. Street corners at signalized intersections are holding areas as well, and can be a critical location in the sidewalk network. While sidewalk capacity is not an issue, in general, all areas should be designed to a scale that accommodates pedestrians and bicyclists. Improvements in areas within the City that currently have undersized or no pedestrian facilities should be made a priority so that the pedestrian system will be better connected. Pedestrian-friendly facilities should also be provided near transit stops and adjacent to medium and higher density residential areas.<sup>39</sup>

The proposed project would include the installation of WTPs at two existing well sites, Well Site 7 and Well Site 11. As discussed in the Project Description, current staff visits to the site would remain the same at both well sites with implementation of the proposed project. Two maintenance workers would continue to visit the sites daily. In addition, the City estimates that two loads of liquid brine would be off-hauled daily (one load from each site) to the EBMUD facility and one load of solid arsenic/brine wastes would be off-hauled every 3 months to Waste Management Kettleman Hills Landfill.

Due to the limited addition of project-related traffic, the proposed project is not anticipated to generate a significant number of trips that would result in the deficiency of existing intersections within the vicinity of the project sites. As such, the addition of project traffic is not anticipated to generate a significant number of trips that would result in the deficiency of existing intersections within the project sites vicinity. In addition, implementation of the proposed project would not disrupt or otherwise prevent roadway improvements, including the addition of bike paths or sidewalks in the vicinity of the project sites. The project would also not disrupt existing transit services. Therefore, the proposed project would not conflict with any plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system or congestion management program. This impact would be less than significant.

*b. Would the project conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b)?*

On September 27, 2013, Governor Jerry Brown signed SB 743 into law and started a process that changes the methodology of a transportation impact analysis as part of CEQA requirements. SB 743 directed the California Office of Planning and Research to establish new CEQA guidance for jurisdictions that removes the level of service method, which focuses on automobile vehicle delay and other similar measures of vehicular capacity or traffic congestion, from CEQA transportation analysis. Rather, VMT, or other measures that promote “the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses,” are now be used as the basis for determining significant transportation impacts in the State.

As identified above, current staff visits to the site would remain the same at both well sites with implementation of the proposed project. Two maintenance workers would continue to visit the sites daily. In addition, the City estimates that two loads of liquid brine would be off-hauled daily (one load from each site) to the EBMUD facility and one load of solid arsenic/brine wastes would be off-

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<sup>39</sup> Ibid.

hauled every 3 months to Waste Management Kettleman Hills Landfill. The EBMUD facility is located approximately 203 miles from Well Site 7 and approximately 206 miles from Well Site 11. In addition, Waste Management Kettleman Hills Landfill is located approximately 29 miles from Well Site 7 and approximately 32 miles from Well Site 11. As such, it is anticipated that Well Site 7 would generate approximately 148,422 VMT per year and Well Site 11 would generate approximately 150,380 VMT per year.

The City of Lemoore has not established a threshold of significance for VMT. However, as the proposed project would only include new WTPs at existing well sites, operation of the proposed project is not anticipated to generate a significant number of trips that would result in the deficiency of existing intersections within the project sites vicinity. In addition, implementation of the proposed project would not disrupt or otherwise prevent roadway improvements, including the addition of bike paths or sidewalks in the vicinity of the project sites. The project would also not disrupt existing transit services. As such, implementation of the proposed project is not anticipated to generate a substantial increase in VMT and would not conflict with goals related to the reduction of VMT and compliance with SB 743. Therefore, the project would be consistent with State CEQA Guidelines Section 15064.3. Implementation of the proposed project would result in less-than-significant VMT impacts, and no mitigation would be required.

*c. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*

The proposed project includes the installation of WTPs at Well Site 7 and Well Site 11. The proposed project would be within the footprint of the existing well sites and would not result in the expansion of either well site. As such, implementation of the proposed project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). Therefore, no impact would occur.

*d. Would the project result in inadequate emergency access?*

The proposed project would not result in the development of structures or alteration of existing roadways that would impede or obstruct emergency response plans or evacuation plans. Therefore, development and operation of the proposed project is not anticipated to interfere with emergency access, and no impact would occur.

## 4.18 TRIBAL CULTURAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)? Or	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 4.18.1 Impact Analysis

- a. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:*
- i. *Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)? Or*
  - ii. *A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.*

AB 52, which became law on January 1, 2015, provides for consultation with California Native American tribes during the CEQA environmental review process, and equates significant impacts to "tribal cultural resources" with significant environmental impacts. PRC Section 21074 states that "tribal cultural resources" are:

Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe and are one of the following:

- Included or determined to be eligible for inclusion in the California Register of Historical Resources;
- Included in a local register of historical resources as defined in subdivision (k) of PRC Section 5020.1; or
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

A “historical resource” (PRC Section 21084.1), a “unique archaeological resource” (PRC Section 21083.2(g)), or a “nonunique archaeological resource” (PRC Section 21083.2 (h)) may also be a tribal cultural resource if it is included or determined to be eligible for inclusion in the California Register. The consultation provisions of the law require that a public agency consult with local Native American tribes that have requested placement on that agency’s notification list for CEQA projects. Within 14 days of determining that a project application is complete, or a decision by a public agency to undertake a project, the lead agency must notify tribes of the opportunity to consult on the project, should a tribe have previously requested to be on the agency’s notification list. California Native American tribes must be recognized by the NAHC as traditionally and culturally affiliated with the project site, and must have previously requested that the lead agency notify them of projects. Tribes have 30 days following notification of a project to request consultation with the lead agency.

The purpose of consultation is to inform the lead agency in its identification and determination of the significance of tribal cultural resources. If a project is determined to result in a significant impact on an identified tribal cultural resource, the consultation process must occur and conclude prior to adoption of a Negative Declaration or Mitigated Negative Declaration, or certification of an Environmental Impact Report (PRC Sections 21080.3.1, 21080.3.2, 21082.3).

On July 12, 2019, LSA submitted a request to the NAHC to request a review of the Sacred Lands File (SLF) for the presence of Native American cultural resources that might be impacted by the proposed project. The NAHC maintains the SLF database and is the official State repository of Native American sacred-site location records in California.

Ms. Katy Sanchez, NAHC Associate Environmental Planner, responded to the SLF search request on July 25, 2019, stating that the results were negative, and that no Native American cultural resources were known in the area.

On August 15, 2019, the City provided formal notification to the California Native American tribes that are traditionally and culturally affiliated with the geographic area within which the project sites are located, pursuant to the consultation requirements of AB 52. The City received no responses from the tribal representatives during the 30-day comment period.

## 4.19 UTILITIES AND SERVICE SYSTEMS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Result in a determination by the wastewater treatment provider which 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### 4.19.1 Impact Analysis

- a. *Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?*

The proposed project would include the installation of WTPs at Well Site 7 and Well Site 11 to meet the water quality objectives for treating the City's water supply. Construction and operation of the proposed project would have minimal to no impacts on water supply, natural gas, and telecommunications facilities. Therefore, no exceedance of the capacities of these services would occur that would result in a significant environmental impact. Development of the proposed project has the potential to impact wastewater treatment and sewer services due to the proposed treatment processes. In addition, the proposed WTPs would be powered by electricity; therefore operation of the proposed project has the potential to impact electrical services due to the need to modify utility service capacity from PG&E to accommodate the existing loads.

