Caruthers Community Services District

Well No. 7

Draft Initial Study/ Mitigated Negative Declaration

March 2019

Prepared for:
Caruthers Community Services District

Prepared by:
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Acronyms and Abbreviations

AB ..... Assembly Bill
AFY ..... Acre Feet per year
AL-20 ..... LimitedAgricultural
APN ..... Assessor's Parcel Number
CAA ..... Clean Air Act
CalEEMod ..... California Emissions Estimator Model
CalEPA ..... California Environmental Protection Agency
Cal/OSHA ..... California Division of Occupational Safety and Health
Caltrans ..... California Department of Transportation
CARB ..... California Air Resources Board
CAAQS ..... California Ambient Air Quality Standards
CCAA ..... California Clean Air Act
CCR ..... California Code of Regulations
CCSD ..... Caruthers Community Services District
CDFW ..... California Department of Fish and Wildlife
CEC ..... California Energy Commission
CEQA ..... California Environmental Quality Act
CFR ..... U.S. Code of Federal Regulations
CGS ..... California Geological Survey
CH_4 ..... Methane
C-M ..... Commercial/ Light Manufacturing
CNDDB ..... California Department of Fish and Wildlife Natural Diversity Database
CNPS ..... California Native Plant Society
CPUC ..... California Public Utilities Commission
CO ..... Carbon Monoxide
CO_2e ..... Carbon Dioxide Equivalent
CUPA ..... Certified Unified Program Agency
CWA ..... Clean Water Act
DDW ..... Division of Drinking Water
District ..... Caruthers Community Services District
DOC ..... California Department of Conservations
DPM ..... Diesel Particulate Matter

DTSC ..... Department of Toxic Substance Control
DWR ..... Department of Water Resources
EDP ..... ethylene dibromide
EIR ..... Environmental Impact Report
EPA ..... U.S. Environmental Protection Agency
FEMA ..... Federal Emergency Management Agency
FIRM ..... Flood Insurance Rate Maps
FMMP ..... Farmland Mapping and Monitoring Program
GC ..... Government Code
GHG ..... Greenhouse Gas
GIS ..... Geographic Information System
IPaC ..... U.S. Fish and Wildlife Service's Information for Planning and Consultation system
IS ..... Initial Study
IS/MND ..... Initial Study/Mitigated Negative Declaration
M-1 ..... Light Industrial
MBTA ..... Migratory Bird Treaty Act
MCL ..... Maximum Contaminant Level
MMRP ..... Mitigation Monitoring & Reporting Program
MMT ..... Million Metric Tons
MND ..... Mitigated Negative Declaration
MRZ ..... Mineral Resource Zones
MT CO_2e ..... Metric Tons of Carbon Dioxide Equivalent
NAAQS ..... National Ambient Air Quality Standards
ND ..... Negative Declaration
NEPA ..... National Environmental Policy Act
NFIP ..... National Flood Insurance Program
NO_2 ..... Nitrogen Dioxide
NOX ..... Nitrogen Oxide
NPDES ..... National Pollutant Discharge Elimination System
NRCS ..... Natural Resources Conservation Service
O_3 ..... Ozone
Pb ..... Lead
PC ..... Production-Consumption
PM_{10} ..... Particulate Matter less than 10 microns in diameter

$PM_{2.5}$ ..... Particulate Matter less than 2.5 microns in diameter
Project ..... Caruthers Community Services District Well No. 7 Project
R-1 ..... Single Family Residential
R-2 ..... Low-Density Multiple Family Residential
RCRA ..... Resource Conservation and Recovery Act
RWQCB ..... Regional Water Quality Control Board
SB ..... Senate Bill
SHC ..... Streets and Highways Code
SIP ..... State Implementation Plan
SJVAB ..... San Joaquin Valley Air Basin
SJVAPCD ..... San Joaquin Valley Air Pollution Control District
SO_2 ..... Sulfur Dioxide
SR ..... State Route
SWRCB ..... State Water Resources Control Board
SWPPP ..... Storm Water Pollution Prevention Plan
TAC ..... Toxic Air Contaminants
TCP 1,2,3-trichloropropane
TPY ..... Tons Per Year
USACE ..... U. S. Army Corps of Engineers
USDA ..... U. S. Department of Agriculture
USFWS ..... U. S. Fish and Wildlife Service
USGS ..... U. S. Geological Survey
WC ..... Water Code

1 Introduction

Provost & Pritchard Consulting Group (Provost & Pritchard) has prepared this Initial Study/Mitigated Negative Declaration (IS/MND) on behalf of Caruthers Community Services District (CCSD or District) to address the environmental effects of the Well No. 7 Project (Project or proposed Project). This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 *et.seq.* The District is the CEQA lead agency for this proposed Project.

The site and the proposed Project are described in detail in the **Project Description, Chapter 2**.

1.1 Regulatory Information

An Initial Study (IS) is a document prepared by a lead agency to determine whether a project may have a significant effect on the environment. In accordance with California Code of Regulations Title 14 (Chapter 3, Section 15000, *et seq.*)-- also known as the CEQA Guidelines-- Section 15064 (a)(1) states that an environmental impact report (EIR) must be prepared if there is substantial evidence in light of the whole record that the proposed Project under review may have a significant effect on the environment and should be further analyzed to determine mitigation measures or project alternatives that might avoid or reduce project impacts to less than significant levels. A negative declaration (ND) may be prepared instead if the lead agency finds that there is ***no*** substantial evidence in light of the whole record that the project may have a significant effect on the environment. An ND is a written statement describing the reasons why a proposed Project, not otherwise exempt from CEQA, would not have a significant effect on the environment and, therefore, why it would not require the preparation of an EIR (CEQA Guidelines Section 15371). According to CEQA Guidelines Section 15070, a ND or *mitigated* ND shall be prepared for a project subject to CEQA when either:

a. The IS shows there is no substantial evidence, in light of the whole record before the agency, that the proposed Project may have a significant effect on the environment, or

b. The IS identified potentially significant effects, but:

    1. Revisions in the project plans or proposals made by or agreed to by the applicant before the proposed MND and IS is released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur is prepared, and

    2. There is no substantial evidence, in light of the whole record before the agency, that the proposed Project *as revised* may have a significant effect on the environment.

1.2 Document Format

This IS/MND contains four chapters and four appendices. **Chapter 1, Introduction**, provides an overview of the proposed Project and the CEQA process. **Chapter 2, Project Description**, provides a detailed description of proposed Project components and objectives. **Chapter 3, Impact Analysis**, presents the CEQA checklist and environmental analysis for all impact areas, mandatory findings of significance, and feasible mitigation measures. If the proposed Project does not have the potential to significantly impact a given issue area, the relevant section provides a brief discussion of the reasons why no impacts are expected. If the proposed Project could have a potentially significant impact on a resource, the issue area discussion provides a description of potential impacts, and appropriate mitigation measures and/or permit requirements that would reduce those impacts to a less than significant level. **Chapter 4, Mitigation Monitoring and**

Reporting Program (MMRP), provides the proposed mitigation measures, implementation timelines, and the entity/agency responsible for ensuring implementation.

The CalEEMod Output Files, Biological Evaluation Report, Cultural Resources Information, and NRCS Soil Resource Report are provided as technical **Appendix A**, **Appendix B**, **Appendix C** and **Appendix D**, respectively, at the end of this document.

The analyses of environmental impacts in **Chapter 3** are separated into the following categories:

Potentially Significant Impact. This category is applicable if there is substantial evidence that an effect may be significant, and no feasible mitigation measures can be identified to reduce impacts to a less than significant level. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

Less than Significant with Mitigation Incorporated. This category applies where the incorporation of mitigation measures would reduce an effect from a "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measure(s), and briefly explain how they would reduce the effect to a less than significant level (mitigation measures from earlier analyses may be cross-referenced).

Less Than Significant Impact. This category is identified when the proposed Project would result in impacts below the threshold of significance, and no mitigation measures are required.

No Impact. This category applies when a project would not create an impact in the specific environmental issue area. "No Impact" answers do not require a detailed explanation if they are adequately supported by the information sources cited by the lead agency, which show that the impact does not apply to the specific project (e.g. the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g. the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2 Project Description

2.1 Project Background and Objectives

2.1.1 Project Title

Caruthers Community Services District: Well No. 7

2.1.2 Lead Agency Name and Address

Caruthers Community Services District
PO Box 218
Caruthers, CA 93609

2.1.3 Contact Person and Phone Number

Lead Agency Contact
Caruthers Community Services District
PO Box 218
Caruthers, CA 93609

CEQA Consultant
Provost & Pritchard Consulting Group
Dawn E. Marple, Environmental Project Manager
(559) 636-1166

2.1.4 Project Location

The Project is located in southern Fresno County, central California, approximately 168 miles southeast of Sacramento and 94 miles northwest of Bakersfield (see **Figure 2-1** and **Figure 2-2**). The proposed site of Well No. 7 is located approximately 2.3 miles west of State Route 41 and more specifically, on the western corner of Henderson Road and South West Avenue on Assessor's Parcel Numbers 043-041-47S and 043-041-46S. The proposed placement of Well No. 7 and both potential pipeline alignments are shown in Figure 2-3.

2.1.5 Latitude and Longitude

The centroid of the Project area, including both potential pipeline alignments, is 36.539, -119.829

2.1.6 General Plan Designation

Table 2-1. Fresno County General Plan Designation

Project Area	General Plan Designation
Well No. 7 Site	Public Facilities- Elementary School
Potential Pipeline Alignment No. 2	Public Facilities- Elementary School
Potential Pipeline Alignment No. 1	N/A: Public Right-Of-Way

2.1.7 Zoning

Table 2-2. Fresno County Zone District

Project Area	Zone District
Well No. 7 Site	Limited Agricultural (AL-20)
Potential Pipeline Alignment No. 2	Limited Agricultural (AL-20)
Potential Pipeline Alignment No. 1	N/A: Public Right-Of-Way

2.1.8 Description of Project

2.1.8.1 Project Background and Purpose

The Caruthers Community Services District (CCSD or District) was formed in 1960 and is responsible for providing both water and sewer service to the unincorporated community of Caruthers in southern Fresno County. The District's jurisdiction spans approximately 361 acres and includes a domestic water system presently serving approximately 721 residential, 33 commercial/industrial connections and 4 landscape irrigation connections throughout the community.

Due to groundwater overdraft and contamination from agricultural chemicals, provision of reliable sources of groundwater in both quantity and quality have been a challenge throughout the Central Valley.

The District currently has two active wells (Well No. 5 and Well No. 6) and one standby well (Well No. 3). Wells No. 5 and No. 6 have arsenic levels that exceed the maximum contaminant level (MCL). Well No. 3 is currently on standby due to ethylene dibromide (EDB) and 1,2,3-trichloropropane (TCP) levels above the MCL. The District is finalizing plans to construct a treatment facility at the site of Well No. 6 and will be able to provide consolidated arsenic treatment for both Wells No. 5 and No. 6 due to a recently developed pipeline which connects them.

The proposed Project will include a new water supply well (Well No. 7), and a transmission main from Well No. 7 to the Well No. 6 site for the purposes of blending or treatment. Implementation of the Project would correct water quality issues historically experienced by the community of Caruthers by creating a long-term and reliable source of safe drinking water.

2.1.8.2 Project Description

The Caruthers Community Services District Well No. 7 Project includes drilling and construction of a new well (Well No. 7), an approximately 0.2 acre storm drainage basin, hydropneumatic tank, and other associated infrastructure on the vacant lot on the western corner of Henderson Road and South West Avenue in the community of Caruthers, California. A transmission pipeline will be installed from Well No. 7 to an existing buried pipeline, connecting existing Wells No. 5 to the existing Well No. 6 site.

The Project proposes two potential pipeline alignments. Although the Project will only utilize one of the two potential pipeline alignments, both alternatives will be analyzed for potential environmental impacts. Potential Pipeline Alignment No. 1 includes a pipeline from Well No. 7 that travels northwest along Henderson Road with a connection to existing infrastructure at the intersection of Henderson Road and West Superior Avenue. Alternatively, Potential Pipeline Alignment No. 2 commences at Well No. 7 and travels northwest along the perimeter of a vacant ruderal lot, to the rear of residential units on Henderson Road. This alignment includes a connection to existing infrastructure northeast of Well No. 5, to the rear of residential units on Sandy Road. The proposed placement of Well No. 7 and both potential pipeline alignments are shown in Figure 2-3.

In addition to the construction of the new well and pipeline, a 10,000-gallon hydropneumatic tank will be constructed at the site of Well No. 7 to maintain a constant pressure, which will prevent overuse of the pump and minimize surges in the transmission line. An approximately 0.2 acre storm drainage basin will be constructed at the site to capture onsite storm drainage. The site will be fenced with chain link, approximately 6-feet in height and adorned with strands of barbed wire.

2.1.8.3 Construction

Construction of the Project is anticipated to be completed within nine months, which will include grading, site preparation, drilling and installation of a new well, construction of a hydropneumatic tank and associated infrastructure, connection to the existing distribution system, and development of a stormwater drainage basin. Construction equipment will likely include a drilling rig, excavators, backhoes, graders, skid steers, loaders, and hauling trucks.

Generally, construction will occur between the hours of 7am and 5pm, Monday through Friday, excluding holidays. Post-construction activities will include system testing, commissioning, and site clean-up. Construction will require temporary staging and storage of materials and equipment. Staging areas will be located onsite.

Although construction is not expected to generate hazardous waste, field equipment used during construction has the potential to contain various hazardous materials such as diesel fuel, hydraulic oil, grease, solvents, adhesives, paints, and other petroleum-based products.

2.1.8.4 Operation and Maintenance

Operation and maintenance of Well No. 7 will continue to be performed by Caruthers Community Services District's existing maintenance staff.

2.1.9 Surrounding Land Uses and Setting

The Project area is surrounded by agricultural lands, ruderal vacant lots, and residential, commercial, and industrial development. Directly west of the well site is a ruderal vacant lot. There is a small frontage road further west, and beyond that is an elementary school. To the east, beyond South West Avenue, are rural farmhouses and vineyards. Residential development is present to the north, and a Sikh Temple is present to the south, across West Clemenceau Avenue.

The Well No. 7 site and Potential Pipeline Alignment No. 2 are located within vacant land zoned AL-20, Limited Agricultural, by Fresno County. The Caruthers Community Plan of the Fresno County General Plan Land Use Map designates this area as Public Facilities reserved for expansion of the adjacent Caruthers Elementary School campus. Potential Pipeline Alignment No. 1 would be located along a collector street, Henderson Road and placed within the associated public right-of-way. Henderson Road lies adjacent to parcels zoned R-1, Single Family Residential, R-2, Low-Density Multiple Family Residential, M-1, Light Industrial, and C-M, Commercial/ Light Manufacturing. The Caruthers Community Plan Land Use Map designates the planned land uses of these properties adjacent to Henderson Road as Medium Density Residential, Low Density Residential, Limited Industrial, and Central Business Commercial. See **Figure 2-4** and **Figure 2-5** for the zoning and general plan designations, respectively.

2.1.10 Other Public Agencies Whose Approval May Be Required

- County of Fresno – Encroachment Permit and/or Building Permit
- State Water Resources Control Board, Division of Drinking Water (DDW) – Water Supply Permit
- State Water Resources Control Board – NPDES Construction General Permit

- San Joaquin Valley Air Pollution Control District – rules and regulations (Regulation VIII, Rule 9510; Regulation IV, Rule 4702)
- California Public Utilities Commission – approval for utility upgrades (not anticipated to be necessary)
- Fresno County Fire Department
- Fresno County Department of Public Health, Environmental Health Division- Well Construction Permit

2.1.11 Consultation with California Native American Tribes

Assembly Bill 52 (AB 52; codified at Public Resources Code Section 21080.3.1, *et seq.*) requires that a lead agency, within 14 days of determining that it will undertake a project, must notify in writing any California Native American Tribe traditionally and culturally affiliated with the geographic area of the project if that Tribe has previously requested notification about projects in that geographic area. The notice must briefly describe the project and inquire whether the Tribe wishes to initiate request formal consultation. Tribes have 30 days from receipt of notification to request formal consultation. The lead agency then has 30 days to initiate the consultation, which then continues until the parties come to an agreement regarding necessary mitigation or agree that no mitigation is needed, or one or both parties determine that negotiation occurred in good faith, but no agreement will be made.

Caruthers Community Services District has not received any written correspondence from a Tribe pursuant to Public Resources Code Section 21080.3.1 requesting notification of proposed projects. All Tribal correspondence is discussed in further detail in sections 3.5 and 3.18 of Chapter 3.