As described in Section 4.10.1.a, the treatment processes that are proposed for both the Station 7 WTP and Station 11 WTP include pH reduction, ozone injection, GAC filtration, ion exchange filtration, pH stabilization, and disinfection. Each ion exchange vessel regeneration creates a significant TDS waste loading. Discharging brine water from ion exchange regeneration to the sewer has significant challenges from a regulatory standpoint. The City's current discharge from the WWTP is at or near its regulated TDS limit. Backwash water would be supplied by the City's distribution system and backwash flow would be equalized into an equalization tank for subsequent discharge into the sewer system; however once arsenic is removed, the spent brine would be disposed of



offsite. Arsenic sludge would be characterized and periodically disposed of offsite. The City estimates that two loads of liquid brine would be off-hauled daily (one load from each site) to the EBMUD facility and one load of solid arsenic/brine wastes would be off-hauled every 3 months to Waste Management Kettleman Hills Landfill. Therefore, because the spent brine would be disposed of offsite and not discharged to the WWTP, the proposed project would not require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage facilities.

In addition, as discussed above in Section 4.6.1.a, the existing Well Site 7 operating load is 540A and the new Station 7 WTP operating load would be 472A for a total expected operating load of 1,012A. In addition, there would be some additional loads for site lighting and heat tracing, which would be confirmed during final design. The existing main electrical panel at Well Site 7 is insufficiently rated for the addition of the proposed new electrical loads to the existing electrical loads. As such, the existing 480V utility service capacity from PG&E would be modified to accommodate the project.<sup>40</sup>

The existing Well Site 11 operating load is 546A and the new Station 11 WTP operating load would be 502A for a total expected operating load of 1,048A. In addition, there would also be some additional loads for site lighting and heat tracing, which would be confirmed during final design. The existing main electrical panel at Well Site 11 is insufficiently rated for the addition of the proposed new electrical loads to the existing electrical loads. As such, the existing 480V utility service capacity from PG&E would be modified to accommodate the project.<sup>41</sup> Due to the small electricity demand associated with the proposed project, the proposed project would not result in construction of facilities that would result in significant environmental effects. Therefore, impacts would be less than significant, and no mitigation would be required.

*b. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?*

See Section 4.19.1.a above. The proposed project would include the installation of WTPs at Well Site 7 and Well Site 11 to meet the water quality objectives for treating the City's water supply. Construction and operation of the proposed project would not result in direct additions or withdrawals to existing groundwater and as such would not result in impacts on water supply. Therefore, no exceedance of the capacities of these services would occur that would result in a significant impact. Therefore, the proposed project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years and impacts would be less than significant.

*c. Would the project result in a determination by the wastewater treatment provider which 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?*

As described in Section 4.10.1.a, the treatment processes that are proposed for both the Station 7 WTP and Station 11 WTP include pH reduction, ozone injection, GAC filtration, ion exchange

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<sup>40</sup> Ibid.

<sup>41</sup> Ibid.

filtration, pH stabilization, and disinfection. Each ion exchange vessel regeneration creates a significant TDS waste loading.

Discharging brine water from ion exchange regeneration to the sewer has significant challenges from a regulatory standpoint. The City's current discharge from the WWTP is at or near its regulated TDS limit. Backwash water would be supplied by the City's distribution system and backwash flow would be equalized into an equalization tank for subsequent discharge into the sewer system; however once arsenic is removed, the spent brine would be disposed of offsite. Arsenic sludge would be characterized and periodically disposed of offsite. The City estimates that two loads of liquid brine would be off-hauled daily (one load from each site) to the EBMUD facility and one load of solid arsenic/brine wastes would be off-hauled every 3 months to Waste Management Kettleman Hills Landfill. Therefore, because the spent brine would be disposed of offsite and not discharged to the WWTP, impacts related to wastewater generation would be less than significant, and no mitigation would be required.

*d. Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?*

Solid waste disposal for Lemoore is managed by Kings Waste and Recycling Authority. The City's Public Works Department Refuse Division is responsible for solid waste collection services. The majority of the City's solid waste is taken to Waste Management Kettleman Hills Landfill, a Class II/III facility owned by Chemical Waste Management. The facility is located south of Lemoore, has a capacity of 4.2 million cubic yards, and was 55 percent full as of June 2005.<sup>42</sup> Waste Management Kettleman Hills Landfill is currently proposing a facility expansion to extend its hazardous waste operations and increase the capacity at the existing landfill.<sup>43</sup>

Construction of the Station 7 WTP would require approximately 500 cubic yards of soil off-haul and construction of the Station 11 WTP would require approximately 750 cubic yards of soil off-haul. Soil removed as part of this process would be collected and moved to other City property and would not result in an impact on municipal disposal services.

Current staff visits to the site would remain the same at both well sites with implementation of the proposed project. Two maintenance workers would continue to visit the sites daily. Once operational, solid waste generation is expected to be minimal and would not result in a significant impact on municipal disposal services. Therefore, the proposed project would be served by landfills with sufficient permitted capacity to accommodate the solid waste disposal needs. Therefore, the proposed project would result in a less-than-significant impact to solid waste and landfill facilities.

<sup>42</sup> Lemoore, City of, 2008, op. cit.

<sup>43</sup> Waste Management, 2019. *Facility Expansion*. Website: [kettlemanhillslandfill.wm.com/facility-expansion/index.jsp](http://kettlemanhillslandfill.wm.com/facility-expansion/index.jsp) (accessed July 2019).

*e. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?*

The proposed project would be required to comply with all federal, State, and local regulations related to solid waste. Furthermore, the proposed project would be required to comply with all standards related to solid waste diversion, reduction, and recycling during project construction and operation. The proposed project would comply with all federal, State and local statutes and regulations related to solid waste. As such, any impacts would be less than significant.

## 4.20 WILDFIRE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### 4.20.1 Impact Analysis

#### a. *Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?*

Wildland fires occur in geographic areas that contain the types and conditions of vegetation, topography, weather, and structure density susceptible to risks associated with uncontrolled fires that can be started by lightning, improperly managed camp fires, cigarettes, sparks from automobiles, and other ignition sources.

According to the California Department of Forestry and Fire Protection Very High Fire Hazard Severity Zone (VHFHSZ) Map for Kings County, neither of the well sites are located within a VHFHSZ.<sup>44</sup> In addition, based on Figure 8-2 of the City's General Plan, neither of the well sites are identified within a high wildfire threat area. Therefore, the proposed project would not expose people to significant risk of loss, injury, or death due to wildland fires and this impact would be less than significant.

As discussed in Section 4.9.1.f, implementation of the proposed project would not interfere with an adopted emergency response plan or emergency evacuation plan and would not alter any of the streets within, or adjacent to, the project sites. Therefore, implementation of the proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan and impacts would be less than significant.

<sup>44</sup> California Department of Forestry and Fire Protection. *Wildland Hazard & Building Codes, Kings County, FHSZ Map. State and Local Responsibility Areas*. Website: [osfm.fire.ca.gov/divisions/wildfire-prevention-planning-engineering/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/](https://osfm.fire.ca.gov/divisions/wildfire-prevention-planning-engineering/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/) (accessed July 2019).

- b. Would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*

As stated previously, the well sites are not located in or near a VHFHSZ nor are they located in or near a State Responsibility Area. Therefore, implementation of the proposed project would not exacerbate wildfire risks due to slope and prevailing winds, thereby exposing project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. As a result, a less-than-significant impact would occur, and no mitigation would be required.

- c. Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*

The proposed project would include the installation of WTPs at Well Site 7 and Well Site 11 to meet the water quality objectives for treating the City's water supply. These improvements would not exacerbate fire risk due to the location of the well sites located in areas outside of a designated fire hazard zone. Therefore, implementation of the proposed project would not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that would exacerbate fire risk or result in temporary or ongoing impacts to the environment. As a result, a less-than-significant impact would occur, and no mitigation would be required.

- d. Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

Landslides and other forms of mass wasting, including mud flows, debris flows, and soil slips, occur as soil moves downslope under the influence of gravity. Landslides are frequently triggered by intense rainfall or seismic shaking but can also occur as a result of erosion and downslope runoff caused by rain following a fire. As previously discussed in Section 4.7.1.a.iv, the City of Lemoore is not Susceptible to landslides due to very slight grades.