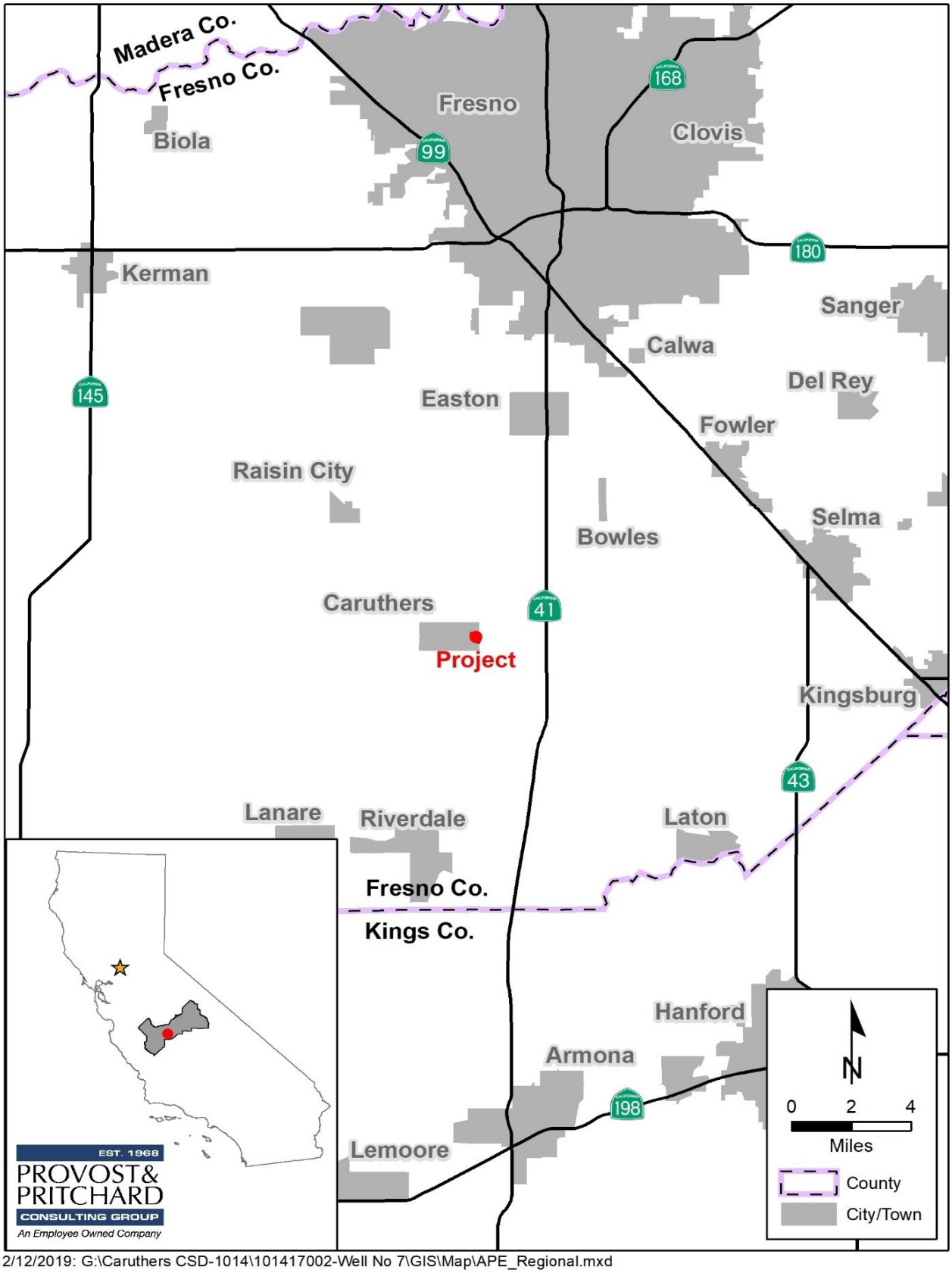

Figure 2-1. Regional Location

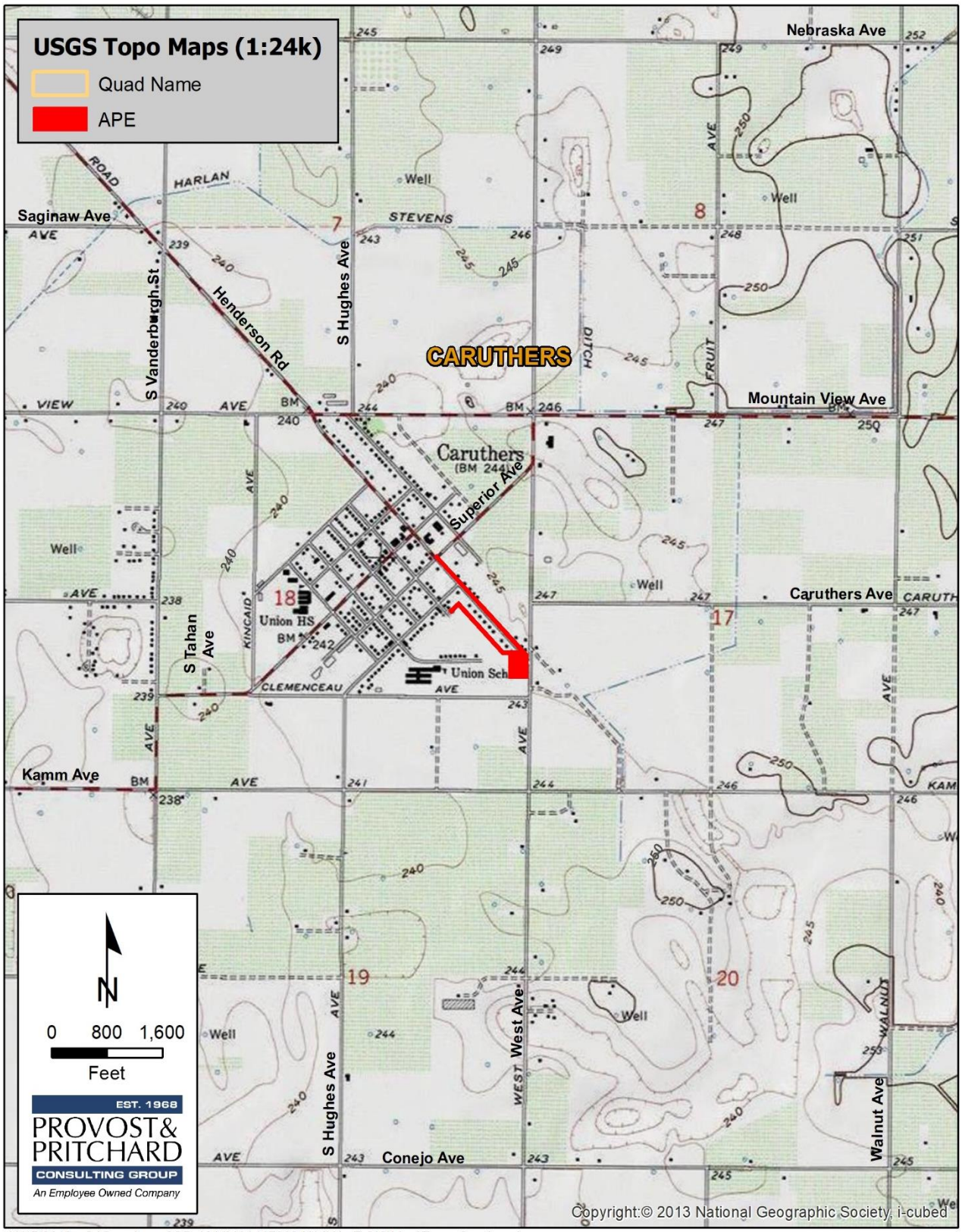

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Figure 2-2. Topographic Quadrangle Map

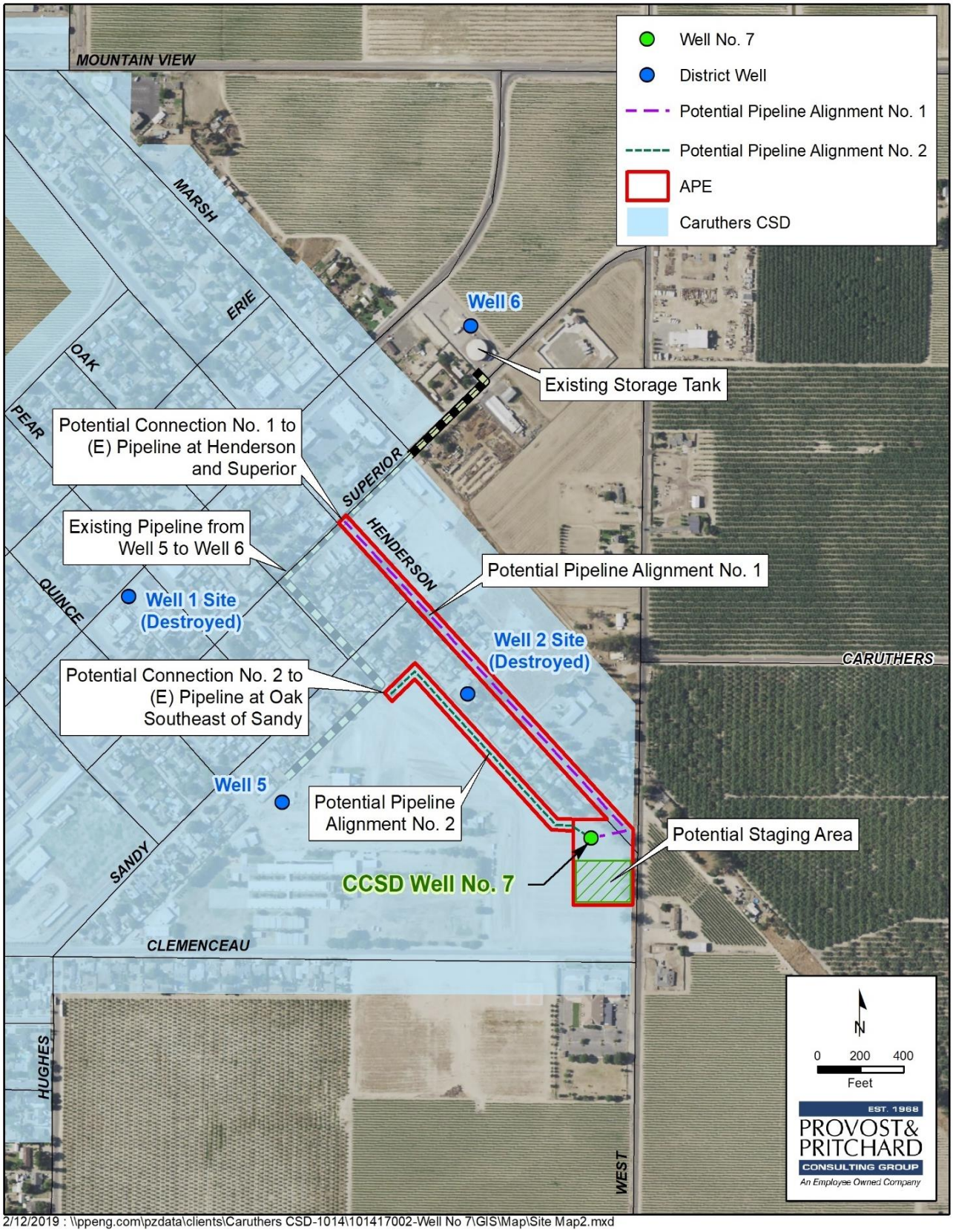

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Figure 2-3. Site Plan

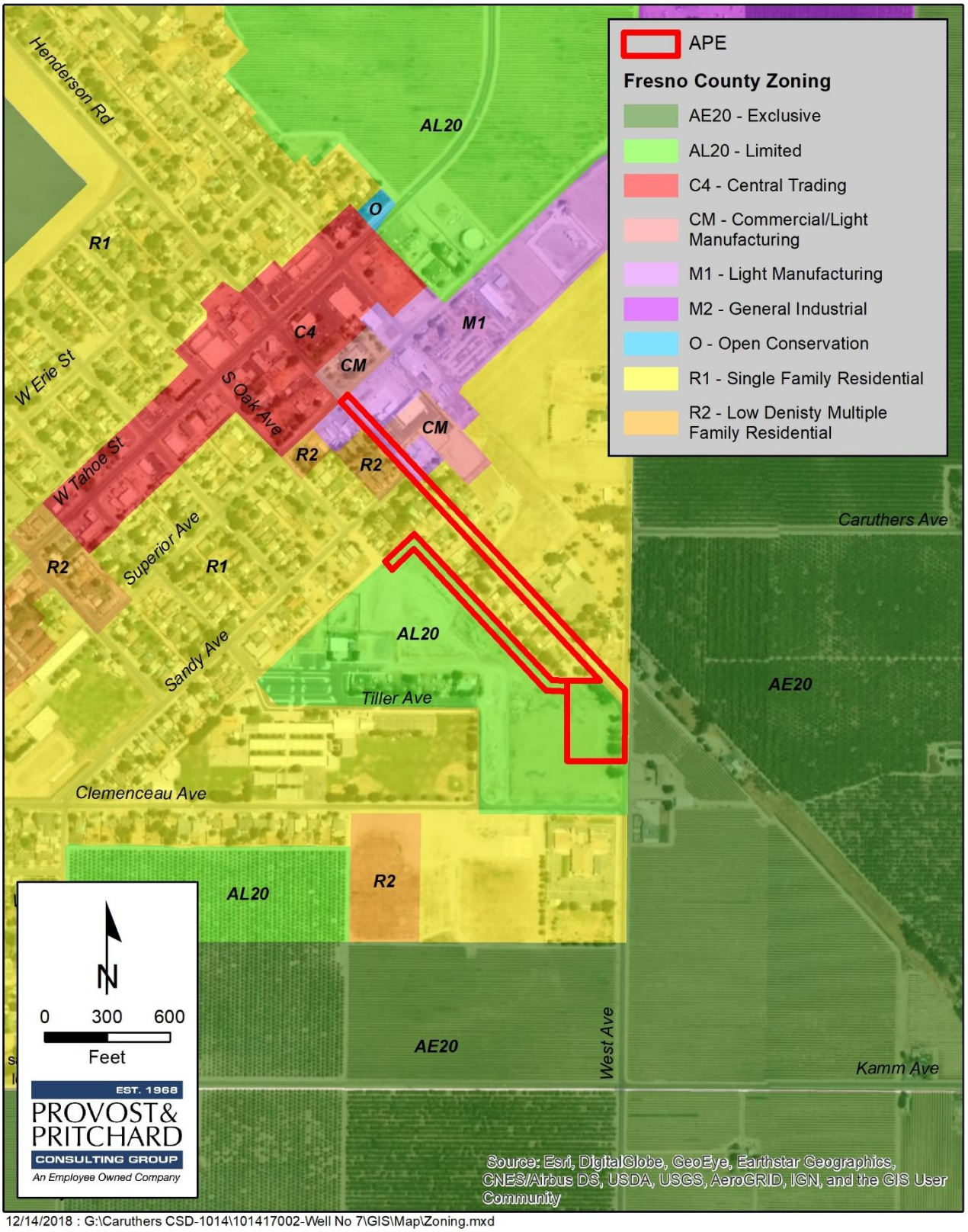

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Figure 2-4. Fresno County Zone District Map.

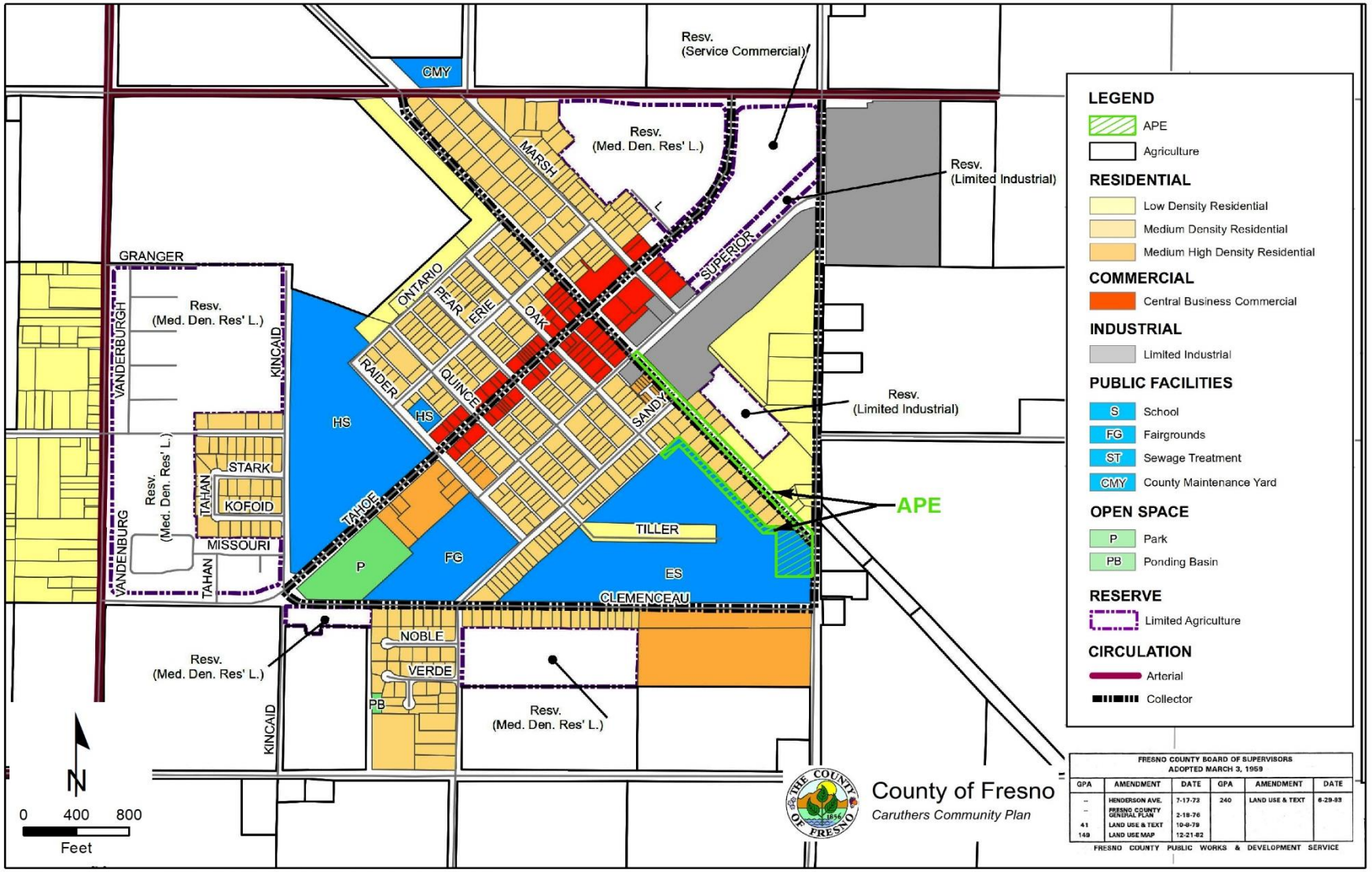

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Figure 2-5. General Plan Land Use Designation Map

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, as indicated by the checklist and subsequent discussion on the following pages.

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

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

David L. M

Signature

2-27-19

Date

David L. McIntyre / Manager

Printed Name/Position

3 Impact Analysis

3.1 Aesthetics

Table 3-1. Aesthetics Impacts

Aesthetics				
Except as provided in Public Resources Code Section 21099, would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) 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 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?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

3.1.1 Environmental Setting

The proposed Project is located in the southern part of Fresno County in the Central San Joaquin Valley. Lands in the vicinity consist of relatively flat irrigated farmland and the rural residential community of Caruthers. Agricultural practices in the vicinity consist of row crop, field crop, and orchard cultivation in the form of vineyards and almonds. In Fresno County, a portion of State Route 180 (SR 180) has been officially identified by Caltrans as a "designated State Scenic Highway;" however, that segment is approximately 28 miles northeast of the site. Caruthers is located approximately 40 miles east of the foothills of the Coast Range and approximately 30 miles west of the foothills of the Sierra Nevada. Neither of these foothills or mountain ranges are typically visible from the vantage point of the Project site, even on a clear day. Rural roadways, local water distribution canals, water retention basins, and other infrastructure typical of rural agricultural areas in the San Joaquin Valley are also in the immediate vicinity. The proposed Project is consistent with the aesthetics of the area.