Because the well sites are generally level, the proposed project would not expose people or structures to potential substantial adverse effects associated with landslides. Further, as stated previously, the well sites are not located in or near a VHFHSZ nor are they located in or near a State Responsibility Area. Therefore, the proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. As a result, a less-than-significant impact would occur, and no mitigation would be required.

## 4.21 MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Does the project have the potential to 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, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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 probable future projects.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### 4.21.1 Impact Analysis

- a. *Does the project have the potential to 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, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?*

Implementation of the mitigation measures recommended in this Initial Study would ensure that construction and operation of the proposed project would not substantially degrade the quality of the environment; reduce the habitat, population, or range of a plant or animal species; or eliminate important examples 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 probable future projects)?*

The potential impacts of the project are individually limited and are not cumulatively considerable. Implementation of mitigation measures recommended in this report would reduce potentially significant impacts that could become cumulatively considerable.



*c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?*

The proposed project would be constructed and operated in accordance with all applicable regulations governing hazardous materials, noise, and geotechnical considerations. Because all potentially significant impacts of the proposed project are expected to be mitigated to less-than-significant levels, it is unlikely that implementation of the proposed project would cause substantial adverse effects on human beings. Therefore, implementation of the proposed project would not result in significant human health risks.

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## **APPENDIX A**

### **CALEEMOD OUTPUT SHEETS**





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## City of Lemoore Water Treatment Plants Project - San Joaquin Valley Unified APCD Air District, Annual

## City of Lemoore Water Treatment Plants Project

### San Joaquin Valley Unified APCD Air District, Annual

## 1.0 Project Characteristics

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### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	27.00	1000sqft	0.62	27,000.00	0
Parking Lot	47.00	1000sqft	1.08	47,000.00	0

### 1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.7	Precipitation Freq (Days)	45
Climate Zone	3			Operational Year	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	328.8	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

### 1.3 User Entered Comments & Non-Default Data

## City of Lemoore Water Treatment Plants Project - San Joaquin Valley Unified APCD Air District, Annual

Project Characteristics - CO2 intensity factor based on 5-year average (PG&E 2015).

Land Use - Station 7 WTP would be approximately 125 feet by 116 feet and Station 11 WTP; however the total ground disturbance area would be 27,000 square feet. Station 11 WTP would be approximately 123 feet by 175 feet; however the total ground disturbance area would be 47,000 square feet

Construction Phase - Construction of the proposed project would begin October 2019 and would be completed by November 2020

Off-road Equipment - Shallow soil excavation and re-compaction using bull dozers

Off-road Equipment - Limited trenching for conveyance pipelines and electrical duct bank installation using backhoes

Off-road Equipment - Forming and pouring of concrete foundation slabs and equipment pads using typical equipment and installation of process vessels, tanks and electrical power and controls using a crane and reach-lift

Off-road Equipment - Site resurfacing including minor paving using typical equipment

Off-road Equipment - Typical equipment

Grading - Station 7 WTP would require approximately 500 cubic yards of soil off-haul and Station 11 WTP would require approximately 750 cubic yards of soil off-haul

Vehicle Trips - The City estimates that two loads of liquid brine would be off-hauled daily (one load from each site) and one load of solid arsenic/brine wastes would be off-hauled every three months.

Fleet Mix - Assuming all heavy heavy duty haul trucks

Energy Use -

Stationary Sources - Emergency Generators and Fire Pumps - Generator would be used for testing approximately 15 minutes per month

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	30.00
tblConstructionPhase	NumDays	200.00	150.00
tblConstructionPhase	NumDays	4.00	30.00
tblConstructionPhase	NumDays	10.00	30.00
tblConstructionPhase	NumDays	2.00	30.00
tblConstructionPhase	PhaseEndDate	9/7/2020	11/6/2020
tblConstructionPhase	PhaseEndDate	8/10/2020	8/14/2020
tblConstructionPhase	PhaseEndDate	11/4/2019	1/17/2020
tblConstructionPhase	PhaseEndDate	8/24/2020	9/25/2020
tblConstructionPhase	PhaseEndDate	10/29/2019	12/6/2019

## City of Lemoore Water Treatment Plants Project - San Joaquin Valley Unified APCD Air District, Annual

[illegible]

## City of Lemoore Water Treatment Plants Project - San Joaquin Valley Unified APCD Air District, Annual

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	328.8
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	50.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	0.01
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	91.25
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	10.00	5.00
tblTripsAndVMT	WorkerTripNumber	13.00	10.00
tblVehicleTrips	CNW_TL	7.30	203.00
tblVehicleTrips	CNW_TTP	0.00	100.00
tblVehicleTrips	ST_TR	0.00	0.03
tblVehicleTrips	SU_TR	0.00	0.03
tblVehicleTrips	WD_TR	0.00	0.03

## 2.0 Emissions Summary

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## City of Lemoore Water Treatment Plants Project - San Joaquin Valley Unified APCD Air District, Annual

## 2.1 Overall Construction

### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.0627	0.6951	0.2823	6.2000e-004	0.2388	0.0322	0.2709	0.1299	0.0296	0.1595	0.0000	55.5813	55.5813	0.0164	0.0000	55.9906
2020	0.3089	2.4612	2.0823	3.8900e-003	0.0895	0.1260	0.2155	0.0405	0.1201	0.1606	0.0000	333.5512	333.5512	0.0630	0.0000	335.1265
Maximum	0.3089	2.4612	2.0823	3.8900e-003	0.2388	0.1260	0.2709	0.1299	0.1201	0.1606	0.0000	333.5512	333.5512	0.0630	0.0000	335.1265

### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.0627	0.6951	0.2823	6.2000e-004	0.2388	0.0322	0.2709	0.1299	0.0296	0.1595	0.0000	55.5812	55.5812	0.0164	0.0000	55.9905
2020	0.3089	2.4612	2.0823	3.8900e-003	0.0895	0.1260	0.2155	0.0405	0.1201	0.1606	0.0000	333.5508	333.5508	0.0630	0.0000	335.1262
Maximum	0.3089	2.4612	2.0823	3.8900e-003	0.2388	0.1260	0.2709	0.1299	0.1201	0.1606	0.0000	333.5508	333.5508	0.0630	0.0000	335.1262

[illegible]

## City of Lemoore Water Treatment Plants Project - San Joaquin Valley Unified APCD Air District, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	10-28-2019	1-27-2020	0.9884	0.9884
2	1-28-2020	4-27-2020	0.9631	0.9631
3	4-28-2020	7-27-2020	0.9625	0.9625
4	7-28-2020	9-30-2020	0.4659	0.4659
		Highest	0.9884	0.9884

## 2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	6.3900e-003	1.0000e-005	6.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3200e-003	1.3200e-003	0.0000	0.0000	1.4100e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.8628	3.8628	3.4000e-004	7.0000e-005	3.8923
Mobile	7.4000e-004	0.0370	3.6200e-003	5.0000e-005	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005	0.0000	4.3543	4.3543	1.3600e-003	0.0000	4.3882
Stationary	7.4900e-003	0.0244	0.0272	4.0000e-005		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003	0.0000	3.4748	3.4748	4.9000e-004	0.0000	3.4870
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0146</b>	<b>0.0615</b>	<b>0.0315</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>1.1200e-003</b>	<b>1.1200e-003</b>	<b>0.0000</b>	<b>1.1200e-003</b>	<b>1.1200e-003</b>	<b>0.0000</b>	<b>11.6931</b>	<b>11.6931</b>	<b>2.1900e-003</b>	<b>7.0000e-005</b>	<b>11.7688</b>



## City of Lemoore Water Treatment Plants Project - San Joaquin Valley Unified APCD Air District, Annual

**2.2 Overall Operational****Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	6.3900e-003	1.0000e-005	6.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3200e-003	1.3200e-003	0.0000	0.0000	1.4100e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.8628	3.8628	3.4000e-004	7.0000e-005	3.8923
Mobile	7.4000e-004	0.0370	3.6200e-003	5.0000e-005	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005	0.0000	4.3543	4.3543	1.3600e-003	0.0000	4.3882
Stationary	7.4900e-003	0.0244	0.0272	4.0000e-005		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003	0.0000	3.4748	3.4748	4.9000e-004	0.0000	3.4870
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0146</b>	<b>0.0615</b>	<b>0.0315</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>1.1200e-003</b>	<b>1.1200e-003</b>	<b>0.0000</b>	<b>1.1200e-003</b>	<b>1.1200e-003</b>	<b>0.0000</b>	<b>11.6931</b>	<b>11.6931</b>	<b>2.1900e-003</b>	<b>7.0000e-005</b>	<b>11.7688</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**3.0 Construction Detail****Construction Phase**

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	10/28/2019	12/6/2019	5	30	
2	Grading	Grading	12/9/2019	1/17/2020	5	30	
3	Building Construction	Building Construction	1/20/2020	8/14/2020	5	150	
4	Paving	Paving	8/17/2020	9/25/2020	5	30	
5	Architectural Coating	Architectural Coating	9/28/2020	11/6/2020	5	30	

**Acres of Grading (Site Preparation Phase): 1**

**Acres of Grading (Grading Phase): 1.5**

**Acres of Paving: 1.7**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 4,440 (Architectural Coating – sqft)**

**OffRoad Equipment**

## City of Lemoore Water Treatment Plants Project - San Joaquin Valley Unified APCD Air District, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	2	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Grading	Rubber Tired Dozers	2	6.00	247	0.40
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Cranes	2	6.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Site Preparation	Rubber Tired Dozers	2	7.00	247	0.40
Paving	Pavers	2	6.00	130	0.42
Paving	Rollers	2	7.00	80	0.38
Grading	Graders	1	6.00	187	0.41
Site Preparation	Graders	1	8.00	187	0.41
Building Construction	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	4	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	10.00	0.00	156.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	31.00	12.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	10	25.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	6.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

## City of Lemoore Water Treatment Plants Project - San Joaquin Valley Unified APCD Air District, Annual

**3.1 Mitigation Measures Construction****3.2 Site Preparation - 2019****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1586	0.0000	0.1586	0.0870	0.0000	0.0870	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0406	0.4507	0.1746	3.7000e-004		0.0210	0.0210		0.0193	0.0193	0.0000	33.2665	33.2665	0.0105	0.0000	33.5296
<b>Total</b>	<b>0.0406</b>	<b>0.4507</b>	<b>0.1746</b>	<b>3.7000e-004</b>	<b>0.1586</b>	<b>0.0210</b>	<b>0.1796</b>	<b>0.0870</b>	<b>0.0193</b>	<b>0.1062</b>	<b>0.0000</b>	<b>33.2665</b>	<b>33.2665</b>	<b>0.0105</b>	<b>0.0000</b>	<b>33.5296</b>

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**3.2 Site Preparation - 2019****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5000e-004	2.4000e-004	2.4600e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5556	0.5556	2.0000e-005	0.0000	0.5561
<b>Total</b>	<b>3.5000e-004</b>	<b>2.4000e-004</b>	<b>2.4600e-003</b>	<b>1.0000e-005</b>	<b>6.0000e-004</b>	<b>0.0000</b>	<b>6.0000e-004</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>0.5556</b>	<b>0.5556</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.5561</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1586	0.0000	0.1586	0.0870	0.0000	0.0870	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0406	0.4507	0.1746	3.7000e-004		0.0210	0.0210		0.0193	0.0193	0.0000	33.2665	33.2665	0.0105	0.0000	33.5296
<b>Total</b>	<b>0.0406</b>	<b>0.4507</b>	<b>0.1746</b>	<b>3.7000e-004</b>	<b>0.1586</b>	<b>0.0210</b>	<b>0.1796</b>	<b>0.0870</b>	<b>0.0193</b>	<b>0.1062</b>	<b>0.0000</b>	<b>33.2665</b>	<b>33.2665</b>	<b>0.0105</b>	<b>0.0000</b>	<b>33.5296</b>

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**3.2 Site Preparation - 2019****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5000e-004	2.4000e-004	2.4600e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5556	0.5556	2.0000e-005	0.0000	0.5561
<b>Total</b>	<b>3.5000e-004</b>	<b>2.4000e-004</b>	<b>2.4600e-003</b>	<b>1.0000e-005</b>	<b>6.0000e-004</b>	<b>0.0000</b>	<b>6.0000e-004</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>0.5556</b>	<b>0.5556</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.5561</b>

**3.3 Grading - 2019****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0777	0.0000	0.0777	0.0423	0.0000	0.0423	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0210	0.2307	0.1006	2.0000e-004		0.0112	0.0112		0.0103	0.0103	0.0000	17.7321	17.7321	5.6100e-003	0.0000	17.8723
<b>Total</b>	<b>0.0210</b>	<b>0.2307</b>	<b>0.1006</b>	<b>2.0000e-004</b>	<b>0.0777</b>	<b>0.0112</b>	<b>0.0888</b>	<b>0.0423</b>	<b>0.0103</b>	<b>0.0526</b>	<b>0.0000</b>	<b>17.7321</b>	<b>17.7321</b>	<b>5.6100e-003</b>	<b>0.0000</b>	<b>17.8723</b>

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**3.3 Grading - 2019****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.8000e-004	0.0132	1.9000e-003	4.0000e-005	1.1900e-003	5.0000e-005	1.2400e-003	3.1000e-004	5.0000e-005	3.6000e-004	0.0000	3.3974	3.3974	2.0000e-004	0.0000	3.4023
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	2.8000e-004	2.7900e-003	1.0000e-005	6.8000e-004	1.0000e-005	6.8000e-004	1.8000e-004	0.0000	1.9000e-004	0.0000	0.6297	0.6297	2.0000e-005	0.0000	0.6302
<b>Total</b>	<b>7.8000e-004</b>	<b>0.0135</b>	<b>4.6900e-003</b>	<b>5.0000e-005</b>	<b>1.8700e-003</b>	<b>6.0000e-005</b>	<b>1.9200e-003</b>	<b>4.9000e-004</b>	<b>5.0000e-005</b>	<b>5.5000e-004</b>	<b>0.0000</b>	<b>4.0271</b>	<b>4.0271</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>4.0325</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0777	0.0000	0.0777	0.0423	0.0000	0.0423	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0210	0.2307	0.1006	2.0000e-004		0.0112	0.0112		0.0103	0.0103	0.0000	17.7321	17.7321	5.6100e-003	0.0000	17.8723
<b>Total</b>	<b>0.0210</b>	<b>0.2307</b>	<b>0.1006</b>	<b>2.0000e-004</b>	<b>0.0777</b>	<b>0.0112</b>	<b>0.0888</b>	<b>0.0423</b>	<b>0.0103</b>	<b>0.0526</b>	<b>0.0000</b>	<b>17.7321</b>	<b>17.7321</b>	<b>5.6100e-003</b>	<b>0.0000</b>	<b>17.8723</b>



## City of Lemoore Water Treatment Plants Project - San Joaquin Valley Unified APCD Air District, Annual

**3.3 Grading - 2019****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.8000e-004	0.0132	1.9000e-003	4.0000e-005	1.1900e-003	5.0000e-005	1.2400e-003	3.1000e-004	5.0000e-005	3.6000e-004	0.0000	3.3974	3.3974	2.0000e-004	0.0000	3.4023
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	2.8000e-004	2.7900e-003	1.0000e-005	6.8000e-004	1.0000e-005	6.8000e-004	1.8000e-004	0.0000	1.9000e-004	0.0000	0.6297	0.6297	2.0000e-005	0.0000	0.6302
<b>Total</b>	<b>7.8000e-004</b>	<b>0.0135</b>	<b>4.6900e-003</b>	<b>5.0000e-005</b>	<b>1.8700e-003</b>	<b>6.0000e-005</b>	<b>1.9200e-003</b>	<b>4.9000e-004</b>	<b>5.0000e-005</b>	<b>5.5000e-004</b>	<b>0.0000</b>	<b>4.0271</b>	<b>4.0271</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>4.0325</b>