3.1.2 Regulatory Setting

3.1.2.1 Federal

There are no federal regulations, plans, programs, or guidelines associated with aesthetics that are applicable to the proposed Project.

3.1.2.2 State

Scenic Highway Program: California's Scenic Highway Program was created by the Legislature in 1963. Its purpose is to preserve and protect scenic highway corridors from change which would diminish the aesthetic

value of lands adjacent to highways. The State laws governing the Scenic Highway Program are found in the Streets and Highway Code (SHC) Section 260, *et seq*. A highway may be officially designated "scenic" depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been so designated. These highways are identified in SHC Section 263. A list of California's scenic highways and map showing their locations may be obtained from Caltrans' Scenic Highway Coordinators.[1]

3.1.2.3 Local

Fresno County General Plan[2]: The Fresno County General Plan sets forth the following goals and policies that protect the aesthetic character of the County and which have potential relevance to the Project's CEQA review:

Goal OS-K: To conserve, protect, and maintain the scenic quality of Fresno County and discourage development that degrades areas of scenic quality.

Policy HS-E.2: The County shall ensure that new development, including public infrastructure projects, does not create safety hazards such as glare from direct or reflective sources.

3.1.3 Impact Assessment

I-a) Have a substantial adverse effect on a scenic vista?

a) Less Than Significant Impact. Scenic features in the vicinity may include irrigation canals or the vast expanse of agricultural uses. The Project site is not within the viewshed of any water features or scenic vistas. Furthermore, the Project site does not stand out from its surroundings in any remarkable fashion. Impacts would be less than significant.

I-b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

b) No Impact. In Fresno County, a portion of State Route 180 (SR 180) has been officially identified by Caltrans as a "designated State Scenic Highway." However, Project activities would occur approximately 28 miles southwest and do not have the potential to affect the highway. There would be no impact.

I-c) Would the project, 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 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?

c) Less Than Significant Impact. The Project site is surrounded by agricultural and rural infrastructure such as row crops, orchards, irrigation standpipes, wells, and ponding basins. The new well and infrastructure will blend in well with existing uses and the Project will not substantially degrade the visual character of the area. Potential Pipeline Alignment No. 1 is adjacent to single-family dwellings along Henderson Road. Potential Pipeline Alignment No. 2 is along the perimeter of a vacant lot to the rear of the same residences that front on Henderson Road. Both pipeline alternatives would be buried and not visible from the homes or

[1] Streets and Highways Code. https://leginfo.legislature.ca.gov/faces/codes_displayexpandedbranch.xhtml?tocCode=SHC&division=1.&title=&part=&chapter=&article= Accessed 22 October 2018.

[2] Fresno County General Plan. https://www.co.fresno.ca.us/departments/public-works-planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/general-plan-maps Accessed 22 October 2018.

passing vehicles. Additionally, the Project does not conflict with the zoning on or adjacent to the Project components. Impacts would be less than significant.

I-d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

d) Less Than Significant Impact. The Project area is primarily surrounded by agriculture and other rural uses. Lighting will be utilized at the site of Well No. 7 during non-daylight hours to ensure safety of the public and the public water system; however, lighting will be directed downward and hooded to minimize light and glare on adjacent properties and roadways. Additional vehicular traffic after construction will be limited to maintenance and monitoring on an as-needed basis which will be performed during daylight hours, except in an unforeseen emergency situation. Therefore, the Project will not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area or be inconsistent with existing conditions.

3.2 Agriculture and Forestry Resources

Table 3-2. Agriculture and Forestry Resources Impacts

Agriculture and Forest Resources				
Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
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?	☐	☐	☐	☒

3.2.1 Environmental Setting

The Project is located in the California's Central San Joaquin Valley in Fresno County and more specifically within the unincorporated community of Caruthers. Fresno County is located within California's agricultural heartland. For crop year 2016-2017, Fresno County ranked third for the top agricultural counties in the State in the annual market value of farm products.[3]

A wide range of commodities are grown in the county, with major production of milk, poultry, livestock, and other animal commodities, row crops, nuts and fruit tree crops, and vegetables. Rich soil, irrigation water, Mediterranean climate and steady access to local, national and global markets make this possible.

3.2.2 Regulatory Setting

3.2.2.1 Federal

There are no federal regulations, plans, programs, or guidelines associated with agriculture and forestry resources that are applicable to the proposed Project.

[3] USDA. California County Agricultural Commissioners' Reports 2016-2017. https://www.nass.usda.gov/Statistics_by_State/California/Publications/AgComm/2017/2017cropyearcactb00.pdf Accessed 24 October 2018.

3.2.2.2 State

Farmland Conservancy Program: The Department of Conservation's (DOC) Farmland Conservancy Program (FCP) seeks to encourage the long-term, private stewardship of agricultural lands through the voluntary use of agricultural conservation easements. The FCP provides grant funding for easements and planning projects that support statewide agricultural land conservation.

Farmland Mapping and Monitoring Program (FMMP): The FMMP produces maps and statistical data used for analyzing impacts to California's agricultural resources. Agricultural land is rated according to soil quality and irrigation status; the best quality land is called Prime Farmland. The maps are updated every two years with the use of a computer mapping system, aerial imagery, public review, and field reconnaissance.
The California DOC's 2012 FMMP is a non-regulatory program that produces "Important Farmland" maps and statistical data used for analyzing impacts on California's agricultural resources. The Important Farmland maps identify eight land use categories, five of which are agriculture related: prime farmland, farmland of statewide importance, unique farmland, farmland of local importance, and grazing land – rated according to soil quality and irrigation status. Each is summarized below[4]:

• PRIME FARMLAND (P): Farmland with the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

• FARMLAND OF STATEWIDE IMPORTANCE (S): Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture.

Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

• UNIQUE FARMLAND (U): Farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include non- irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.

• FARMLAND OF LOCAL IMPORTANCE (L): Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.

• GRAZING LAND (G): Land on which the existing vegetation is suited to the grazing of livestock. The minimum mapping unit for Grazing Land is 40 acres.

• URBAN AND BUILT-UP LAND (D): Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, institutional, public administrative purposes, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

• OTHER LAND (X): Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than 40

[4] California Department of Conservation. FMMP – Report and Statistics. http://www.conservation.ca.gov/dlrp/fmmp/products/Pages/ReportsStatistics.aspx. Accessed 24 October 2018.

acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

•WATER (W): Perennial water bodies with an extent of at least 40 acres.

As demonstrated in **Figure 3-1**, the FMMP for Fresno County designates the site of Well No. 7 and Potential Pipeline Alignment No. 2 as Farmland of Local Importance and Urban and Built-Up Land while Potential Pipeline Alignment No. 1 is comprised entirely of Urban and Built-Up Land.

3.2.2.3 Local

Fresno County General Plan[5]: The Fresno County General Plan sets forth the following policies relating to agriculture and which have potential relevance to the Project's CEQA review:

Policy LU-A.1: The County shall maintain agriculturally-designated areas for agriculture use and shall direct urban growth away from valuable agricultural lands to cities, unincorporated communities, and other areas planned for such development where public facilities and infrastructure are available.

Policy LU-A.13: The County shall protect agricultural operations from conflicts with non-agricultural uses by requiring buffers between proposed non-agricultural uses and adjacent agricultural operations.

Policy LU-A.20: The County shall adopt and support policies and programs that seek to protect and enhance surface water and groundwater resources critical to agriculture.

Policy PF-C.11: The County shall assure an on-going water supply to help sustain agriculture and accommodate future growth by allocation of resources necessary to carry out the water resource management programs.

3.2.3 Impact Assessment

II-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?

a) No Impact. As demonstrated in **Figure 3-1**, the FMMP for Fresno County designates the site of Well No. 7 and Potential Pipeline Alignment No. 2 as Farmland of Local Importance and Urban and Built-Up Land while Potential Pipeline Alignment No. 1 is comprised entirely of Urban and Built-Up Land. Prime Farmland, Unique Farmland, and Farmland of Statewide Importance are present in the vicinity but will not be impacted either directly or indirectly by the Project. Although the site of Well No. 7 is comprised partially of Farmland of Local Importance, this land is not currently being used for agricultural use. The parcel is vacant and has been designated by the Caruthers Community Plan as Public Facilities, reserved for the expansion of the adjacent elementary school. Implementation of the Project will not result in the conversion of farmland to a non-agricultural use. There will be no impact.

II-b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

b) No Impact. Although the site of Well No. 7 and Potential Pipeline Alignment No. 2 is zoned AL-20, Limited Agricultural, the Project area has not been used for agricultural production since the development of the adjacent Caruthers Elementary School. According to the Caruthers Community Plan, which underwent its most recent amendment in 1993, the parcel containing the site of Well No. 7 and Potential Pipeline Alignment No. 2 has been designated for the expansion of Caruthers Elementary School. The nearest parcel

[5] Fresno County General Plan. https://www.co.fresno.ca.us/departments/public-works-planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/general-plan-maps Accessed 22 October 2018.

covered under a Williamson Act contract is located approximately 210 feet east of the Project. The Project involves development of a water supply well and associated infrastructure on a vacant lot. Implementation of the Project will not result in a conflict with existing zoning for agricultural use, nor will it conflict with Williamson Act contracts of agricultural uses in the vicinity. There will be no impact.

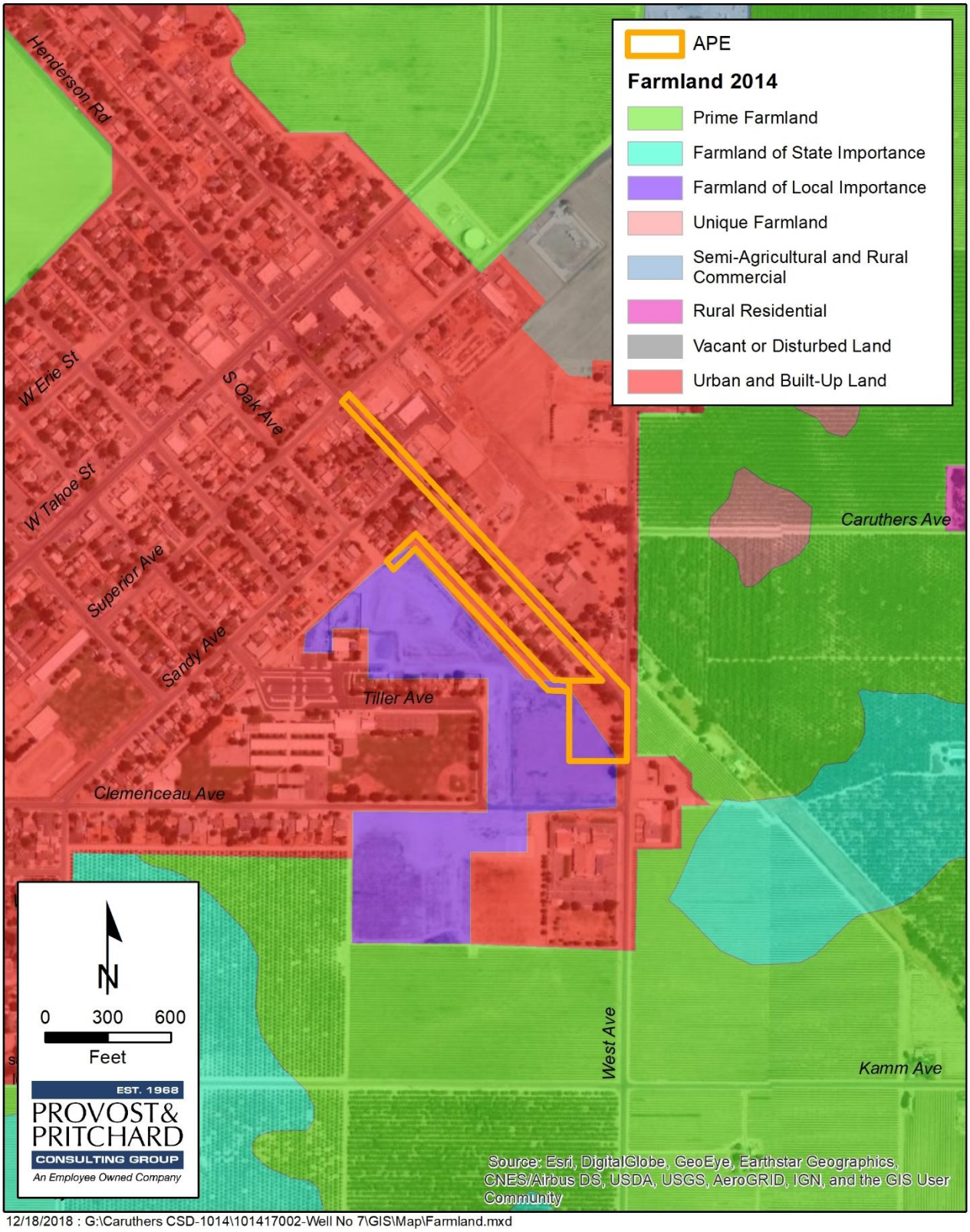
II-c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

II-d) Result in the loss of forest land or conversion of forest land to non-forest use?

c and d) No Impact. There are no forest lands or timberlands within the Project site or vicinity. There will be no impact.

II-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?

e) No Impact. As discussed above in Impact Assessments II a-d, the Project involves the development of a new water supply well and associated infrastructure on a vacant lot. The proposed water supply system improvements will not result in land use conversion of farmland or forest land, either directly or indirectly. There will be no impact.



12/18/2018 : G:\Caruthers CSD-1014\101417002-Well No 7\GIS\Map\Farmland.mxd

Figure 3-1. Farmland Designation Map

3.3 Air Quality

Table 3-3. Air Quality Impacts

Air Quality					
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:		Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
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?	☐	☐	☒	☐
c)	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d)	Result in other emissions (such as those leading to odors adversely affecting a substantial number of people)?	☐	☐	☒	☐

3.3.1 Environmental Setting

The proposed Project lies within the eight-county San Joaquin Valley Air Basin (SJVAB), which is managed by the San Joaquin Valley Air Pollution Control District (SJVAPCD). Air quality in the SJVAB is influenced by a variety of factors, including topography, local and regional meteorology. National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) have been established for the following criteria pollutants: carbon monoxide (CO), ozone (O_3), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), particulate matter (PM_{10} and $PM_{2.5}$), and lead (Pb). The CAAQS also set standards for sulfates (SO_4), hydrogen sulfide (H_2S), vinyl chloride (C_2H_3Cl) and visibility.

Air quality plans or attainment plans are used to bring the applicable air basin into attainment with all State and Federal ambient air quality standards designed to protect the health and safety of residents within that air basin. Areas are classified under the Federal Clean Air Act as either "attainment", "nonattainment", or "extreme nonattainment" areas for each criteria pollutant based on whether the NAAQS have been achieved or not. Attainment relative to the State standards is determined by the California Air Resources Board (CARB). The San Joaquin Valley is designated as a State and Federal nonattainment area for O_3, a State and Federal nonattainment area for $PM_{2.5}$, a State nonattainment area for PM_{10}, a Federal and State attainment area for CO, SO_2, and NO_2, and a State attainment area for sulfates, vinyl chloride and Pb[6].

3.3.2 Methodology

An Air Quality and Greenhouse Gas Emissions Evaluation Report (**Appendix A**) was prepared using CalEEmod, Version 2016.3.2 for the proposed Project in November 2018. The sections below detail the methodology of the air quality and greenhouse gas emissions report and its conclusions.

[6] San Joaquin Valley Air Pollution Control District. Ambient Air Quality Standards and Valley Attainment Status. http://www.valleyair.org/aqinfo/attainment.htm.

3.3.2.1 Short-Term Construction-Generated Emissions

Short-term construction emissions associated with the Project were calculated using CalEEmod, Version 2016.3.2. The emissions modeling includes emissions generated by off-road equipment, haul trucks, and worker commute trips. Emissions were quantified based on anticipated construction schedules and construction equipment requirements provided by the Project applicant. All remaining assumptions were based on the default parameters contained in the model. Localized air quality impacts associated with the Project would be minor and were qualitatively assessed. Modeling assumptions and output files are included in **Appendix A**.

3.3.2.2 Long-Term Operational Emissions

Long-term operational emissions associated with the Project are estimated to be minimal in nature. Maintenance will be provided on an as needed basis by existing staff, and the operational equipment, such as the use of stationary electric pumps, will be similar to the existing system which results in negligible emissions. The Project does propose the use of a diesel-powered back-up generator. Generator use was estimated as 100 hours per year and specifications were based on the existing Well No. 6 equipment which includes a 335-horsepower generator. Modeling assumptions and output files are included in **Appendix A**.

3.3.2.3 Thresholds of Significance

To assist local jurisdictions in the evaluation of air quality impacts, the SJVAPCD has published the *Guide for Assessing and Mitigating Air Quality Impacts*. This guidance document includes recommended thresholds of significance to be used for the evaluation of short-term construction, long-term operational, odor, toxic air contaminant, and cumulative air quality impacts. Accordingly, the SJVAPCD-recommended thresholds of significance are used to determine whether implementation of the proposed Project would result in a significant air quality impact. Projects that exceed these recommended thresholds would be considered to have a potentially significant impact to human health and welfare. The thresholds of significance are summarized, as follows:

Short-Term Emissions of Particulate Matter (PM_{10}): Construction impacts associated with the proposed Project would be considered significant if the feasible control measures for construction in compliance with Regulation VIII as listed in the SJVAPCD guidelines are not incorporated or implemented, or if project-generated emissions would exceed 15 tons per year (TPY).

Short-Term Emissions of Ozone Precursors (ROG and NOx): Construction impacts associated with the proposed Project would be considered significant if the project generates emissions of Reactive Organic Gases (ROG) or NO_X that exceeds 10 TPY.

Long-Term Emissions of Particulate Matter (PM10): Operational impacts associated with the proposed Project would be considered significant if the project generates emissions of PM_{10} that exceed 15 TPY.

Long-Term Emissions of Ozone Precursors (ROG and NOx): Operational impacts associated with the proposed Project would be considered significant if the project generates emissions of ROG or NO_X that exceeds 10 TPY.