**3.3 Grading - 2020****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0596	0.0000	0.0596	0.0324	0.0000	0.0324	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0152	0.1653	0.0751	1.5000e-004		7.9100e-003	7.9100e-003		7.2800e-003	7.2800e-003	0.0000	13.2640	13.2640	4.2900e-003	0.0000	13.3713
<b>Total</b>	<b>0.0152</b>	<b>0.1653</b>	<b>0.0751</b>	<b>1.5000e-004</b>	<b>0.0596</b>	<b>7.9100e-003</b>	<b>0.0675</b>	<b>0.0324</b>	<b>7.2800e-003</b>	<b>0.0397</b>	<b>0.0000</b>	<b>13.2640</b>	<b>13.2640</b>	<b>4.2900e-003</b>	<b>0.0000</b>	<b>13.3713</b>

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**3.3 Grading - 2020****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.7000e-004	9.4200e-003	1.3700e-003	3.0000e-005	1.1400e-003	3.0000e-005	1.1800e-003	3.0000e-004	3.0000e-005	3.3000e-004	0.0000	2.5680	2.5680	1.4000e-004	0.0000	2.5716
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	1.9000e-004	1.9000e-003	1.0000e-005	5.2000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4667	0.4667	1.0000e-005	0.0000	0.4670
<b>Total</b>	<b>5.4000e-004</b>	<b>9.6100e-003</b>	<b>3.2700e-003</b>	<b>4.0000e-005</b>	<b>1.6600e-003</b>	<b>3.0000e-005</b>	<b>1.7000e-003</b>	<b>4.4000e-004</b>	<b>3.0000e-005</b>	<b>4.7000e-004</b>	<b>0.0000</b>	<b>3.0347</b>	<b>3.0347</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>3.0386</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0596	0.0000	0.0596	0.0324	0.0000	0.0324	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0152	0.1653	0.0751	1.5000e-004		7.9100e-003	7.9100e-003		7.2800e-003	7.2800e-003	0.0000	13.2640	13.2640	4.2900e-003	0.0000	13.3713
<b>Total</b>	<b>0.0152</b>	<b>0.1653</b>	<b>0.0751</b>	<b>1.5000e-004</b>	<b>0.0596</b>	<b>7.9100e-003</b>	<b>0.0675</b>	<b>0.0324</b>	<b>7.2800e-003</b>	<b>0.0397</b>	<b>0.0000</b>	<b>13.2640</b>	<b>13.2640</b>	<b>4.2900e-003</b>	<b>0.0000</b>	<b>13.3713</b>

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**3.3 Grading - 2020****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.7000e-004	9.4200e-003	1.3700e-003	3.0000e-005	1.1400e-003	3.0000e-005	1.1800e-003	3.0000e-004	3.0000e-005	3.3000e-004	0.0000	2.5680	2.5680	1.4000e-004	0.0000	2.5716
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	1.9000e-004	1.9000e-003	1.0000e-005	5.2000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4667	0.4667	1.0000e-005	0.0000	0.4670
<b>Total</b>	<b>5.4000e-004</b>	<b>9.6100e-003</b>	<b>3.2700e-003</b>	<b>4.0000e-005</b>	<b>1.6600e-003</b>	<b>3.0000e-005</b>	<b>1.7000e-003</b>	<b>4.4000e-004</b>	<b>3.0000e-005</b>	<b>4.7000e-004</b>	<b>0.0000</b>	<b>3.0347</b>	<b>3.0347</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>3.0386</b>

**3.4 Building Construction - 2020****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2276	1.8647	1.5806	2.7300e-003		0.0998	0.0998		0.0958	0.0958	0.0000	229.9636	229.9636	0.0443	0.0000	231.0709
<b>Total</b>	<b>0.2276</b>	<b>1.8647</b>	<b>1.5806</b>	<b>2.7300e-003</b>		<b>0.0998</b>	<b>0.0998</b>		<b>0.0958</b>	<b>0.0958</b>	<b>0.0000</b>	<b>229.9636</b>	<b>229.9636</b>	<b>0.0443</b>	<b>0.0000</b>	<b>231.0709</b>

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**3.4 Building Construction - 2020****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5700e-003	0.1096	0.0208	2.6000e-004	5.9700e-003	6.0000e-004	6.5700e-003	1.7200e-003	5.8000e-004	2.3000e-003	0.0000	24.3018	24.3018	1.9200e-003	0.0000	24.3498
Worker	9.8300e-003	6.6700e-003	0.0678	1.8000e-004	0.0186	1.3000e-004	0.0187	4.9400e-003	1.2000e-004	5.0600e-003	0.0000	16.6919	16.6919	4.8000e-004	0.0000	16.7039
<b>Total</b>	<b>0.0134</b>	<b>0.1162</b>	<b>0.0886</b>	<b>4.4000e-004</b>	<b>0.0246</b>	<b>7.3000e-004</b>	<b>0.0253</b>	<b>6.6600e-003</b>	<b>7.0000e-004</b>	<b>7.3600e-003</b>	<b>0.0000</b>	<b>40.9937</b>	<b>40.9937</b>	<b>2.4000e-003</b>	<b>0.0000</b>	<b>41.0536</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2276	1.8647	1.5806	2.7300e-003		0.0998	0.0998		0.0958	0.0958	0.0000	229.9633	229.9633	0.0443	0.0000	231.0706
<b>Total</b>	<b>0.2276</b>	<b>1.8647</b>	<b>1.5806</b>	<b>2.7300e-003</b>		<b>0.0998</b>	<b>0.0998</b>		<b>0.0958</b>	<b>0.0958</b>	<b>0.0000</b>	<b>229.9633</b>	<b>229.9633</b>	<b>0.0443</b>	<b>0.0000</b>	<b>231.0706</b>

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**3.4 Building Construction - 2020****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5700e-003	0.1096	0.0208	2.6000e-004	5.9700e-003	6.0000e-004	6.5700e-003	1.7200e-003	5.8000e-004	2.3000e-003	0.0000	24.3018	24.3018	1.9200e-003	0.0000	24.3498
Worker	9.8300e-003	6.6700e-003	0.0678	1.8000e-004	0.0186	1.3000e-004	0.0187	4.9400e-003	1.2000e-004	5.0600e-003	0.0000	16.6919	16.6919	4.8000e-004	0.0000	16.7039
<b>Total</b>	<b>0.0134</b>	<b>0.1162</b>	<b>0.0886</b>	<b>4.4000e-004</b>	<b>0.0246</b>	<b>7.3000e-004</b>	<b>0.0253</b>	<b>6.6600e-003</b>	<b>7.0000e-004</b>	<b>7.3600e-003</b>	<b>0.0000</b>	<b>40.9937</b>	<b>40.9937</b>	<b>2.4000e-003</b>	<b>0.0000</b>	<b>41.0536</b>

**3.5 Paving - 2020****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0252	0.2535	0.2663	4.1000e-004		0.0141	0.0141		0.0130	0.0130	0.0000	35.2971	35.2971	0.0112	0.0000	35.5768
Paving	2.2300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0274</b>	<b>0.2535</b>	<b>0.2663</b>	<b>4.1000e-004</b>		<b>0.0141</b>	<b>0.0141</b>		<b>0.0130</b>	<b>0.0130</b>	<b>0.0000</b>	<b>35.2971</b>	<b>35.2971</b>	<b>0.0112</b>	<b>0.0000</b>	<b>35.5768</b>