Conflict with or Obstruct Implementation of Applicable Air Quality Plan: Due to the region's nonattainment status for ozone, $PM_{2.5}$, and PM_{10}, if the project-generated emissions of either of the ozone precursor pollutants (i.e., ROG and NO_x) or PM_{10} would exceed the SJVAPCD's significance thresholds, then the project would be considered to conflict with the attainment plans. In addition, if the project would result in a change in land use and corresponding increases in vehicle miles traveled, the project may result in an increase in vehicle miles traveled that is unaccounted for in regional emissions inventories contained in regional air quality control plans.

Local Mobile-Source CO Concentrations: Local mobile source impacts associated with the proposed Project would be considered significant if the project contributes to CO concentrations at receptor locations in excess of the CAAQS (i.e. 9.0 ppm for 8 hours or 20 ppm for 1 hour).

Exposure to toxic air contaminants (TAC) would be considered significant if the probability of contracting cancer for the Maximally Exposed Individual (i.e., maximum individual risk) would exceed 10 in 1 million or would result in a Hazard Index greater than 1.

Odor impacts associated with the proposed Project would be considered significant if the project has the potential to frequently expose members of the public to objectionable odors.

3.3.3 Regulatory Setting

3.3.3.1 Federal

U.S. Environmental Protection Agency: At the Federal level, the EPA has been charged with implementing national air quality programs. The EPA's air quality mandates are drawn primarily from the Clean Air Act (CAA), which was signed into law in 1970. Congress substantially amended the CAA in 1977 and again in 1990.

Federal Clean Air Act: The CAA required the EPA to establish National Ambient Air Quality Standards (NAAQS), and also set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility restrictions.

The CAA also required each State to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The CAA Amendments of 1990 added requirements for States with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. The EPA has responsibility to review all State SIPs to determine conformance with the mandates of the CAA, and the amendments thereof, and determine if implementation will achieve air quality goals. If the EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area that imposes additional control measures.

Toxic Substances Control Act: The Toxic Substances Control Act (TSCA) first authorized the EPA to regulate asbestos in schools and Public and Commercial buildings under Title II of the law, which is also known as the Asbestos Hazard Emergency Response Act (AHERA). AHERA requires Local Education Agencies (LEAs) to inspect their schools for ACBM and prepare management plans to reduce the asbestos hazard. The Act also established a program for the training and accreditation of individuals performing certain types of asbestos work.

National Emission Standards for Hazardous Air Pollutants: Pursuant to the CAA of 1970, the EPA established the National Emission Standards for Hazardous Air Pollutants (NESHAP). These are technology-based source-specific regulations that limit allowable emissions of hazardous air pollutants.

3.3.3.2 State

California Air Resources Board: The CARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing the California Clean Air Act of 1988. Other CARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control districts and air quality management districts, establishing California Ambient Air Quality Standards (CAAQS), which in many cases are more stringent than the NAAQS, and

setting emissions standards for new motor vehicles. The emission standards established for motor vehicles differ depending on various factors including the model year, and the type of vehicle, fuel and engine used.

California Clean Air Act: The CCAA requires that all air districts in the State endeavor to achieve and maintain CAAQS for ozone, CO, SO_2, and NO_2 by the earliest practical date. The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. Each district plan is required to either (1) achieve a five percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each nonattainment pollutant or its precursors, or (2) to provide for implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both State and Federal planning requirements.

Table 3-4. Summary of Ambient Air Quality Standards and Attainment Designation

Summary of Ambient Air Quality Standards & Attainment Designation					
Pollutant	Averaging Time	California Standards*		National Standards*	
		Concentration*	Attainment Status	Primary	Attainment Status
Ozone (O_3)	1-hour	0.09 ppm	Nonattainment/ Severe	–	No Federal Standard
	8-hour	0.070 ppm	Nonattainment	0.075 ppm	Nonattainment (Extreme)**
Particulate Matter (PM_{10})	AAM	20 µg/m^3	Nonattainment	–	Attainment
	24-hour	50 µg/m^3		150 µg/m^3	
Fine Particulate Matter ($PM_{2.5}$)	AAM	12 µg/m^3	Nonattainment	12 µg/m^3	Nonattainment
	24-hour	No Standard		35 µg/m^3	
Carbon Monoxide (CO)	1-hour	20 ppm	Attainment/ Unclassified	35 ppm	Attainment/ Unclassified
	8-hour	9 ppm		9 ppm	
	8-hour (Lake Tahoe)	6 ppm		–	
Nitrogen Dioxide (NO_2)	AAM	0.030 ppm	Attainment	53 ppb	Attainment/ Unclassified
	1-hour	0.18 ppm		100 ppb	
Sulfur Dioxide (SO_2)	AAM	–	Attainment	--	Attainment/ Unclassified
	24-hour	0.04 ppm		--	
	3-hour	–		0.5 ppm	
	1-hour	0.25 ppm		75 ppb	
Lead (Pb)	30-day Average	1.5 µg/m^3	Attainment	–	No Designation/ Classification
	Calendar Quarter	–		--	
	Rolling 3-Month Average	–		0.15 µg/m^3	
Sulfates (SO_4)	24-hour	25 µg/m^3	Attainment	No Federal Standards	
Hydrogen Sulfide (H_2S)	1-hour	0.03 ppm (42 µg/m^3)	Unclassified		
Vinyl Chloride (C_2H_3Cl)	24-hour	0.01 ppm (26 µg/m^3)	Attainment		
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient: 0.23/km-visibility of 10 miles or more due to particles when the relative humidity is less than 70%.	Unclassified		

** For more information on standards visit: http//www.arb.ca.gov.research/aaqs/aaqs2.pdf*
*** No Federal 1-hour standard. Reclassified extreme nonattainment for the Federal 8-hour standard May 5, 2010.*
****Secondary Standard*
Source: CARB 2015; SJVAPCD 2015

California Assembly Bill 170: Assembly Bill 170, Reyes (AB 170), was adopted by State lawmakers in 2003 creating Government Code Section 65302.1 which requires cities and counties in the San Joaquin Valley to amend their general plans to include data and analysis, comprehensive goals, policies and feasible implementation strategies designed to improve air quality.

Assembly Bills 1807 & 2588 - Toxic Air Contaminants: Within California, TACs are regulated primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics Hot Spots Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB designates a substance as a TAC. Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

3.3.3.3 Local

Fresno County General Plan[7]: The Fresno County General Plan sets forth the following goals and policies regarding air quality and which have potential relevance to the Project's CEQA review:

Goal OS-G: To improve air quality and minimize the adverse effects of air pollution in Fresno County.

Policy OS-G.2: The County shall ensure that air quality impacts identified during the CEQA review process are fairly and consistently mitigated. The County shall require projects to comply with the County's adopted air quality impact assessment and mitigation procedures.

Policy OS-G.4: The County shall consult with the [SJVAPCD] during CEQA review for projects that require air quality impact analysis and ensure that the [SJVAPCD] is on the distribution list for all CEQA documents.

Policy OS-G.13: The County shall include fugitive dust control measures as a requirement for subdivision maps, site plans, and grading permits. This will assist in implementing the [SJVAPCD]'s particulate matter of less than ten (10) microns (PM_{10}) regulation (Regulation VIII). Enforcement actions can be coordinated with the Air District's Compliance Division.

San Joaquin Valley Air Pollution Control District: The SJVAPCD is the agency primarily responsible for ensuring that NAAQS and CAAQS are not exceeded and that air quality conditions are maintained in the SJVAB, within which the proposed Project is located. Responsibilities of the SJVAPCD include, but are not limited to, preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, issuing permits for stationary sources of air pollution, inspecting stationary sources of air pollution and responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing programs and regulations required by the CAA and the CCAA.

The SJVAPCD Rules and Regulations that are applicable to the proposed Project include, but are not limited to, the following:

Regulation VIII (Fugitive Dust Prohibitions), Regulation VIII (Rules 8011-8081): This regulation is a series of rules designed to reduce particulate emissions generated by human activity, including construction and demolition activities, carryout and trackout, paved and unpaved roads, bulk material handling and storage, unpaved vehicle/traffic areas, open space areas, etc. If a non-residential area is 5.0 or more acres in area, a

[7] Fresno County General Plan. https://www.co.fresno.ca.us/departments/public-works-planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/general-plan-maps Accessed 22 October 2018.

Dust Control Plan must be submitted as specified in Section 6.3.1 of Rule 8021. Additional requirements may apply, depending on total area of disturbance.

Regulation IV (Prohibitions), Rule 4702 (Internal Combustion Engines): This rule requires a permit from SJVAPCD for the operation of stationary internal combustion engines rated at least 25 brake horsepower. Pursuant to this rule, spark-ignited engines and compressed-ignited engines must meet the applicable requirements and emission limits specified in 40 CFR 60 Subpart III (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines) and 40 CFR 60 Subpart JJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines).

San Joaquin Valley Air Pollution Control District Thresholds of Significance. Projects that produce emissions that exceed the following thresholds shall be considered significant for a project level and/or cumulatively considerable impact to air quality. The following thresholds are defined for purposes of determining cumulative effects as the baseline for "considerable". Projects located within the SJVAPCD will be subject to the significance thresholds identified in section 3.3.2.3 above.

3.3.3.4 Regulatory Attainment Designations

Under the CCAA, the CARB is required to designate areas of the State as attainment, nonattainment, or unclassified with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data does not support either an attainment or nonattainment designation. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The EPA designates areas for ozone, CO, and NO_2 as "does not meet the primary standards," "cannot be classified," or "better than national standards." For SO_2, areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, the CARB terminology of attainment, nonattainment, and unclassified is more frequently used. The EPA uses the same sub-categories for nonattainment status: serious, severe, and extreme. In 1991, EPA assigned new nonattainment designations to areas that had previously been classified as Group I, II, or III for PM_{10} based on the likelihood that they would violate national PM_{10} standards. All other areas are designated "unclassified."

The State and national attainment status designations pertaining to the SJVAB are summarized in **Table 3-4**. The SJVAB is currently designated as a nonattainment area with respect to the State PM_{10} standard, ozone, and $PM_{2.5}$ standards. The SJVAB is designated nonattainment for the NAAQS 8-hour ozone and $PM_{2.5}$ standards. On September 25, 2008, the EPA re-designated the San Joaquin Valley to attainment status for the PM_{10} NAAQS and approved the PM_{10} Maintenance Plan.

3.3.4 Impact Assessment

III-a) Conflict with or obstruct implementation of the applicable air quality plan?

a) No Impact. As noted in Impact Assessments III-b and III-c below, implementation of the Project would not result in short-term or long-term increases in emissions that would exceed applicable thresholds of significance. Projects that do not exceed the recommended thresholds would not be considered to conflict with or obstruct the implementation of applicable air quality plans.

III-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?

b) Less Than Significant Impact.

Short-Term Construction-Generated Emissions

Construction-generated emissions are temporary in duration, lasting approximately nine months for site preparation, construction of the new well, hydropneumatic tank, storm drainage basin, and all associated infrastructure. The construction of the Project would result in the temporary generation of emissions associated with site grading and excavation, motor vehicle exhaust associated with construction equipment and worker trips, as well as the movement of construction equipment on unpaved surfaces.

Estimated construction-generated emissions and operational emissions are summarized in **Table 3-5** and **Table 3-6**, respectively.

Table 3-5. Unmitigated Short-Term Construction-Generated Emissions of Criteria Air Pollutants

Short-Term Construction-Generated Emissions of Criteria Air Pollutants					
	Annual Emissions (Tons/Year) (1)				
Source	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
2020	0.1458	1.4151	0.9247	0.2409	0.1563
2021	0.0055	0.0506	0.0549	0.0003	0.0023
Maximum Annual Proposed Project Emissions:	0.1458	1.4151	0.9247	0.2409	0.1563
SJVAPCD Significance Thresholds:	*10*	*10*	*100*	*15*	*15*
Exceed SJVAPCD Thresholds?	*No*	*No*	*No*	*No*	*No*

1. *Emissions were quantified using CalEEmod Output Files Version 2016.3.2. Refer to Appendix A for modeling results and assumptions. Totals may not sum due to rounding.*

Table 3-6. Unmitigated Long-Term Operational Emissions

Long-Term Operational Emissions of Criteria Air Pollutants					
	Annual Emissions (Tons/Year) (1)				
Source	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Maximum Annual Project Emissions:	0.0275	0.0768	0.0701	0.0001	0.0001
SJVAPCD Significance Thresholds:	*10*	*10*	*100*	*15*	*15*
Exceed SJVAPCD Thresholds?	*No*	*No*	*No*	*No*	*No*

1. *Emissions were quantified using CalEEmod Output Files Version 2016.3.2. Refer to Appendix A for modeling results and assumptions. Totals may not sum due to rounding.*

It is important to note that the proposed Project would be required to comply with SJVAPCD Regulation VIII (Fugitive PM_{10} Prohibitions). Mandatory compliance with SJVAPCD Regulation VIII would further reduce emissions of fugitive dust from the Project site, and adequately minimize the proposed Project's potential to adversely affect nearby sensitive receptors to localized PM impacts.

Given that project-generated emissions would not exceed applicable SJVAPCD significance thresholds and the proposed Project would be required to comply with SJVAPCD Regulation VIII, construction-generated emissions of criteria pollutants would be considered less than significant.

Long-Term Operational Emissions

Long-term operational emissions associated with the proposed Project will be minimal. Maintenance will continue to be provided on an as needed basis and the operational equipment, such as the use of stationary electric pumps, will be similar to the existing system which results in negligible emissions. Therefore, Project-related impacts to air quality would be considered less than significant.

III-c) Expose sensitive receptors to substantial pollutant concentrations?

c) Less Than Significant Impact.

Toxic Air Contaminants

Implementation of the Project would not result in the long-term operation of any major onsite stationary sources of TACs, nor would Project implementation result in a substantial increase in vehicle trips along area roadways, in comparison to existing conditions. As mentioned above in Impact Assessment III-b, the Project's proposed diesel-powered back-up generator would be reserved for emergency situations and would likely operate less than 100 hours per year. However, construction of the Project may result in temporary increases in emissions of diesel-exhaust particulate matter (DPM) associated with the use of off-road diesel equipment. More than 90% of DPM is less than one μm in diameter, and thus is a subset of $PM_{2.5}$.[8] Health-related risks associated with diesel-exhaust emissions are primarily associated with long-term exposure and associated risk of contracting cancer. As such, the calculation of cancer risk associated with exposure of to TACs are typically calculated based on a long-term (e.g., 70-year) period of exposure. The use of diesel-powered construction equipment, however, would be temporary and episodic. Construction activities would occur over an approximate nine-month period, which would constitute less than 1 percent of the typical 70-year exposure period. As a result, exposure to construction-generated DPM would not be anticipated to exceed applicable thresholds (i.e. incremental increase in cancer risk of 10 in one million).

Although the Project is located in close proximity to an operational elementary school, construction of the Project is not anticipated to result in a substantial increase in DPM or other TACs. As indicated in **Table 3-5**, construction of the Project would generate maximum unmitigated annual emissions of approximately 0.1563 tons/year of $PM_{2.5}$, which includes DPM. Operation of the diesel-powered back-up generator at a frequency of 100 hours per year would generate maximum unmitigated annual emissions of approximately 0.0001 tons/year of $PM_{2.5}$, as illustrated in **Table 3-6**. Project-related impacts to sensitive receptors would be less than significant.

Naturally Occurring Asbestos

Naturally-occurring asbestos, which was identified by CARB as a TAC in 1986, is located in many parts of California and is commonly associated with ultramafic rock. The Project site is not located near any areas that are likely to contain ultramafic rock[9]. As a result, risk of exposure to asbestos during the construction process would be considered less than significant.

Fugitive Dust

Construction of the Project would include ground-disturbing activities which could result in increased emissions of airborne particulate matter. The Project would be required to comply with SJVAPCD

[8] CARB. Inhalable Particulate Matter. https://www.arb.ca.gov/research/aaqs/common-pollutants/pm/pm.htm Accessed 30 November 2018.
[9] Van Gosen, B.S. and J.P. Clinkenbeard. 2011. Report Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California – California Geological Survey map Sheet 59. United States Geological Survey.

Regulation VIII (Fugitive PM_{10} Prohibitions). Mandatory compliance with SJVAPCD Regulation VIII would reduce emissions of fugitive dust from the Project site.

Although the Project is located within close proximity to an operational elementary school, construction of the Project is not anticipated to result in a substantial increase in particulate matter. As indicated in **Table 3-5** and **Table 3-6**, respectively, construction of the Project would generate maximum unmitigated annual emissions of approximately 0.2409 tons/year of PM_{10}, while operation of the Project would generate maximum unmitigated annual emissions of approximately 0.0001 tons/year of PM_{10}, both of which are substantially less than SJVAPCD's threshold of significance of 15 tons/year. Project-related impacts to sensitive receptors would be less than significant.

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

d) Less Than Significant Impact. Implementation of the Project would not result in long-term emissions of odors. However, construction would involve the use of a variety of gasoline- or diesel-powered equipment that would emit exhaust fumes. Similarly, infrequent use of the diesel-powered emergency back-up generator may occasionally produce an odorous exhaust. Exhaust fumes, particularly diesel exhaust, may be considered objectionable by some people. The Project is located within an area dominated by agricultural production, which includes the use of diesel-powered equipment and various odorous chemicals on a regular basis. Construction activities would be short-term in nature, as would infrequent use of the emergency generator. Conditions created by Project-related activities would not vary substantially from the baseline conditions routinely experienced onsite and in the vicinity. Impacts would be less than significant.

3.4 Biological Resources

Table 3-7. Biological Resources Impacts

Biological Resources				
Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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 Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
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?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

3.4.1 Environmental Setting

The Project site is located within the lower San Joaquin Valley, part of the Great Valley of California. The Valley is bordered by the Sierra Nevada Mountain Ranges to the east, the Coast Ranges to the west, the Klamath Mountains and Cascade Range to the north, and the Transverse Ranges and Mojave Desert to the south.

Like most of California, the San Joaquin Valley experiences a Mediterranean climate. Warm, dry summers are followed by cool, moist winters. Summer temperatures often reach above 90 degrees Fahrenheit, and the humidity is generally low. Winter temperatures are often below 60 degrees Fahrenheit during the day and rarely exceed 70 degrees. On average, the Central Valley receives approximately 12 inches of precipitation in the form of rainfall yearly, most of which occurs between October and March.