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**3.5 Paving - 2020****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5900e-003	1.0800e-003	0.0109	3.0000e-005	3.0000e-003	2.0000e-005	3.0200e-003	8.0000e-004	2.0000e-005	8.2000e-004	0.0000	2.6922	2.6922	8.0000e-005	0.0000	2.6942
<b>Total</b>	<b>1.5900e-003</b>	<b>1.0800e-003</b>	<b>0.0109</b>	<b>3.0000e-005</b>	<b>3.0000e-003</b>	<b>2.0000e-005</b>	<b>3.0200e-003</b>	<b>8.0000e-004</b>	<b>2.0000e-005</b>	<b>8.2000e-004</b>	<b>0.0000</b>	<b>2.6922</b>	<b>2.6922</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>2.6942</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0252	0.2535	0.2663	4.1000e-004		0.0141	0.0141		0.0130	0.0130	0.0000	35.2971	35.2971	0.0112	0.0000	35.5768
Paving	2.2300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0274</b>	<b>0.2535</b>	<b>0.2663</b>	<b>4.1000e-004</b>		<b>0.0141</b>	<b>0.0141</b>		<b>0.0130</b>	<b>0.0130</b>	<b>0.0000</b>	<b>35.2971</b>	<b>35.2971</b>	<b>0.0112</b>	<b>0.0000</b>	<b>35.5768</b>

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**3.5 Paving - 2020****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5900e-003	1.0800e-003	0.0109	3.0000e-005	3.0000e-003	2.0000e-005	3.0200e-003	8.0000e-004	2.0000e-005	8.2000e-004	0.0000	2.6922	2.6922	8.0000e-005	0.0000	2.6942
<b>Total</b>	<b>1.5900e-003</b>	<b>1.0800e-003</b>	<b>0.0109</b>	<b>3.0000e-005</b>	<b>3.0000e-003</b>	<b>2.0000e-005</b>	<b>3.0200e-003</b>	<b>8.0000e-004</b>	<b>2.0000e-005</b>	<b>8.2000e-004</b>	<b>0.0000</b>	<b>2.6922</b>	<b>2.6922</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>2.6942</b>

**3.6 Architectural Coating - 2020****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0154					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2700e-003	0.0505	0.0549	9.0000e-005		3.3300e-003	3.3300e-003		3.3300e-003	3.3300e-003	0.0000	7.6598	7.6598	5.9000e-004	0.0000	7.6746
<b>Total</b>	<b>0.0227</b>	<b>0.0505</b>	<b>0.0549</b>	<b>9.0000e-005</b>		<b>3.3300e-003</b>	<b>3.3300e-003</b>		<b>3.3300e-003</b>	<b>3.3300e-003</b>	<b>0.0000</b>	<b>7.6598</b>	<b>7.6598</b>	<b>5.9000e-004</b>	<b>0.0000</b>	<b>7.6746</b>



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**3.6 Architectural Coating - 2020****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.6000e-004	2.6200e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.2000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6461	0.6461	2.0000e-005	0.0000	0.6466
<b>Total</b>	<b>3.8000e-004</b>	<b>2.6000e-004</b>	<b>2.6200e-003</b>	<b>1.0000e-005</b>	<b>7.2000e-004</b>	<b>1.0000e-005</b>	<b>7.2000e-004</b>	<b>1.9000e-004</b>	<b>0.0000</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>0.6461</b>	<b>0.6461</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.6466</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0154					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2700e-003	0.0505	0.0549	9.0000e-005		3.3300e-003	3.3300e-003		3.3300e-003	3.3300e-003	0.0000	7.6598	7.6598	5.9000e-004	0.0000	7.6746
<b>Total</b>	<b>0.0227</b>	<b>0.0505</b>	<b>0.0549</b>	<b>9.0000e-005</b>		<b>3.3300e-003</b>	<b>3.3300e-003</b>		<b>3.3300e-003</b>	<b>3.3300e-003</b>	<b>0.0000</b>	<b>7.6598</b>	<b>7.6598</b>	<b>5.9000e-004</b>	<b>0.0000</b>	<b>7.6746</b>

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**3.6 Architectural Coating - 2020****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.6000e-004	2.6200e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.2000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6461	0.6461	2.0000e-005	0.0000	0.6466
<b>Total</b>	<b>3.8000e-004</b>	<b>2.6000e-004</b>	<b>2.6200e-003</b>	<b>1.0000e-005</b>	<b>7.2000e-004</b>	<b>1.0000e-005</b>	<b>7.2000e-004</b>	<b>1.9000e-004</b>	<b>0.0000</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>0.6461</b>	<b>0.6461</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.6466</b>

**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**

## City of Lemoore Water Treatment Plants Project - San Joaquin Valley Unified APCD Air District, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	7.4000e-004	0.0370	3.6200e-003	5.0000e-005	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005	0.0000	4.3543	4.3543	1.3600e-003	0.0000	4.3882
Unmitigated	7.4000e-004	0.0370	3.6200e-003	5.0000e-005	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005	0.0000	4.3543	4.3543	1.3600e-003	0.0000	4.3882

## 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.73	0.73	0.73		
Parking Lot	1.27	1.27	1.27		
Total	2.00	2.00	2.00		

## 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Parking Lot	9.50	7.30	203.00	0.00	0.00	100.00	0	0	0
Parking Lot	9.50	7.30	203.00	0.00	0.00	100.00	0	0	0

## 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000

## City of Lemoore Water Treatment Plants Project - San Joaquin Valley Unified APCD Air District, Annual

## 5.0 Energy Detail

Historical Energy Use: N

## 5.1 Mitigation Measures Energy

[illegible]

## City of Lemoore Water Treatment Plants Project - San Joaquin Valley Unified APCD Air District, Annual

## 5.2 Energy by Land Use - NaturalGas

### Unmitigated

[illegible]

**Mitigated**

[illegible]

## City of Lemoore Water Treatment Plants Project - San Joaquin Valley Unified APCD Air District, Annual

**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	16450	2.4534	2.2000e-004	4.0000e-005	2.4721
Parking Lot	9450	1.4094	1.2000e-004	3.0000e-005	1.4202
<b>Total</b>		<b>3.8628</b>	<b>3.4000e-004</b>	<b>7.0000e-005</b>	<b>3.8923</b>

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	16450	2.4534	2.2000e-004	4.0000e-005	2.4721
Parking Lot	9450	1.4094	1.2000e-004	3.0000e-005	1.4202
<b>Total</b>		<b>3.8628</b>	<b>3.4000e-004</b>	<b>7.0000e-005</b>	<b>3.8923</b>

**6.0 Area Detail****6.1 Mitigation Measures Area**

## City of Lemoore Water Treatment Plants Project - San Joaquin Valley Unified APCD Air District, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	6.3900e-003	1.0000e-005	6.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3200e-003	1.3200e-003	0.0000	0.0000	1.4100e-003
Unmitigated	6.3900e-003	1.0000e-005	6.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3200e-003	1.3200e-003	0.0000	0.0000	1.4100e-003

## 6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.5400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.7800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.0000e-005	1.0000e-005	6.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3200e-003	1.3200e-003	0.0000	0.0000	1.4100e-003
<b>Total</b>	<b>6.3800e-003</b>	<b>1.0000e-005</b>	<b>6.8000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.3200e-003</b>	<b>1.3200e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.4100e-003</b>

## City of Lemoore Water Treatment Plants Project - San Joaquin Valley Unified APCD Air District, Annual

**6.2 Area by SubCategory****Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.5400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.7800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.0000e-005	1.0000e-005	6.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3200e-003	1.3200e-003	0.0000	0.0000	1.4100e-003
<b>Total</b>	<b>6.3800e-003</b>	<b>1.0000e-005</b>	<b>6.8000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.3200e-003</b>	<b>1.3200e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.4100e-003</b>