According to the U.S. Geological Survey (USGS) classification system, the Project is located within the Tulare-Buena Vista Lakes watershed; Hydrologic Unit Code (HUC): 18030012.[10] This watershed is broadly defined as "the drainage into the Tulare and Buena Vista Lake closed basins.[11]"

The Project lies entirely within the Kings Groundwater Subbasin of the San Joaquin Valley Groundwater Basin.[12] The principal drainage in the vicinity of the Project is the channelized irrigation canal, Harlan Stevens Ditch, which flows approximately 0.7 mile north-northeast of the site through surrounding agricultural lands. There are no tributaries, or distributaries located within the site boundaries or adjacent to the site.

The Project area is surrounded by agricultural lands, ruderal vacant lots, and residential, commercial, and industrial development. Potential Pipeline Alignment No. 2 consists of ruderal vacant land along the rear property line of single-family residences. Roads along Potential Pipeline Alignment No. 1 are paved and include sidewalk and gutter. In contrast, road shoulders are ruderal, unpaved, and consist of compacted dirt near the site of Well No. 7 at Henderson Road and South West Avenue. Directly west of the well site is ruderal land that appears to have been subject to recent ground disturbing activities. There is a small frontage road further west, and beyond that is an elementary school. To the east, beyond South West Avenue, are rural farmhouses and vineyards. Residential development is present to the north, and a Sikh Temple is present to the south, across West Clemenceau Avenue.

3.4.2 Methodology

A reconnaissance-level field survey of the Project site and surrounding area was conducted on October 16, 2018 by Provost & Pritchard biologist, Brooke Fletcher. Mrs. Fletcher returned to the Project site on November 19, 2018 and performed a field survey of Potential Pipeline Alignment No. 2. The surveys consisted of walking through the Project area while identifying and noting land uses, biological habitats and communities, and plant and animal species encountered. Furthermore, the site and surrounding areas were assessed for suitable habitats of various wildlife species.

Mrs. Fletcher conducted an analysis of potential Project-related impacts to biological resources based on the resources known to exist or with potential to exist within the Project site and surrounding areas. The subsequent Biological Evaluation report, in its entirety, is available as **Appendix B** at the end of this document. Sources of information used in preparation of this analysis included: the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB); the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) system; the Online Inventory of Rare and Endangered Vascular Plants of California (CNPS); CalFlora's online database of California native plants; the Jepson Herbarium online database (Jepson eFlora); U.S. Fish and Wildlife Service (USFWS) Environmental Conservation Online System (ECOS); the NatureServe Explorer online database; the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Plants Database; the California Department of Fish and Wildlife (CDFW) California Wildlife Habitat Relationships (CWHR) database; the California Herps online database; and various manuals, reports, and references related to plants and animals of the San Joaquin Valley region.

A thorough search of the CNDDB for published accounts of special status plant and animal species was conducted for the *Caruthers* 7.5-minute quadrangle that contains the Project site in its entirety, and for the 8 surrounding quadrangles: *Malaga, Burrel, Conejo, Kearney Park, Riverdale, Raisin, Fresno South,* and *Laton*. An official species list was obtained using the USFWS IPaC system for federally listed species with potential to be affected by the Project. These species, and their potential to occur within the Project area are listed in **Table 3-8** and **Table 3-9**.

[10] USGS Watershed Maps. https://water.usgs.gov/maps.html Accessed 12 October 2018.
[11] Ibid.
[12] DWR Bulletin 118 Groundwater Basin Boundary Assessment Tool. https://gis.water.ca.gov/app/bbat/ Accessed 12 October 2018.

Table 3-8. List of Special Status Animals with Potential to Occur Onsite and/or in the Vicinity

Species	Status	Habitat	Occurrence on Project Site
western spadefoot (*Spea hammondii*)	CSC	Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Vernal pools or temporary wetlands, lasting a minimum of three weeks, which do not contain bullfrogs, fish, or crayfish are necessary for breeding.	**Absent.** The highly disturbed habitats of the Project area and surrounding lands are unsuitable for this species. Furthermore, the Project area and surrounding lands do not contain water features or riparian vegetation which are required for suitable breeding habitat. The nearest known occurrence of this species was recorded approximately 12 miles southeast of the Project area in 1998.
California tiger salamander (*Ambystoma californiense*)	FT, CT, CWL	Requires vernal pools or seasonal ponds for breeding and small mammal burrows for aestivation. Generally found in grassland and oak savannah plant communities in central California from sea level to 1500 feet in elevation.	**Absent.** The highly disturbed habitats of the Project area and surrounding lands are unsuitable for this species. Furthermore, the Project area and surrounding lands do not contain water features or riparian vegetation which are required for suitable breeding habitat. The nearest known occurrence of this species was recorded approximately 15 miles northeast of the Project area in 1936. The status of this observation has since been updated to "extirpated," which means the habitat has been destroyed or the species has been searched for but unobserved for many years.
western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	FT, CE	Suitable nesting habitat in California includes dense riparian willow-cottonwood and mesquite habitats along a perennial river. Once a common breeding species in riparian habitats of lowland California, this species currently breeds consistently in only two locations in the State: along the Sacramento and South Fork Kern Rivers.	**Absent.** Suitable nesting habitat for this species is absent from the Project area and surrounding lands. The nearest known occurrence of this species was recorded approximately 12 miles east of the Project area in 1898. The status of this observation has since been updated to "possibly extirpated," which means evidence of habitat destruction or extirpation has been received by the CNDDB.
Swainson's hawk (*Buteo swainsoni*)	CT	Nests in large trees in open areas adjacent to grasslands, grain or alfalfa fields, or livestock pastures suitable for supporting rodent populations.	**Possible.** Swainson's hawks are not uncommon in this portion of the Central Valley. Only a small area of marginal foraging habitat occurs within the Project area and surrounding lands in the form of irrigated vineyard and ruderal parcels. However, no rodents or sign were observed during the biological survey. The Project area's only trees are blue gum eucalyptus along the roadside and ornamental trees associated with landscaping of adjacent properties. The constant disturbance and presence of humans would likely discourage nesting in the few trees large enough to support a raptor nest in the vicinity.
burrowing owl (*Athene cunicularia*)	CSC	Resides in open, dry annual or perennial grasslands, deserts, and scrublands with lowgrowing vegetation. Nestsunderground in existing burrows created by burrowing mammals, most often ground squirrels.	**Absent.** Suitable habitat for this species is absent from the Project area and surrounding lands. The ruderal parcels present within the vicinity of the Project are not large enough to support a breeding pair of burrowing owls, nor do these fields provide suitable foraging ground as they are highly disturbed and frequently experience vehicular traffic. Furthermore, no ground squirrel individuals or burrows were observed during the biological survey. The nearest known

Species	Status	Habitat	Occurrence on Project Site
			occurrence of this species was recorded approximately 7.5 miles south of the Project area in 2006.
tricolored blackbird (*Agelaius tricolor*)	CCE, CSC	Nests colonially near fresh water in dense cattails or tules, or in thickets of riparian shrubs. Forages in grassland and cropland. Large colonies are often found on dairy farm forage fields.	**Unlikely.** Suitable nesting habitat is absent from the Project area and surrounding lands. Foraging habitat is marginal, at best. The nearest known occurrence of this species was recorded approximately 6.5 miles southwest of the Project area in 2000.
valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	Lives in mature elderberry shrubs of the Central Valley and foothills. Adults are active March to June.	**Absent.** Suitable habitat required by this species is absent from the Project area and surrounding lands. No Elderberry plants were observed within the Project's boundaries.
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, CT	Underground dens with multiple entrances in alkali sink, valley grassland, and woodland in valleys and adjacent foothills.	**Unlikely.** The highly disturbed habitats of the Project area and fragmentation of the surrounding lands are unsuitable for this species. The nearest known occurrence of this species was recorded approximately 5.5 miles southeast of the Project area in 1993. The other three local observations were recorded in 1975 during a San Joaquin Kit Fox study. The Project is located approximately 50 miles east of the nearest known core population in Ciervo-Panoche Natural Area. Although some populations of San Joaquin Kit Fox in other parts of California have adapted to an urbanized environment, modern kit fox occurrences are locally scarce. At most, this species could conceivably pass through the Project area during dispersal movements.
western mastiff bat (*Eumops perotis californicus*)	CSC	Found in open, arid to semi-arid habitats, including dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas, where it feeds on insects in flight. Roosts most commonly in crevices in cliff faces, but may also use high buildings and tunnels.	**Unlikely.** Breeding habitat is absent from the Project area and surrounding lands. Foraging habitat of the ruderal fields is marginal, at best. The nearest known occurrence of this species was recorded approximately 7.5 miles northeast of the Project area in 1958.
Fresno kangaroo rat (*Dipodomys nitratoides exilis*)	FE, CE	An inhabitant of alkali sink open grassland environments in western Fresno County. Prefers bare, alkaline, clay-based soils subject to seasonal inundation with more friable soil mounds around shrubs and grasses.	**Absent.** The highly disturbed habitats of the Project area and surrounding lands are unsuitable for this species. The nearest known occurrence of this species was recorded approximately 7.5 miles northwest of the Project area in 1974. The status of this observation has since been updated to "extirpated," which means the habitat has been destroyed or the species has been searched for but unobserved for many years.
Tipton kangaroo rat *(Dipodomys nitratoides nitratoides*)	FE, CE	Burrows in soil. Often found in grassland and shrubland.	**Absent.** The Project area does not provide suitable habitat for this species and is outside of its current known range.
pallid bat (*Antrozous pallidus*)	CSC	Found in grasslands, chaparral, and woodlands, where it feeds on ground- and vegetation-dwelling arthropods, and occasionally takes insects in flight. Prefers to roost in rock crevices, but may also use tree cavities, caves, bridges, and other man-made structures.	**Unlikely.** Individuals could potentially roost in trees or crevices of buildings adjacent to the Project area. The ruderal parcels and adjacent vineyards may provide marginal foraging habitat. The nearest known occurrence of this species was recorded approximately 15 miles north of the Project area in 1909.

Species	Status	Habitat	Occurrence on Project Site
northern California legless lizard (*Anniella pulchra*)	CSC	Found primarily underground, burrowing in loose, sandy soil. Forages in loose soil and leaf litter during the day. Occasionally observed on the surface at dusk and night.	**Unlikely.** The highly disturbed habitats of the Project area are unsuitable for this species. The nearest known occurrence of this species was recorded approximately 15 miles north of the Project area over 100 years ago.
coast horned lizard (*Phrynosoma blainvillii*)	CSC	Found in grasslands, coniferous forests, woodlands, and chaparral, primarily in open areas with patches of loose, sandy soil and low-lying vegetation in valleys, foothills, and semi-arid mountains. Frequently found near ant hills and along dirt roads in lowlands along sandy washes with scattered shrubs.	**Unlikely.** The highly disturbed habitats of the Project area are unsuitable for this species. The nearest known occurrence of this species was recorded approximately 15 miles north of the Project area over 100 years ago.
giant gartersnake (*Thamnophis gigas*)	FT, CT	Occurs in marshes, sloughs, drainage canals, irrigation ditches, rice fields, and adjacent uplands. Prefers locations with emergent vegetation for cover and open areas for basking. This species uses small mammal burrows adjacent to aquatic habitats for hibernation in the winter and to escape from excessive heat in the summer.	**Absent.** Habitats required by this species are absent from the Project area and surrounding lands. The nearest known occurrence of this species was recorded approximately 9 miles southwest of the project area in 1992. This observation corresponds to the Lanare-Burrel population, which is thought to be extirpated due to habitat loss.
California red-legged frog (*Rana draytonii*)	FT	Inhabits perennial rivers, creeks, and stock ponds with vegetative cover within the Coast Range and northern Sierra foothills.	**Absent.** The Project area does not provide suitable habitat for this species and is outside of its current known range.
blunt-nosed leopard lizard (*Gambelia sila*)	FE, CE, CFP	Inhabits semi-arid grasslands, alkali flats, low foothills, canyon floors, large washes, and arroyos, usually on sandy, gravelly, or loamy substrate, sometimes on hardpan. Often found where there are abundant rodent burrows in dense vegetation or tall grass. Cannot survive on lands under cultivation. Known to bask on kangaroo rat mounds and often seeks shelter at the base of shrubs, in small mammal burrows, or in rock piles. Adults may excavate shallow burrows, but rely on deeper pre-existing rodent burrows for hibernation and reproduction.	**Absent.** Suitable habitat for this species is absent from the Project area and surrounding lands. The nearest known occurrence of this species was recorded approximately 30 miles northwest of the Project area in 1976.
vernal pool tadpole shrimp (*Lepidurus packardi*)	FE	Occurs in vernal pools, clear to tea-colored water, in grass or mud-bottomed swales, and basalt depression pools.	**Absent.** Suitable vernal pool habitat for this species is absent from the Project area and surrounding lands.
vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Occupies vernal pools, clear to tea-colored water, in grass or mud-bottomed swales, and basalt depression pools.	**Absent.** Suitable vernal pool habitat for this species is absent from the Project area and surrounding lands.

Table 3-9. List of Special Status Plants with Potential to Occur Onsite and/or in the Vicinity

Species	Status	Habitat	Occurrence on Project Site
California alkali grass (*Puccinellia simplex*)	CNPS 1B	Found in the San Joaquin Valley and other parts of California in saline flats and mineral springs within valley grassland and wetland-riparian communities at elevations below 3000 feet. Blooms March – May.	**Absent.** Suitable habitat required by this species is absent from the Project area and surrounding lands. The nearest known occurrence of this species was recorded approximately 7.5 miles south of the Project area in 1935. The status of this observation has since been updated to "possibly extirpated," which means evidence of habitat destruction or extirpation has been received by the CNDDB.
California jewelflower (*Caulanthus californicus*)	FE, CE, CNPS 1B	Found in the San Joaquin Valley and Western Traverse Ranges. Occurs on flats and slopes, generally in non-alkaline grassland at elevations between 230 feet and 3280 feet. Blooms February – April.	**Absent.** Suitable habitat required by this species is absent from the Project area and surrounding lands. The nearest known occurrence of this species was recorded approximately 15 miles north of the Project area in 1986. The status of this observation has since been updated to "extirpated," which means the habitat has been destroyed or the species has been searched for but unobserved for many years.
lesser saltscale (*Atriplex minuscula*)	CNPS 1B	Found in the San Joaquin Valley in playas; sandy, alkaline soils in shadescale scrub, valley grassland, and alkali sink communities at elevations below 300 feet. Blooms April – October.	**Absent.** Suitable habitat required by this species is absent from the Project area and surrounding lands. The nearest known occurrence of this species was recorded approximately 5 miles northwest of the Project area in 1937.
brittlescale (*Atriplex depressa*)	CNPS 1B	Found in the San Joaquin Valley and Sacramento Valley in alkali or clay soils in shadescale scrub, valley grassland, alkali sink, and riparian communities at elevations below 1050 feet. Equally likely to occur in wetlands and non-wetlands. Blooms June – October.	**Absent.** Suitable habitat and soils required by this species is absent from the Project area and surrounding lands.
California satintail (*Imperata brevifolia*)	CNPS 2B	Although this facultative species is equally likely to occur in wetlands and non-wetlands, it is often found in wet springs, meadows, streambanks, and floodplains at elevations below 1600 feet. Blooms September – May.	**Absent.** Suitable habitat required by this species is absent from the Project area and surrounding lands. The nearest known occurrence of this species was recorded approximately 15 miles north of the Project area in 1893.
Panoche pepper-grass (*Lepidium jaredii ssp. album*)	CNPS 1B	Found on steep slopes, washes, alluvial-fans, and clay, sometimes alkaline, within Valley and Foothill Grassland communities in western Fresno County at elevations between 600 feet and 2400 feet. Blooms February – June.	**Absent.** Suitable habitat required by this species is absent from the Project area and surrounding lands. The Project area is also outside of the elevational range of this species. The nearest known occurrence of this species was recorded approximately 8 miles south of the Project area in 1893. The status of this observation has since been updated to "possibly extirpated," which means evidence of habitat destruction or extirpation has been received by the CNDDB.
Madera leptosiphon (*Leptosiphon serrulatus*)	CNPS 1B	Found in openings in foothill woodland, often yellow-pine forest,	**Absent.** Suitable habitat required by this species is absent from the Project area and

Species	Status	Habitat	Occurrence on Project Site
		and chaparral at elevations between 1000 feet and 4300 feet. Blooms April – May.	surrounding lands. The Project area is also outside of the elevational range of this species. The nearest known occurrence of this species was recorded approximately 15 miles north of the Project area in 1922.
caper-fruited tropidocarpum (*Tropidocarpum capparideum*)	CNPS 1B	Found in alkaline soils in low hills and valleys, often within Valley Grassland communities, at elevations below 1300 feet. Blooms March – April.	**Absent.** Suitable habitat required by this species is absent from the Project area and surrounding lands. The nearest known occurrence of this species was recorded approximately 15 miles north of the Project area in 1930.

EXPLANATION OF OCCURRENCE DESIGNATIONS AND STATUS CODES

Present:	Species observed on the site at time of field surveys or during recent past
Likely:	Species not observed on the site, but it may reasonably be expected to occur there on a regular basis
Possible:	Species not observed on the site, but it could occur there from time to time
Unlikely:	Species not observed on the site, and would not be expected to occur there except, perhaps, as a transient
Absent:	Species not observed on the site, and precluded from occurring there due to absence of suitable habitat

STATUS CODES

FE	Federally Endangered
FT	Federally Threatened
FPE	Federally Endangered (Proposed)
FPT	Federally Threatened (Proposed)
FC	Federal Candidate
CE	California Endangered
CT	California Threatened
CCT	California Threatened (Candidate)
CFP	California Fully Protected
CSC	California Species of Special Concern
CWL	California Watch List
CCE	California Endangered (Candidate)
CR	California Rare

CNPS LISTING

1A	Plants Presumed Extinct in California
1B	Plants Rare, Threatened, or Endangered in California and elsewhere
2	Plants Rare, Threatened, or Endangered in California, but more common elsewhere

3.4.3 Regulatory Setting

3.4.4 Threatened and Endangered Species

Permits may be required from the USFWS and/or CDFW if activities associated with a Project have the potential to result in the "take" of a species listed as threatened or endangered under the federal and/or state Endangered Species Acts. "Take" is defined by the state of California as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill" (California Fish and Game Code, Section 86). "Take" is more broadly defined by the federal Endangered Species Act to include "harm" (16 USC, Section 1532(19), 50 CFR, Section 17.3). The CDFW and the USFWS are responding agencies under CEQA. Both agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

3.4.5 Designated Critical Habitat

When species are listed as threatened or endangered, the USFWS often designates areas of "Critical Habitat" as defined by section 3(5)(A) of the federal Endangered Species Act (ESA). Critical Habitat is a term defined in the ESA as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical Habitat is a tool that supports the continued conservation of imperiled species by guiding cooperation with the federal government. Designations only affect federal agency actions or federally funded or permitted activities. Critical Habitat does not prevent activities that occur within the designated area. Only activities that involve a federal permit, license, or funding and are likely to destroy or adversely modify Critical Habitat will be affected.