**7.0 Water Detail****7.1 Mitigation Measures Water**



## City of Lemoore Water Treatment Plants Project - San Joaquin Valley Unified APCD Air District, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

**7.2 Water by Land Use****Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

## City of Lemoore Water Treatment Plants Project - San Joaquin Valley Unified APCD Air District, Annual

**7.2 Water by Land Use****Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**8.0 Waste Detail**

---

**8.1 Mitigation Measures Waste****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

## City of Lemoore Water Treatment Plants Project - San Joaquin Valley Unified APCD Air District, Annual

**8.2 Waste by Land Use****Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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## City of Lemoore Water Treatment Plants Project - San Joaquin Valley Unified APCD Air District, Annual

**10.0 Stationary Equipment****Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	2	0.01	91.25	50	0.73	Diesel

**Boilers**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

Equipment Type	Number
----------------	--------

**10.1 Stationary Sources****Unmitigated/Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (50 - 75 HP)	7.4900e-003	0.0244	0.0272	4.0000e-005		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003	0.0000	3.4748	3.4748	4.9000e-004	0.0000	3.4870
<b>Total</b>	<b>7.4900e-003</b>	<b>0.0244</b>	<b>0.0272</b>	<b>4.0000e-005</b>		<b>1.1000e-003</b>	<b>1.1000e-003</b>		<b>1.1000e-003</b>	<b>1.1000e-003</b>	<b>0.0000</b>	<b>3.4748</b>	<b>3.4748</b>	<b>4.9000e-004</b>	<b>0.0000</b>	<b>3.4870</b>

**11.0 Vegetation**

## **APPENDIX B**

### **BIOLOGICAL RESOURCES RECORD SEARCH RESULTS**



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## Selected Elements by Scientific Name

### California Department of Fish and Wildlife

### California Natural Diversity Database



**Query Criteria:** Quad</span> IS </span>(Burrel (3611948)</span> OR </span>Riverdale (3611947)</span> OR </span>Laton (3611946)</span> OR </span>Vanguard (3611938)</span> OR </span>Lemoore (3611937)</span> OR </span>Hanford (3611936)</span> OR </span>Westhaven (3611928)</span> OR </span>Stratford (3611927)</span> OR </span>Guernsey (3611926))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Agelaius tricolor</i></b> tricolored blackbird	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
<b><i>Arizona elegans occidentalis</i></b> California glossy snake	ARADB01017	None	None	G5T2	S2	SSC
<b><i>Athene cunicularia</i></b> burrowing owl	ABNSB10010	None	None	G4	S3	SSC
<b><i>Atriplex depressa</i></b> brittlescale	PDCHE042L0	None	None	G2	S2	1B.2
<b><i>Buteo swainsoni</i></b> Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
<b><i>Charadrius alexandrinus nivosus</i></b> western snowy plover	ABNNB03031	Threatened	None	G3T3	S2S3	SSC
<b><i>Cicindela tranquebarica ssp.</i></b> San Joaquin tiger beetle	IICOL0220E	None	None	G5T1	S1	
<b><i>Delphinium recurvatum</i></b> recurved larkspur	PDRAN0B1J0	None	None	G2?	S2?	1B.2
<b><i>Desmocerus californicus dimorphus</i></b> valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S2	
<b><i>Dipodomys nitratoideis exilis</i></b> Fresno kangaroo rat	AMAFD03151	Endangered	Endangered	G3TH	SH	
<b><i>Dipodomys nitratoideis nitratoideis</i></b> Tipton kangaroo rat	AMAFD03152	Endangered	Endangered	G3T1T2	S1S2	
<b><i>Emys marmorata</i></b> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<b><i>Gambelia sila</i></b> blunt-nosed leopard lizard	ARACF07010	Endangered	Endangered	G1	S1	FP
<b><i>Lasiurus cinereus</i></b> hoary bat	AMACC05030	None	None	G5	S4	
<b><i>Lepidium jaredii ssp. album</i></b> Panoche pepper-grass	PDBRA1M0G2	None	None	G2G3T2T3	S2S3	1B.2
<b><i>Nama stenocarpa</i></b> mud nama	PDHYD0A0H0	None	None	G4G5	S1S2	2B.2
<b><i>Nycticorax nycticorax</i></b> black-crowned night heron	ABNGA11010	None	None	G5	S4	
<b><i>Puccinellia simplex</i></b> California alkali grass	PMPOA53110	None	None	G3	S2	1B.2
<b><i>Spea hammondi</i></b> western spadefoot	AAABF02020	None	None	G3	S3	SSC



**Selected Elements by Scientific Name**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Thamnophis gigas</i></b> giant gartersnake	ARADB36150	Threatened	Threatened	G2	S2	
<b><i>Valley Sink Scrub</i></b> Valley Sink Scrub	CTT36210CA	None	None	G1	S1.1	
<b><i>Vulpes macrotis mutica</i></b> San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S2	
<b><i>Xanthocephalus xanthocephalus</i></b> yellow-headed blackbird	ABPBXB3010	None	None	G5	S3	SSC

**Record Count: 23**



\*The database used to provide updates to the Online Inventory is under construction. [View updates and changes made since May 2019 here.](#)

## Plant List

6 matches found. [Click on scientific name for details](#)

### Search Criteria

Found in Quads 3611948, 3611947, 3611946, 3611938, 3611937, 3611936, 3611928 3611927 and 3611926;

[Modify Search Criteria](#) [Export to Excel](#) [Modify Columns](#) [Modify Sort](#) [Display Photos](#)

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
<a href="#">Atriplex depressa</a>	brittlescale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
<a href="#">Delphinium recurvatum</a>	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	1B.2	S2?	G2?
<a href="#">Hordeum intercedens</a>	vernal barley	Poaceae	annual herb	Mar-Jun	3.2	S3S4	G3G4
<a href="#">Lepidium jaredii ssp. album</a>	Panoche pepper-grass	Brassicaceae	annual herb	Feb-Jun	1B.2	S2S3	G2G3T2T3
<a href="#">Nama stenocarpa</a>	mud nama	Namaceae	annual / perennial herb	Jan-Jul	2B.2	S1S2	G4G5
<a href="#">Puccinellia simplex</a>	California alkali grass	Poaceae	annual herb	Mar-May	1B.2	S2	G3

### Suggested Citation

California Native Plant Society, Rare Plant Program. 2019. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website <http://www.rareplants.cnps.org> [accessed 25 July 2019].

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[The California Lichen Society](#)  
[California Natural Diversity Database](#)  
[The Jepson Flora Project](#)  
[The Consortium of California Herbaria](#)  
[CalPhotos](#)

#### Questions and Comments

[rareplants@cnps.org](mailto:rareplants@cnps.org)



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

Phone: (916) 414-6600 Fax: (916) 414-6713



In Reply Refer To:

July 25, 2019

Consultation Code: 08ESMF00-2019-SLI-2590

Event Code: 08ESMF00-2019-E-08238

Project Name: Lemoore Water Treatment Plant

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

### To Whom It May Concern:

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

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

[http://www.nwr.noaa.gov/protected\\_species/species\\_list/species\\_lists.html](http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html)

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

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

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

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

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

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

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

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

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Attachment(s):

- Official Species List

## Official Species List

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

This species list is provided by:

**Sacramento Fish And Wildlife Office**

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

(916) 414-6600

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## Project Summary

Consultation Code: 08ESMF00-2019-SLI-2590

Event Code: 08ESMF00-2019-E-08238

Project Name: Lemoore Water Treatment Plant

Project Type: WATER SUPPLY / DELIVERY

Project Description: LSA Project No. LMR1901

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/36.32152486545996N119.78013600874442W>