3.4.6 Migratory Birds

The Federal Migratory Bird Treaty Act (MBTA: 16 USC 703-712) prohibits killing, possessing, or trading in any bird species covered in one of four international conventions to which the United States is a party, except in accordance with regulations prescribed by the Secretary of the Interior. The name of the act is misleading, as it actually covers almost all bird's native to the United States, even those that are non-migratory. The MBTA encompasses whole birds, parts of birds, and bird nests and eggs. Additionally, California Fish and Game Code makes it unlawful to take or possess any non-game bird covered by the MBTA (Section 3513), as well as any other native non-game bird (Section 3800).

3.4.7 Birds of Prey

Birds of prey are protected in California under provisions of Fish and Game Code (Section 3503.5), which states that it is unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks and eagles) or Strigiformes (owls), as well as their nests and eggs. The bald eagle and golden eagle are afforded additional protection under the federal Bald and Golden Eagle Protection Act (16 USC 668), which makes it unlawful to kill birds or their eggs.

3.4.8 Nesting Birds

In California, protection is afforded to the nests and eggs of all birds. California Fish and Game Code (Section 3503) states that it is "unlawful to take, possess, or needlessly destroy the nest or eggs of any bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Breeding-season disturbance that causes nest abandonment and/or loss of reproductive effort is considered a form of "take" by the CDFW.

3.4.9 Wetlands and other "Jurisdictional Waters"

Natural drainage channels and adjacent wetlands may be considered "waters of the United States" or "jurisdictional waters" subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE). The extent of jurisdiction has been defined in the Code of Federal Regulations but has also been subject to interpretation of the federal courts. Jurisdictional waters generally include:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands;
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce;

- All impoundments of waters otherwise defined as waters of the United States under the definition;
- Tributaries of waters identified in paragraphs (a)(1)-(4) (i.e. the bulleted items above).

As determined by the United States Supreme Court in its 2001 *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (*SWANCC*) decision, channels and wetlands isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds. Similarly, in its 2006 consolidated *Carabell/Rapanos* decision, the U.S. Supreme Court ruled that a significant nexus between a wetland and other navigable waters must exist for the wetland itself to be considered a navigable and therefore jurisdictional water. Furthermore, the Supreme Court clarified that the Environmental Protection Agency (EPA) and the USACE will not assert jurisdiction over ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

The USACE regulates the filling or grading of Waters of the U.S. under the authority of Section 404 of the Clean Water Act. The extent of jurisdiction within drainage channels is defined by "ordinary high water marks" on opposing channel banks. All activities that involve the discharge of dredge or fill material into Waters of the U.S. are subject to the permit requirements of the USACE. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values. No permit can be issued until the Regional Water Quality Control Board (RWQCB) issues a Section 401 Water Quality Certification (or waiver of such certification) verifying that the proposed activity will meet state water quality standards.

Under the Porter-Cologne Water Quality Control Act of 1969, the State Water Resources Control Board has regulatory authority to protect the water quality of all surface water and groundwater in the State of California ("Waters of the State"). Nine RWQCBs oversee water quality at the local and regional level. The RWQCB for a given region regulates discharges of fill or pollutants into Waters of the State through the issuance of various permits and orders. Discharges into Waters of the State that are also Waters of the U.S. require a Section 401 Water Quality Certification from the RWQCB as a prerequisite to obtaining certain federal permits, such as a Section 404 Clean Water Act permit. Discharges into all Waters of the State, even those that are not also Waters of the U.S., require Waste Discharge Requirements (WDRs), or waivers of WDRs, from the RWQCB. The RWQCB also administers the Construction Storm Water Program and the federal National Pollution Discharge Elimination System (NPDES) program. Projects that disturb one or more acres of soil must obtain a Construction General Permit under the Construction Storm Water Program. A prerequisite for this permit is the development of a Storm Water Pollution Prevention Plan (SWPPP) by a certified Qualified SWPPP Developer. Projects that discharge wastewater, storm water, or other pollutants into a Water of the U.S. may require a NPDES permit.

CDFW has jurisdiction over the bed and bank of natural drainages and lakes according to provisions of Section 1601 and 1602 of the California Fish and Game Code. Activities that may substantially modify such waters through the diversion or obstruction of their natural flow, change or use of any material from their bed or bank, or the deposition of debris require a Notification of Lake or Streambed Alteration. If CDFW determines that the activity may adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement will be prepared. Such an agreement typically stipulates that certain measures will be implemented to protect the habitat values of the lake or drainage in question.

Jurisdictional waters are absent from the Project area, and the Project does not propose a loss or degradation of jurisdictional waters.

3.4.9.1 Local

Fresno County General Plan[13]: The Fresno County General Plan sets forth the following policies that protect biological resources and which have potential relevance to the Project's CEQA review:

Policy OS-E.2: The County shall require adequate buffer zones between construction activities and significant wildlife resources, including both onsite habitats that are purposely avoided and significant habitats that are adjacent to the project site, in order to avoid the degradation and disruption of critical life cycle activities such as breeding and feeding. The width of the buffer zone should vary depending on the location, species, etc. A final determination shall be made based on informal consultation with the US Fish and Wildlife Service and/or the California Department of Fish and Wildlife.

Policy OS-F.4: The County shall ensure that landmark trees are preserved and protected whenever possible.

Policy OS-F.5: The County shall establish procedures for identifying and preserving rare, threatened, and endangered plant species that may be adversely affected by public or private development projects. As part of this process, the County shall require, as part of the environmental review process, a biological resources evaluation of the project site by a qualified biologist. The evaluation shall be based on field reconnaissance performed at the appropriate time of year to determine the presence or absence of significant plant resources and/or special-status plant species. Such evaluation shall consider the potential for significant impact on these resources and shall either identify feasible mitigation measures or indicate why mitigation is not feasible.

Policy OS-F.7: The County shall require developers to take into account a site's natural topography with respect to the design and siting of all physical improvements in order to minimize grading.

Policy OS-F. 8: The County should encourage landowners to maintain natural vegetation or plant suitable vegetation along fence lines, drainage and irrigation ditches, and on unused or marginal land for the benefit of wildlife.

3.4.10 Impact Assessment

IV-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 Wildlife or U.S. Fish and Wildlife Service?

a) Less Than Significant Impact with Mitigation Incorporated.

Species identified as candidate, sensitive, or special status species in local or regional plans policies or regulations by CDFW or the USFWS that have the potential to be impacted by the proposed Project are identified below with corresponding mitigation measures.

Prior to the start of construction, all personnel associated with construction of the Project shall be trained to be able to identify these candidate, sensitive, or special status species in order to prevent impacts to sensitive resources; therefore, the following general mitigation measure shall be implemented:

> ***Mitigation Measure BIO-1 (WEAP Training):*** Prior to initiating construction activities (including staging and mobilization), all personnel associated with Project construction shall attend mandatory Worker Environmental Awareness Program (WEAP) training, conducted by a qualified biologist, to aid workers in identifying special status resources that may occur in the Project area. The specifics of this program shall include identification of the sensitive species and suitable habitats, a description of

[13] Fresno County General Plan. https://www.co.fresno.ca.us/departments/public-works-planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/general-plan-maps Accessed 22 October 2018.

the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area. A fact sheet conveying this information, along with photographs or illustrations of sensitive species with potential to occur onsite, shall also be prepared for distribution to all contractors, their employees, and all other personnel involved with construction of the Project. All employees shall sign a form documenting that they have attended WEAP training and understand the information presented to them.

Project-Related Mortality and/or Disturbance of Nesting Raptors, Migratory Birds, and Special Status Birds (Including Swainson's Hawk)

The Project proposes removal of five eucalyptus trees to facilitate placement of Well No. 7 and associated infrastructure along Henderson Road near South West Avenue. Removal of these trees could result in a mortality, nest failure, and reduction of suitable nesting habitat. Raptors such as the red-tailed hawk or American kestrel could potentially nest in mature trees within the Project area. Smaller trees or shrubs could be inhabited by a variety of migratory and resident passerines, and buildings or other structures could be utilized by the black phoebe or house finch. If birds were to be nesting on or adjacent to the Project area at the time of construction, Project-related activities could result in the abandonment of active nests or direct mortality to these birds. Construction activities that adversely affect the nesting success of raptors or result in mortality of individual birds constitute a violation of State and federal laws and would be considered a significant impact under CEQA and NEPA.

Although not observed during the biological survey, Swainson's hawks are not uncommon in this portion of the Central Valley. Only a small area of marginal foraging habitat occurs within the Project area and surrounding lands in the form of irrigated vineyard and ruderal parcels. The Project area's only trees are blue gum eucalyptus along the roadside and ornamental trees associated with landscaping or adjacent properties. The constant disturbance and presence of humans would likely discourage nesting in the few trees large enough to support a raptor nest in the vicinity. Regardless, Swainson's hawk individuals could potentially nest within the large trees of the Project site or surrounding area. Project activities that adversely affect nesting success or result in mortality of Swainson's hawks would violate State and federal laws and would be considered a significant impact under CEQA and NEPA.

As previously mentioned, due to the developed and ruderal nature of the lands, nesting and foraging habitat for raptors, resident and migratory birds, and special status birds, such as Swainson's hawks within the Project area is marginal, at best. Habitat of higher foraging and nesting value is regionally abundant. Therefore, the development resulting from implementation of the Project would not be considered a significant loss of foraging or nesting habitat under CEQA or NEPA. Furthermore, in the unlikely event that a Swainson's hawk or other avian species is foraging within the Project site during construction activities, the individual would be expected to fly away from disturbance they encounter, subsequently eliminating the risk of injury or mortality while foraging.

Nesting bird season is generally accepted as February 1 through August 31; however, Swainson's hawk nesting season is generally accepted as March 1 through September 15. For simplicity, these timeframes have been combined.

Implementation of the following measures will reduce potential impacts to nesting raptors, migratory birds, and special status birds, including Swainson's hawk to a less than significant level under CEQA and NEPA, and will ensure compliance with State and federal laws protecting these avian species.

Mitigation. The following measures will be implemented prior to the start of construction:

> ***Mitigation Measure BIO-2a (Avoidance):*** The Project's construction activities shall occur, if feasible, between September 16 and January 31 (outside of nesting bird season) in an effort to avoid impacts to nesting birds.
>
> ***Mitigation Measure BIO-2b (Pre-construction Surveys):*** If activities must occur within nesting bird season (February 1 to September 15), a qualified biologist shall conduct pre-construction surveys for active nests within 30 days prior to the start of construction. The survey shall include the proposed work area and surrounding lands within 0.5 mile. If no active nests are observed, no further mitigation is required. Raptor nests are considered "active" upon the nest-building stage.
>
> ***Mitigation Measure BIO-2c (Establish Buffers):*** On discovery of any active nests near work areas, the biologist shall determine appropriate construction setback distances based on applicable CDFW and/or USFWS guidelines and/or the biology of the species in question. Construction buffers shall be identified with flagging, fencing, or other easily visible means, and shall be maintained until the biologist has determined that the nestlings have fledged.

Project-Related Impacts to Special Status Plant Species

Eight special status plant species have been documented in the Project vicinity, including California alkali grass (*Puccinellia simplex*), California jewelflower (*Caulanthus californicus*), lesser saltscale (*Atriplex miniscula*), brittlescale (*Atriplex depressa*), California satintail (*Imperata brevifolia*), Panoche pepper-grass (*Lepidium jaredii ssp. album*) Madera leptosiphon (*Leptosiphon serrulatus*), and caper-fruited tropidocarpum (*Tropidocarpum capparideum*). As explained in **Table 3-9**, all of the aforementioned plant species are absent from the Project area due to past and ongoing disturbance and/or the absence of suitable habitat. Therefore, the implementation of the Project will have no effect on individual plants or regional populations of these special status plant species. Mitigation measures are not warranted.

Project-Related Impacts to Special Status Animal Species Absent From, or Unlikely to Occur on, the Project Site

Of the 20 regionally occurring special status species, 19 are considered absent or unlikely to occur within the Project area due to past or ongoing disturbance and/or absence of suitable habitat. As explained in **Table 3-8**, the following species were deemed absent from the Project area: western spadefoot (*Spea hammondii*), California tiger salamander (*Ambystoma californiense*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), burrowing owl (*Athene cunicularia*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), Fresno kangaroo rat (*Dipodomys nitratoides exilis*), Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*), giant gartersnake (*Thamnophis gigas*), California red-legged frog *(Rana draytonii*), blunt-nosed leopard lizard (*Gambelia sila*), vernal pool tadpole shrimp (*Lepidurus packardi*), vernal pool fairy shrimp (*Branchinecta lynchi*), and Delta smelt (*Hypomesus transpacificus*); and the following species were deemed unlikely to occur within the Project area: tricolored blackbird (*Agelaius tricolor*), San Joaquin kit fox (*Vulpes macrotis mutica*), western mastiff bat (*Eumops perotis californicus*), pallid bat (*Antrozous pallidus*), northern California legless lizard (*Anniella pulchra*), and coast horned lizard (*Phrynosoma blainvillii*). Therefore, implementation of the Project will have no impact on these 19 special status species through construction mortality, disturbance, or loss of habitat. Mitigation measures are not warranted.

Implementation of Mitigation Measures **BIO-1** and **BIO-2a** through **2c** will reduce potential impacts to nesting birds and any other special status or protected species to a less than significant level and will ensure compliance with State and federal laws protecting these resources.

IV-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 Wildlife or U.S. Fish and Wildlife Service?

b) No Impact. Water features, hydric soils, riparian vegetation, and riparian habitat is absent from the Project area and adjacent lands. According to CNDDB, there are no recorded observations of natural communities of special concern with potential to occur within the Project area or vicinity. Additionally, no natural communities of special concern were observed during the biological survey. Therefore, implementation of the Project will have no impact on riparian habitat or any other sensitive natural communities. Mitigation measures are not warranted.

IV-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?

c) No Impact. Wetlands are absent from the Project area and adjacent lands. Furthermore, there is no potential for indirect downstream effects because the Project does not involve lake or streambed altering activities. Therefore, implementation of the Project will have no impact on wetlands and mitigation measures are not warranted.

IV-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?

d) No Impact. The Project area does not contain features that would be likely to function as wildlife movement corridors. Furthermore, the Project is located in a region often disturbed by intensive agricultural cultivation practices and human disturbance which would discourage dispersal and migration. Therefore, implementation of the Project will have no impact on wildlife movement corridors, and mitigation is not warranted.

IV-e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

e) No Impact. The Project description is in compliance with the goals and policies set forth in the Fresno County General Plan. Project activities do include the removal of five non-native eucalyptus trees, which are not protected by any local policies or ordinances. There will be no impact.

IV-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?

f) No Impact. The Project site is not within a designated Habitat Conservation Plan, Natural Conservation Plan, or any other State or local habitat conservation plan. There would be no impact.

3.5 Cultural Resources

Table 3-10. Cultural Resources Impacts

Cultural Resources					
	Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☒	☐	☐
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c)	Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

3.5.1 Environmental Setting

The Project is located on the open flats of the San Joaquin Valley, approximately 2.3 miles west of Highway 41 and 12 miles south of Fresno.

Prior to the appearance of agriculture, starting in the nineteenth century, this location would have been prairie grasslands, grading into riparian environments and marshlands further south toward the north bank of Tulare Lake[14]. The study area and immediate surroundings have been urbanized and/or farmed and grazed for many years and no native vegetation is present. Currently, the study area consists of commercial and residential properties surrounded by vineyards.

According to the geoarchaeological model developed by Meyer et al., the study area has a moderately high potential for buried archaeological deposits. Buried sites and cultural resources are therefore considered to be possible within the APE.

3.5.2 Methodology

An intensive Class III cultural resources inventory/Phase I survey of the Project area, including parallel survey transects, was conducted by ASM Affiliates, Inc. on December 21, 2018. A records search was conducted at the Southern San Joaquin Valley Archaeological Information Center, California State University, Bakersfield. A record search of the Native American Heritage Commission (NAHC) Sacred Lands File was also conducted, which resulted in a declaration that no sacred sites or tribal cultural resources are known to exist within the Project site or in the vicinity. Parallel survey transects spaced at 15-m apart were employed for the inventory. Class III Inventory/Phase I Survey Report.

In addition to the record search of the Sacred Lands File, NAHC provided a list of 13 local Native American Tribal contacts, representing 10 different Native American Tribes who may have knowledge of cultural resources in the vicinity or general interest in the Project. The 13 Tribal contacts were communicated with in writing via U.S. Mail with a letter dated December 10, 2018 informing them of the proposed Project. No comments were received in response to the letters. ASM Affiliates, Inc. further attempted to reach each Tribal contact by telephone on January 3, 2019. No comments were received in response to the telephone messages. However, some of the tribes requested follow up contact under certain conditions.

[14] Preston, William L., 1981 Vanishing Landscapes: Land and Life in the Tulare Lake Basin. Berkeley, University of California Press.

3.5.3 Regulatory Setting

3.5.3.1 Federal

National Historic Preservation Act of 1966 (as amended), Section 106: The significance of cultural resources is evaluated under the criteria for inclusion in the National Register of Historic Places (NRHP), authorized under the National Historic Preservation Act of 1966, as amended.

Significant impacts under CEQA occur when "historically significant" or "unique" cultural resources are adversely affected, which occurs when such resources could be altered or destroyed through project implementation. Historically significant cultural resources are defined by eligibility for or by listing in the California Register of Historical Resources (CRHR). In practice, the federal NRHP criteria (see below) for significance applied under Section 106 are generally (although not entirely) consistent with CRHR criteria (see PRC Section 5024.1; Title 14 CCR, Sections 4852 and 15064.5(a)(3)).

Significant cultural resources are those archaeological resources and historical properties that:

(A) Are associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(B) Are associated with the lives of persons important in our past;

(C) Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or

(D) Have yielded, or may be likely to yield, information important in prehistory or history.

Unique resources under CEQA, in slight contrast, are those that represent:

An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC Section 21083.2(g)).

Preservation in place is the preferred approach under CEQA to mitigating adverse impacts to significant or unique cultural resources. Sites listed or eligible for listing on the NRHP are considered to be historic properties. Sites younger than 50 years, unless of exceptional importance, are not eligible for listing in the NRHP.

American Indian Religious Freedom Act

The American Indian Religious Freedom Act, a federal law and joint resolution of Congress was created to protect and preserve the traditional religious rights and cultural practices of American Indians, Eskimos, Aleuts and Native Hawaiians. These rights include, but are not limited to, access of sacred sites, repatriation of sacred objects held in museums, freedom to worship through ceremonial and traditional rites, including within prisons, and use and possession of objects considered sacred.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act requires federal agencies and institutions that receive federal funding to return Native American cultural items to lineal descendants and culturally affiliated Indian tribes and Native Hawaiian organizations. Cultural items include human remains, funerary objects, sacred objects, and objects of cultural patrimony.

3.5.3.2 State

CEQA requires consideration of project impacts on archaeological or historical sites deemed to be "historical resources." Under CEQA, a substantial adverse change in the significant qualities of a historical resource is considered a significant effect on the environment. For the purposes of CEQA, a "historical resource" is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources (Title 14 CCR Section15064.5[a][1]-[3]). Historical resources may include, but are not limited to, "any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (PRC Section 5020.1[j]).

The eligibility criteria for the California Register are the definitive criteria for assessing the significance of historical resources for the purposes of CEQA (Office of Historic Preservation.). The criteria for a resource to be considered "historically significant" for listing on the California Register is demonstrated below.

A resource is considered "historically significant" if it meets one or more of the following criteria for listing on the California Register:

- *Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.*
- *Is associated with the lives of persons important in our past.*
- *Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.*
- *Has yielded, or may be likely to yield, information important in prehistory or history. (PRC Section5024.1[c])*

California Health and Safety Code: Health and Safety Code Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the County coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California Native American Heritage Commission. PRC Section 5097.98 specifies the procedures to be followed in case of the discovery of human remains on non-federal land. The disposition of Native American burials is within the jurisdiction of the Native American Heritage Commission.

Paleontological Resources: Paleontological resources are the fossilized remains of plants and animals and associated deposits. The Society of Vertebrate Paleontology has identified vertebrate fossils, their taphonomic and associated environmental indicators, and fossiliferous deposits as significant nonrenewable paleontological resources. Botanical and invertebrate fossils and assemblages may also be considered significant resources[15].CEQA requires that a determination be made as to whether a project would directly or indirectly destroy a unique paleontological resource or site or unique geological feature (CEQA Appendix G(v)(c)). If an impact is significant, CEQA requires feasible measures to minimize the impact (CCR Title 14(3) Section 15126.4(a)(1)). PRC Section 5097.5 (see above) also applies to paleontological resources.

[15] Society of Vertebrate Paleontology. Conformable Impact Mitigation Guidelines Committee Policy Statements. http://www.vertpaleo.org/ConformableImpactMitigationGuidelinesCommittee.htm.

3.5.3.3 Local

Fresno County General Plan. The 2000 Fresno County General Plan contains policies aimed at preserving and protecting cultural resources. The following policies are relevant to the protection of cultural resources within the Project site and surrounding area:

Goal OS-J: To identify, protect, and enhance Fresno County's important historical, archeological, paleontological, geological, and cultural sites and their contributing environment, and promote and encourage preservation, restoration, and rehabilitation of Fresno County's historically significant resources in order to promote historical awareness, community identify, and to recognize the County's valued assets that have contributed to past County events, trends, styles of architecture, and economy.

Policy OS-J.1: Preservation of Historic Resources. The County shall encourage preservation of any sites and/or buildings identified as having historical significance pursuant to the list maintained by the Fresno County Historic Landmarks and Records Advisory Commission.

Policy OS-J.2: Historic Resources Consideration. The County shall consider historic resources during preparation or evaluation of plans and discretionary development projects.

Policy OS-J.14: Sites Protection and Mitigation. The County shall require that discretionary development projects, as part of any required CEQA review, identify and protect important historical, archeological, paleontological, and cultural sites and their contributing environment from damage, destruction, and abuse to the maximum extent feasible. Project-level mitigation shall include accurate site surveys, consideration of project alternatives to preserve archeological and historic resources, and provision for resource recovery and preservation when displacement is unavoidable[16] .

3.5.4 Impact Assessment

V-a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

V-b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

a-b) Less than Significant Impact with Mitigation Incorporated.

An intensive Class III cultural resources inventory/Phase I survey of the Project area, including parallel survey transects, was conducted by ASM Affiliates, Inc. on December 21, 2018. The Well 7 location and an additional survey area consist of an undeveloped but previously disked land. A proposed pipeline corridor parallel to Henderson Rd. is sully developed and disturbed. No historical or archaeological resources of any kind are present within the study area. A records search was conducted at the Southern San Joaquin Valley Archaeological Information Center, California State University, Bakersfield. A record search of the Native American Heritage Commission (NAHC) Sacred Lands File was also conducted, which resulted in a declaration that no sacred sites or tribal cultural resources are known to exist within the Project site or in the vicinity.

In addition to the record search of the Sacred Lands File, NAHC provided a list of 13 local Native American Tribal contacts, representing 10 different Native American Tribes who may have knowledge of cultural resources in the vicinity or general interest in the Project. The following 13 Tribal contacts were communicated with in writing via U.S. Mail with a letter dated December 10, 2018 informing them of the proposed Project.

[16] 2000 Fresno County General Plan, p. RC-51

1. *Big Sandy Rancheria of Western Mono Indians, Auberry, Chairperson*
2. *Cold Springs Rancheria, Tollhouse, Chairperson*
3. *Dumna Wo-Wah Tribal Government, Fresno, Chairperson*
4. *Dunlap Band of Mono Indians, Dunlap, Tribal Chair*
5. *Dunlap Band of Mono Indians, Fresno, Tribal Secretary*
6. *Kings River Choinumni Farm Tribe, Fresno,*
7. *North Fork Mono Tribe, Clovis, Chairperson*
8. *Santa Rosa Rancheria Tachi Yokut Tribe, Lemoore, Chairperson*
9. *Table Mountain Rancheria, Friant, Chairperson*
10. *Table Mountain Rancheria, Friant, Cultural Resources Director*
11. *Traditional Choinumni Tribe, Fresno, Chairperson*
12. *Traditional Choinumni Tribe, Fresno, Cultural Resources*
13. *Wuksache Indian Tribe/Eshom Valley Band, Salinas, Chairperson*

No comments were received in response to the letters. ASM Affiliates, Inc. further attempted to reach each Tribal contact by telephone on January 3, 2019. No comments were received in response to the telephone messages.

Although it is unlikely that archeological resources will occur during construction or operation of the proposed Project; however, with the implementation of Mitigation MeasureCUL-1 the impact will remain less than significant.

Mitigation Measure CUL-1 (Archaeological Resources)
In the event that archaeological resources are encountered at any time during development or ground-moving activities within the entire project area, all work in the vicinity of the find shall halt until a qualified archaeologist can assess the discovery. The District shall implement all recommendations of the archaeologist necessary to avoid or reduce to a less than significant level potential impacts to cultural resource. Appropriate actions could include a Data Recovery Plan or preservation in place.

V-c) Disturb any human remains, including those interred outside of dedicated cemeteries?

c) Less than Significant Impact with Mitigation Incorporated. No formal cemeteries or other places of human internment are known to exist on the Project site; however, in accordance with Health and Safety Code Section 7050.5 and Public Resource Code Section 5097.98, if human remains are uncovered, Mitigation Measure CUL-2 would be implemented.

Mitigation Measure CUL-2 (Human Remains)
If human remains are uncovered, or in any other case when human remains are discovered during construction, the Tulare County Coroner is to be notified to arrange proper treatment and disposition. If the remains are identified—on the basis of archaeological context, age, cultural associations, or biological traits—as those of a Native American, California Health and Safety Code 7050.5 and Public Resource Code 5097.98 require that the coroner notify the NAHC within 24 hours of discovery. The NAHC will then identify the Most Likely Descendent who will determine the manner in which the remains are treated.

3.6 Energy

Table 3-11. Energy Impacts

Energy					
Would the project:		Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☐	☒
b)	Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

3.6.1 Environmental Setting

PG&E has sufficient energy supplies to serve the growth that has occurred in Fresno County. Much of the energy consumed in the region is for residential, commercial, and transportation purposes.

Construction equipment and construction worker vehicles operated during Project demolition and construction would use fossil fuels. This increased fuel consumption would be temporary and would cease at the end of the construction activity, and it would not have a residual requirement for additional energy input. The marginal increases in fossil fuel use resulting from Project construction are not expected to have appreciable impacts on energy resources.

3.6.2 Regulatory Setting

3.6.2.1 Federal

There are no federal regulations, plans, programs, or guidelines associated with energy that are applicable to the proposed Project.

3.6.2.2 State

California Public Utilities Commission: The California Public Utilities Commission (CPUC) regulates investor-owned electric and natural gas utilities operating in California[17].

California Environmental Quality Act: The CEQA Guidelines require a discussion of the potential energy impacts of the proposed Project. The Project will avoid or reduce inefficient, wasteful and unnecessary consumption of energy.

[17] California Public Utilities Commission. www.cpuc.ca.gov/energy/ Site accessed February 13, 2019

3.6.2.3 Local

Fresno County General Plan[18]: The Fresno County General Plan sets forth policies regarding energy in their Housing Element, however none of these policies are relevant to this Project.

3.6.3 Impact Assessment

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

a) No Impact. As discussed in Section 3.3, the proposed Project will not exceed any air emission thresholds during construction or operation. The Project will comply with construction best management practices and is required to complete a SWPPP as part of construction and operational permits. Once completed, the Project will be mostly passive in nature and will not use an excessive amount of energy. Therefore, the Project will not result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during construction or operation.

VI-b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

b) No Impact. The proposed Project will be passive in nature once it is completed, and the construction phase will be temporary in nature and will not exceed any thresholds set by the SJVAPCD.

[18] Fresno County General Plan. Housing Element. https://www.co.fresno.ca.us/home/showdocument?id=18117Accessed 22 January 2019.

3.7 Geology and Soils

Table 3-12. Geology and Soils Impacts

Geology and Soils					
	Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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.	☐	☐	☒	☐
	ii) Strong seismic ground shaking?	☐	☐	☒	☐
	iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
	iv) Landslides?	☐	☐	☐	☒
b)	Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c)	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d)	Be located on expansive soil, as defined in Table 18-1-B of the most recently adopted Uniform Building Code creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
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 wastewater?	☐	☐	☐	☒
f)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☐

3.7.1 Environmental Setting

3.7.1.1 Geology and Soils

The Project is located in southern Fresno County, in the southern section of California's Great Valley Geomorphic Province, or Central Valley. The Sacramento Valley makes up the northern third and the San Joaquin Valley makes up the southern two-thirds of the geomorphic province. Both valleys are watered by large rivers flowing west from the Sierra Nevada Range, with smaller tributaries flowing east from the Coast

Ranges. Most of the surface of the Great Valley is covered by Quaternary (present day to 1.6 million years ago) alluvium. The sedimentary formations are steeply upturned along the western margin due to the uplifted Sierra Nevada Range.[19] From the time the Valley first began to form, sediments derived from erosion of igneous and metamorphic rocks and consolidated marine sediments in the surrounding mountains have been transported into the Valley by streams.

3.7.1.2 Faults and Seismicity

The Project site is not located within an Alquist-Priolo Earthquake Fault Zone and no known faults cut through the local soil at the site. The nearest major fault is the San Andreas Fault, located approximately 55 miles southwest of the Project site. The San Andreas Fault is the dominant active tectonic feature of the Coast Ranges and represents the boundary of the North American and Pacific plates. A smaller fault zone, the Nunez Fault is approximately 40 miles southwest of the site.

3.7.1.3 Liquefaction

The potential for liquefaction, which is the loss of soil strength due to seismic forces, is dependent on soil types and density, depth to groundwater, and the duration and intensity of ground shaking. Although no specific liquefaction hazard areas have been identified in the county, this potential is recognized throughout the San Joaquin Valley where unconsolidated sediments and a high water table coincide. It is reasonable to assume that due to the depth to groundwater within the southern portion of Fresno County, liquefaction hazards would be negligible. Using the USDA NRCS soil survey of Fresno County, an analysis of the soils onsite was performed (**Appendix D**). Soils in the area consist of Delhi loamy sandy and Hesperia sandy loam.

3.7.1.4 Soil Subsidence

Subsidence occurs when a large land area settles due to over-saturation or extensive withdrawal of ground water, oil, or natural gas. These areas are typically composed of open-textured soils, high in silt or clay content, that become saturated. The Project site is dominated by Delhi loamy sand, with a low to moderate risk of subsidence.

3.7.1.5 Dam and Levee Failure

Pine Flat Reservoir is located approximately 35 miles northeast, and the Project site lies within the inundation zone for Pine Flat Dam.

3.7.2 Regulatory Setting

3.7.2.1 Federal

There are no federal regulations, plans, programs, or guidelines associated with geology and soils that are applicable to the proposed Project.

3.7.2.2 State

California Alquist-Priolo Earthquake Fault Zoning Act: The Alquist-Priolo Earthquake Fault Zoning Act (originally enacted in 1972 and renamed in 1994) is intended to reduce the risk to life and property from surface fault rupture during earthquakes. The statute prohibits the location of most types of structures

[19] Harden, D.R. 1998, California Geology, Prentice Hall, 479 pages

intended for human occupancy across the traces of active faults and regulates construction in the corridors along active faults.

California Building Standards Code: The California Code of Regulations (CCR) Title 24 is assigned to the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. The California Building Code incorporates by reference the International Building Code with necessary California amendments. The International Building Code is a widely-adopted model building code in the United States published by the International Code Council. About one-third of the text within the California Building Standards Code has been tailored for California earthquake conditions.

3.7.2.3 Local

Fresno County General Plan: The Fresno County General Plan sets forth several goals and policies relating to seismic and geologic hazards, none of which are relevant to this Project's CEQA review.

3.7.3 Impact Assessment

VII-a) Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

VII-a-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.

VII-a-ii) Strong seismic ground shaking?

a-i and a-ii) Less Than Significant Impact. The Project site and its vicinity are located in an area traditionally characterized by relatively low seismic activity. The site is not located in an Alquist-Priolo Earthquake Fault Zone as established by the Alquist-Priolo Fault Zoning Act (Section 2622 of Chapter 7.5, Division 2 of the California Public Resources Code). The nearest major fault is the San Andreas Fault, located approximately 55 miles southwest of the Project site. A smaller fault zone, the Nunez Fault is approximately 40 miles southwest of the site.

The Project involves construction of a water well and associated infrastructure, which does not include development of habitable residential, agricultural, commercial or industrial structures. Operation of the Project would not require permanent staff onsite or an increase in the number of employees required for routine maintenance. Instead, routine maintenance and repairs would be performed infrequently, on an as-needed basis by current CCSD employees. Therefore, implementation of the Project would not result in an increase of people or habitable structures onsite. Any impact would be less than significant.

VII-a-iii) Seismic-related ground failure, including liquefaction?

a-iii) Less Than Significant Impact. Liquefaction is a process which involves the temporary transformation of soil from a solid state to a fluid form during intense and prolonged groundshaking. Water-saturated areas with shallow depth to groundwater and uniform sands, loose-to-medium in density, are prone to liquefaction[20].

VII-a-iv) Landslides?

a-iv) No Impact. As the proposed Project is located on the Valley floor, no major geologic landforms exist on or near the site that could result in a landslide event. The potential landslide impact at this location is

[20] Fresno County General Plan Background Report. https://www.co.fresno.ca.us/home/showdocument?id=8398 Accessed 26 November 2018.

minimal as the site is approximately 30 miles from the foothills and the local topography is essentially flat and level. There will be no impact.

VII-b) Result in substantial soil erosion or the loss of topsoil?

b) Less Than Significant Impact. Earthmoving activities associated with the Project would include excavation, drilling, trenching, grading, and infrastructure construction over an area of approximately 1.2 acres. These activities could expose soils to erosion processes and the extent of erosion would vary depending on slope steepness/stability, vegetation/cover, concentration of runoff, and weather conditions. Dischargers whose projects disturb one (1) or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity Construction General Permit Order 2009-0009-DWQ. Construction activity subject to this permit includes clearing, grading and disturbances to the ground such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development of a Storm Water Pollution Prevention Plan (SWPPP) by a certified Qualified SWPPP Developer (QSD). Since the Project site has relatively flat terrain with a low potential for soil erosion and would comply with the SWRCB requirements, the impact would be less than significant.

VII-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?

VII -d) Be located on expansive soil, as defined in Table 18-1-B of the most recently adopted Uniform Building Code creating substantial direct or indirect risks to life or property?

c and d) Less Than Significant Impact. Soils onsite consist primarily of Delhi loamy sand, which is classified as somewhat excessively drained with a very low runoff class (See NRCS Soil Resource Report in **Appendix D**). The Project site and surrounding areas do not contain substantial grade changes. Risk of landslides, lateral spreading, subsidence, liquefaction, and collapse are minimal. The Project does not propose significant alteration of the topography of the site and it does not involve development of structures or facilities that could be affected by expansive soils or expose people to substantial risks to life or property. Furthermore, the Project will be consistent with the California Building Standards Code. Any impacts would be less than significant.

VII-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?

e) No Impact. Septic installation or alternative waste water disposal systems are not necessary for the project. There will be no impact.

VII f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

f) No Impact. There are no unique paleontological resources or sites or unique geologic features present on the proposed Project site. Therefore, the Project would not directly or indirectly destroy any unique paleontological resources or sites or any unique geologic feature. There would be no impact.