Counties: Kings, CA

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## Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## Mammals

NAME	STATUS
<b>Fresno Kangaroo Rat</b> <i>Dipodomys nitratooides exilis</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/5150">https://ecos.fws.gov/ecp/species/5150</a> Species survey guidelines: <a href="https://ecos.fws.gov/ipac/guideline/survey/population/37/office/11420.pdf">https://ecos.fws.gov/ipac/guideline/survey/population/37/office/11420.pdf</a>	Endangered
<b>San Joaquin Kit Fox</b> <i>Vulpes macrotis mutica</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/2873">https://ecos.fws.gov/ecp/species/2873</a>	Endangered
<b>Tipton Kangaroo Rat</b> <i>Dipodomys nitratooides nitratooides</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/7247">https://ecos.fws.gov/ecp/species/7247</a> Species survey guidelines: <a href="https://ecos.fws.gov/ipac/guideline/survey/population/40/office/11420.pdf">https://ecos.fws.gov/ipac/guideline/survey/population/40/office/11420.pdf</a>	Endangered

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## Reptiles

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

## Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/2891">https://ecos.fws.gov/ecp/species/2891</a>	Threatened

## Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/321">https://ecos.fws.gov/ecp/species/321</a>	Threatened

## Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/498">https://ecos.fws.gov/ecp/species/498</a>	Threatened
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/2246">https://ecos.fws.gov/ecp/species/2246</a>	Endangered

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

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**Lemoore Water Treatment Plant - LMR1901**

Scientific Name	Common Name	Family	Invasiveness	Station 7	Station 11	Notes
<i>Amaranthus blitoides</i>	Prostrate amaranth	Amaranthaceae	Native	X	X	
<i>Amaranthus retroflexus</i>	Rough pigweed	Amaranthaceae	Not-rated	X	X	
<i>Atriplex argentea</i>	Silverscale saltbush	Chenopodiaceae	Native	X		Saltbush #2 (white)
<i>Atriplex lentiformis</i>	Big saltbush	Chenopodiaceae	Native	X		Saltbush #3 (bush)
<i>Atriplex serenana</i> var. <i>serenana</i>	Saltscale	Chenopodiaceae	Native	X		Saltbush #1 (green)
<i>Avena barbata</i>	Slender oat	Poaceae	Moderate		X	
<i>Bromus catharticus</i>	Rescue grass	Poaceae	Not-rated		X	
<i>Bromus diandrus</i>	Ripgut brome	Poaceae	Moderate		X	
<i>Centromadia pungens</i>	Common tarweed	Asteraceae	Native	X		
<i>Chenopodium album</i>	Lambs quarters	Chenopodiaceae	Not-rated	X	X	
<i>Cressa truxillensis</i>	Alkali weed	Convolvulaceae	Native	X		
<i>Cynodon dactylon</i>	Bermuda grass	Poaceae	Moderate		X	
<i>Datura wrightii</i>	Jimsonweed	Solanaceae	Native		X	
<i>Echinochloa colona</i>	Jungle rice	Poaceae	Not-rated		X	
<i>Erigeron bonariensis</i>	Flax-leaved horseweed	Asteraceae	Not-rated	X	X	
<i>Erodium</i> sp.	Filaree species	Geraniaceae			X	
<i>Festuca perennis</i>	Italian rye grass	Poaceae	Moderate		X	
<i>Helianthus annuus</i>	Hairy leaved sunflower	Asteraceae	Native	X		
<i>Heliotropium curassavicum</i>	Chinese parsley	Boraginaceae	Native	X		
<i>Heterotheca grandiflora</i>	Telegraph weed	Asteraceae	Native	X		
<i>Hordeum murinum</i>	Foxtail barley	Poaceae	Moderate	X	X	
<i>Lactuca scariola</i>	Prickly lettuce	Asteraceae	Not-rated	X	X	
<i>Malva parviflora</i>	Cheeseweed	Malvaceae	Not-rated		X	
<i>Malvella leprosa</i>	Alkali mallow	Malvaceae	Native	X	X	
<i>Matricaria chamomilla</i>	German chamomile	Asteraceae	Not-rated	X		
<i>Medicago sativa</i>	Alfalfa	Fabaceae	Not-rated		X	
<i>Mellilotus</i> sp.	Sweetclover	Fabaceae	Not-rated		X	
<i>Polygonum aviculare</i>	Prostrate knotweed	Polygonaceae	Not-rated		X	
<i>Polypogon monspeliensis</i>	Rabbitsfoot grass	Poaceae	Limited	X		
<i>Salsola tragus</i>	Russian thistle	Chenopodiaceae		X	X	
<i>Sesuvium verrucosum</i>	Western sea purslane	Aizoaceae	Native	X		
<i>Sisymbrium irio</i>	London rocket	Brassicaceae	Moderate	X		
<i>Solanum americanum</i>	Common nightshade	Solanaceae	Native	X		
<i>Sonchus arvensis</i>	Sow thistle	Asteraceae	Not-rated		X	
<i>Sonchus oleraceus</i>	Common sowthistle	Asteraceae	Not-rated	X		
<i>Sorghum halepense</i>	Johnsongrass	Poaceae	Not-rated		X	
<i>Spergularia bocconi</i>	Boccone's sand spurry	Caryophyllaceae	Not-rated	X		
<i>Suaeda nigra</i>	Bush seepweed	Chenopodiaceae	Native	X		
<i>Trianthema portulacastrum</i>	Desert horsepurslane	Aizoaceae	Native		X	
<i>Tribulus terrestris</i>	Puncture vine	Zygophyllaceae	Limited	X	X	

**Lemoore Water Treatment Plant - LMR1901**

Scientific Name	Common Name	Family	Order	Station 7	Station 11	Notes
<i>Buteo jamaicensis</i>	Red-tailed hawk	Accipitridae	Falconiformes	X		
<i>Cathartes aura</i>	Turkey vulture	Cathartidae	Ciconiiformes	X		
<i>Charadrius vociferus</i>	Killdeer	Charadriidae	Charadriiformes	X	X	
<i>Lepus californicus</i>	Black-tailed jackrabbit	Leporidae	Lagomorpha	X		
<i>Mimus polyglottos</i>	Northern mockingbird	Mimidae	Passeriformes	X		
<i>Streptopelia decaocto</i>	Eurasian collared-dove	Columbidae	Columbiformes	X	X	
<i>Sylvilagus audubonii</i>	Audubon's cottontail	Leporidae	Lagomorpha	X		
<i>Thomomys bottae</i>	Botta's pocket gopher	Geomyidae	Rodentia	X	X	
<i>Tyrannus verticalis</i>	Western kingbird	Tyrannidae	Passeriformes	X		

**Lemoore Water Treatment Plant - LMR1901**

Tree #	Common Name	Scientific Name	DBH (inches)	Notes
T1	Ash species	<i>Fraxinus sp.</i>	53.5	Rot at base, water sprouts
T2	Japanese zelkova	<i>Zelkova serrata</i>	33	Minor trunk sprouts
T3	Ash species	<i>Fraxinus sp.</i>	20	
T4	Japanese zelkova	<i>Zelkova serrata</i>	24	
T5	Chinese pistache	<i>Pistacia chinensis</i>	26	
T6	Japanese zelkova	<i>Zelkova serrata</i>	28.5	Large lower limb removed, some trunk sprouts
T7	Ash species	<i>Fraxinus sp.</i>	42.5	
T8	Chinese pistache	<i>Pistacia chinensis</i>	29	
T9	Japanese zelkova	<i>Zelkova serrata</i>	20.25	Trunk sprouts
T10	Ash species	<i>Fraxinus sp.</i>	38.5	Rot at base, water sprouts
T11	Chinese pistache	<i>Pistacia chinensis</i>	19	