3.8 Greenhouse Gas Emissions

Table 3-13. Greenhouse Gas Emissions Impacts

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

3.8.1 Environmental Setting

The Earth's climate has been warming for the past century. It is believed that this warming trend is related to the release of certain gases into the atmosphere. Greenhouse gases (GHG) absorb infrared energy that would otherwise escape from the Earth. As the infrared energy is absorbed, the air surrounding the Earth is heated. An overall warming trend has been recorded since the late 19th century, with the most rapid warming occurring over the past two decades. The 10 warmest years of the last century all occurred within the last 15 years. It appears that the decade of the 1990s was the warmest in human history (National Oceanic and Atmospheric Administration, 2010). Human activities have been attributed to an increase in the atmospheric abundance of greenhouse gases. The following is a brief description of the most commonly recognized GHGs.

3.8.1.1 Greenhouse Gases

Commonly identified GHG emissions and sources include the following:

Carbon dioxide (CO_2) is an odorless, colorless natural greenhouse gas. CO_2 is emitted from natural and anthropogenic sources. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic out gassing. Anthropogenic sources include the burning of coal, oil, natural gas, and wood.

Methane (CH_4) is a flammable greenhouse gas. A natural source of methane is the anaerobic decay of organic matter. Geological deposits, known as natural gas fields, also contain methane, which is extracted for fuel. Other sources are from landfills, fermentation of manure, and ruminants such as cattle.

Nitrous oxide (N_2O), also known as laughing gas, is a colorless greenhouse gas. Nitrous oxide is produced by microbial processes in soil and water, including those reactions that occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load.

Water vapor is the most abundant, and variable greenhouse gas. It is not considered a pollutant; in the atmosphere, it maintains a climate necessary for life.

Ozone (O_3) is known as a photochemical pollutant and is a greenhouse gas; however, unlike other greenhouse gases, ozone in the troposphere is relatively short-lived and, therefore, is not global in nature. Ozone is not emitted directly into the atmosphere but is formed by a complex series of chemical reactions between volatile organic compounds, nitrogen oxides, and sunlight.

Aerosols are suspensions of particulate matter in a gas emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light.

Chlorofluorocarbons (CFCs) are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). CFCs were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. CFCs destroy stratospheric ozone; therefore, their production was stopped as required by the Montreal Protocol in 1987.

Hydrofluorocarbons (HFCs) are synthetic chemicals that are used as a substitute for CFCs. Of all the greenhouse gases, HFCs are one of three groups (the other two are perfluorocarbons and sulfur hexafluoride) with the highest global warming potential. HFCs are human-made for applications such as air conditioners and refrigerants.

Perfluorocarbons (PFCs) have stable molecular structures and do not break down through the chemical processes in the lower atmosphere; therefore, PFCs have long atmospheric lifetimes, between 10,000 and 50,000 years. The two main sources of PFCs are primary aluminum production and semiconductor manufacture.

Sulfur hexafluoride (SF_6) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It has the highest global warming potential of any gas evaluated. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

3.8.1.2 Effects of Climate Change

There are uncertainties as to exactly what the climate changes will be in various local areas of the earth, and what the effects of clouds will be in determining the rate at which the mean temperature will increase. There are also uncertainties associated with the magnitude and timing of other consequences of a warmer planet: sea level rise, spread of certain diseases out of their usual geographic range, the effect on agricultural production, water supply, sustainability of ecosystems, increased strength and frequency of storms, extreme heat events, air pollution episodes, and the consequence of these effects on the economy.

Emissions of GHGs contributing to global climate change are largely attributable to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. About three-quarters of human emissions of CO_2 to the global atmosphere during the past 20 years are due to fossil fuel burning. Atmospheric concentrations of CO_2, CH_4, and N_2O have increased 31 percent, 151 percent, and 17 percent respectively since the year 1750 (CEC 2008). GHG emissions are typically expressed in carbon dioxide-equivalents (CO_2e), based on the GHG's Global Warming Potential (GWP). The GWP is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. For example, one ton of CH_4 has the same contribution to the greenhouse effect as approximately 21 tons of CO_2. Therefore, CH_4 is a much more potent GHG than CO_2.

3.8.2 Methodology

An Air Quality and Greenhouse Gas Emissions Evaluation Report (**Appendix A**) was prepared in November 2018. The sections below detail the methodology of the report and its conclusions.

3.8.2.1 Short-Term Construction-Generated Emissions

Short-term construction emissions associated with the Project were calculated using CalEEmod, Version 2016.3.2. Emissions' modeling was assumed to occur over an approximate nine-month period and covering a site area of 1.20 acres. Remaining assumptions were based on the default parameters contained in the model. Modeling assumptions and output files are included in **Appendix A**.

3.8.2.2 Long-Term Operational Emissions

Long-term operational emissions associated with the Project are estimated to be minimal in nature. Maintenance will be provided on an as needed basis by existing staff, and the operational equipment, such as the use of stationary electric pumps, will be similar to the existing system which results in negligible emissions. The Project does propose the use of a diesel-powered back-up generator. Generator use was estimated as 100 hours per year and specifications were based on the existing Well No. 6 equipment which includes a 335-horsepower generator. Modeling assumptions and output files are included in **Appendix A**.

3.8.2.3 Thresholds of Significance

CEQA Guidelines Amendments became effective March 18, 2010. Included in the Amendments are revisions to the Appendix G Initial Study Checklist. In accordance with these Amendments, a project would be considered to have a significant impact to climate change if it would:

a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or,
b. Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

In accordance with SJVAPCD's *CEQA Greenhouse Gas Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects*[21], proposed projects complying with Best Performance Standards (BPS) would be determined to have a less-than-significant impact. Projects not complying with BPS would be considered less than significant if operational GHG emissions would be reduced or mitigated by a minimum of 29 percent, in comparison to business-as-usual (year 2004) conditions. In addition, project-generated emissions complying with an approved plan or mitigation program would also be determined to have a less-than-significant impact.

3.8.3 Regulatory Setting

3.8.3.1 Federal

Although climate change and GHG reduction is a concern at the federal level; currently there are no regulations or legislation that have been enacted specifically addressing GHG emissions reductions and climate change at the project level.

[21] Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA. http://www.valleyair.org/Programs/CCAP/12-17-09/3%20CCAP%20-%20FINAL%20LU%20Guidance%20-%20Dec%2017%202009.pdf Accessed 7 January 2019

3.8.3.2 State

Assembly Bill 32 - California Global Warming Solutions Act of 2006: AB 32 (Health and Safety Code Sections 38500, 38501, 38510, 38530, 38550, 38560, 38561–38565, 38570, 38571, 38574, 38580, 38590, 38592–38599 "et seq.,") requires that Statewide GHG emissions be reduced to 1990 levels by the year 2020. The gases that are regulated by AB 32 include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, nitrogen trifluoride, and sulfur hexafluoride. The reduction to 1990 levels will be accomplished through an enforceable Statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce Statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires that CARB adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrives at the cap, institute a schedule to meet the emissions cap, and develop tracking, reporting, and enforcement mechanisms to ensure that the State achieves reductions in GHG emissions necessary to meet the cap. AB 32 also includes guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.

Senate Bill 97 - CEQA: Greenhouse Gas Emissions: Senate Bill 97, signed in August 2007, acknowledges that climate change is an important environmental issue that requires analysis under CEQA. This bill directs the Governor's Office of Planning and Research to prepare, develop, and transmit to the Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, by July 1, 2009. The Resources Agency is required to certify or adopt those guidelines by January 1, 2010. Amendments to the CEQA guidelines took effect March 18, 2010. The revisions include a new section (Sec. 15064.4) that specifically addresses the potential significance of GHG emissions. Section 15064.4 calls for a "good-faith effort" to "describe, calculate or estimate" GHG emissions. Section 15064.4 further States that a lead agency "should" consider several factors when assessing the significance of impacts from GHG emissions on the environment, including: the extent to which the project would increase or reduce GHG emissions; whether project emissions exceed an applicable threshold of significance; and the extent to which the project complies with "regulations or requirements adopted to implement a Statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions." The guidelines also State that a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements of previously approved plan or mitigation program (Sec. 15064(h)(3)). However, the guidelines do not require or recommend a specific analytical methodology or provide quantitative criteria for determining the significance of GHG emissions.

Cap-and-Trade Regulation: The cap-and-trade regulation is a key element in California's climate plan. It sets a Statewide limit on sources responsible for 85 percent of California's greenhouse gas emissions, and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The cap-and-trade rules came into effect on January 1, 2013 and apply to large electric power plants and large industrial plants. In 2015, they will extend to fuel distributors (including distributors of heating and transportation fuels). At that stage, the program will encompass nearly 85 percent of the State's total greenhouse gas emissions.

GHG emissions addressed by the cap-and-trade regulation are subject to an industry-wide cap on overall GHG emissions. The cap-and-trade regulation sets a firm limit or cap on GHGs, which declines approximately 3 percent each year beginning in 2013. Any growth in emissions must be accounted for under

the cap, such that a corresponding and equivalent reduction in emissions must occur to allow any increase. The cap-and-trade regulation will help California achieve its goal of reducing GHG emissions to 1990 levels by the year 2020, and ultimately achieving an 80% reduction from 1990 levels by 2050. As such, the CARB has determined that the cap-and-trade regulation meets the requirements of AB 32.

3.8.3.3 Local

San Joaquin Valley Air Pollution Control District

SJVAPCD Climate Change Action Plan:

On August 21, 2008, the SJVAPCD Governing Board approved the District's Climate Change Action Plan with the following goals and actions:

Goals:

- Assist local land-use agencies with California Environmental Quality Act (CEQA) issues relative to projects with GHG emissions increases.
- Assist Valley businesses in complying with mandates of AB 32.
- Ensure that climate protection measures do not cause increase in toxic or criteria pollutants that adversely impact public health or environmental justice communities.

Actions:

- Authorize the Air Pollution Control Officer to develop GHG significance threshold(s) or other mechanisms to address CEQA projects with GHG emissions increases. Begin the requisite public process, including public workshops, and develop recommendations for Governing Board consideration in the spring of 2009.
- Authorize the Air Pollution Control Officer to develop necessary regulations and instruments for establishment and administration of the San Joaquin Valley Carbon Exchange Bank for voluntary GHG reductions created in the Valley. Begin the requisite public process, including public workshops, and develop recommendations for Governing Board consideration in spring 2009.
- Authorize the Air Pollution Control Officer to enhance the District's existing criteria pollutant emissions inventory reporting system to allow businesses subject to AB 32 emission reporting requirements to submit simultaneous streamlined reports to the District and the State of California with minimal duplication.
- Authorize the Air Pollution Control Officer to develop and administer voluntary GHG emission reduction agreements to mitigate proposed GHG increases from new projects.
- Direct the Air Pollution Control Officer to support climate protection measures that reduce GHG emissions as well as toxic and criteria pollutants. Oppose measures that result in a significant increase in toxic or criteria pollutant emissions in already impacted area.

SJVAPCD CEQA Greenhouse Gas Guidance: On December 17, 2009, the SJVAPCD Governing Board adopted "Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA" and the policy, "District Policy—Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency." The SJVAPCD concluded that the existing science is inadequate to support quantification of the impacts that project specific greenhouse gas emissions have on global climatic change. The SJVAPCD found the effects of project-specific emissions to be cumulative, and without mitigation, that their incremental contribution to global climatic change could be considered cumulatively considerable. The SJVAPCD found that this cumulative impact is best addressed by requiring all projects to reduce their greenhouse gas emissions, whether through project design elements or mitigation.

The SJVAPCD's approach is intended to streamline the process of determining if project-specific greenhouse gas emissions would have a significant effect. Projects exempt from the requirements of CEQA, and projects complying with an approved plan or mitigation program would be determined to have a less than significant cumulative impact. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources and have a certified final CEQA document.

Best performance standards (BPS) to address operational emissions of a project would be established according to performance-based determinations. Projects complying with BPS would not require specific quantification of GHG emissions and would be determined to have a less than significant cumulative impact for GHG emissions. Projects not complying with BPS would require quantification of GHG emissions and demonstration that operational greenhouse gas emissions have been reduced or mitigated by 29 percent, as targeted by CARB's AB 32 Scoping Plan. Furthermore, quantification of GHG emissions would be required for all projects for which the lead agency has determined that an Environmental Impact Report is required, regardless of whether the project incorporates BPS.

APR 2025 – CEQA Determinations of Significance for Projects Subject to CARB's Cap-and Trade Regulation: The purpose of this policy is to provide guidance for the determination of significance for increases of GHG emissions associated with projects that are subject to CARB's cap-and-trade regulation. The SJVAPCD recognizes that the CARB's Cap-and-Trade Regulation is an adopted State-wide plan for reducing or mitigating GHG emissions from targeted industries. GHG emissions addressed by the Cap-and-Trade regulation are subject to an industry-wide cap on overall GHG emissions. As such, any growth in emissions must be accounted for under that cap, such that a corresponding and equivalent reduction in emissions must occur to allow any increase. Further, the cap decreases over time, resulting in an overall decrease in GHG emissions. Therefore, the SJVAPCD concluded that GHG emissions increases subject to CARB's Cap-and-Trade regulation would have a less than significant individual and cumulative impact on global climate change. This policy applies to projects for which the SJVAPCD is the lead agency, but is also useful for evaluation of other CEQA related projects for which the SJVAPCD may not be the lead agency.

Bay Area Air Quality Management District's Thresholds for Significance: Bay Area Air Quality Management District's approach to developing a threshold of significance for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce Statewide GHG emissions. If a project would generate GHG emissions above the threshold level, it would be considered to contribute substantially to a cumulative impact, and would be considered significant. If mitigation can be applied to lessen the emissions such that the project meets its share of emission reductions needed to address the cumulative impact, the project would normally be considered less than significant. Although the proposed Project is not located in the Bay Area, the Bay Area Air Quality Management District's thresholds for significance are based on the Statewide AB 32 objectives and will be used to quantify potential impacts related to GHG emissions. For land use development projects, the threshold is compliance with a qualified GHG Reduction Strategy or annual emissions less than 1,100 metric tons per year (MT/yr) of CO_2e. For stationary source projects, such as those requiring a permit from a local air district to operate, the threshold is 10,000 MT/yr of CO_2e.

Fresno County General Plan: The Fresno County General Plan does not contain any goals or policies related to greenhouse gas or climate change.

3.8.4 Impact Assessment

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

a) Less Than Significant Impact.

Short-Term Construction-Generated Emissions

Estimated construction-generated emissions are summarized in **Table 3-14**. As indicated, construction of the Project would generate maximum annual emissions of approximately 160.6959 metric tons of carbon dioxide equivalent ($MTCO_2e$). Construction-related production of GHGs would be temporary and last approximately nine months.

Table 3-14. Short-Term Construction-Generated GHG Emissions

Short-Term Construction-Generated GHG Emissions	
Year	**Emissions (MT CO_2e)[1]**
2020	160.6959
2021	8.8038
*AB 32 Consistency Threshold for Land-Use Development Projects**	*1,100*
*AB 32 Consistency Threshold for Stationary Source Projects**	*10,000*
Exceed Threshold?	No

1. *Emissions were quantified using the CalEEmod, Version 2016.3.2. Refer to Appendix A for modeling results and assumptions. Totals may not sum due to rounding.*

* As published in the Bay Area Air Quality Management District's CEQA Air Quality Guidelines. Available online at http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en Accessed 12 December 2018.

Long-Term Operational Emissions

Estimated long-term operational emissions are summarized in **Table 3-15**. As indicated, operation of the Project would generate maximum annual emissions of approximately 12.8014 metric tons of carbon dioxide equivalent ($MTCO_2e$).

Table 3-15. Long-Term Operational GHG Emissions

Long-Term Operational GHG Emissions	
	Emissions (MT CO_2e)[1]
Estimated Total Annual Operational CO_2e Emissions	12.8014
*AB 32 Consistency Threshold for Land-Use Development Projects**	*1,100*
*AB 32 Consistency Threshold for Stationary Source Projects**	*10,000*
Exceed Threshold?	No

1. *Emissions were quantified using the CalEEmod, Version 2016.3.2. Refer to Appendix A for modeling results and assumptions. Totals may not sum due to rounding.*

* As published in the Bay Area Air Quality Management District's CEQA Air Quality Guidelines. Available online at http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en Accessed 12 December 2018.

Long-term operational emissions associated with the proposed Project will include the use of the following stationary equipment: electric pumps, a high-efficiency, oil-free air compressor, and an emergency back-up

generator. All equipment will meet current energy-efficiency requirements, and although usage is estimated at less than 100 hours per year, the emergency back-up generator will be permitted through SJVAPCD. Maintenance will continue to be provided on an as needed basis by existing CCSD staff. There will not be an increase in vehicle trips or vehicle miles travelled because the current operational wells are located in the vicinity, along the same route already travelled by existing maintenance staff. The Well No. 7 site is approximately 0.5 mile from the CCSD office. Furthermore, there is no population growth associated with the Project. Therefore, Project-related emissions of GHGs would be less than significant.

VIII-b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

b) Less Than Significant Impact. In accordance with SJVAPCD's recommended guidance, project-generated GHG emissions would be considered less than significant if: (1) the proposed Project complies with applicable BPS; (2) operational GHG emissions would be reduced or mitigated by a minimum of 29 percent in comparison to business-as usual (year 2004) conditions; or (3) project-generated emissions would comply with an approved plan or mitigation program.

The SJVAPCD recognizes that the CARB's Cap-and-Trade regulation is an adopted State-wide plan for reducing or mitigating GHG emissions from targeted industries. In June of 2014, the SJVAPCD issued APR-2025. In this policy document, the SJVAPCD concluded that the combustion of fossil fuels including fuels associated with on- and off-road vehicles, are subject to Cap-and-Trade requirements. The SJVAPCD further concluded that through implementation of the Cap-and-Trade regulation, project specific GHG emissions generated by fossil fuel use would be fully mitigated.

As noted above in **Table 3-14** and **Table 3-15**, Project-generated GHG emissions would be attributable to the consumption of fossil fuels associated with the operation of on- and off-road vehicles. As discussed above, the SJVAPCD has determined that project-generated GHG emissions associated with the use of fossil fuels would be fully mitigated through implementation of CARB's Cap-and-Trade regulation and, therefore, would be considered have a less than significant individual and cumulative impact on the environment.

As discussed earlier in this document, the Cap-and-Trade regulation is a key component in California's AB 32 GHG-reduction goals. On August 21, 2008, the SJVAPCD Governing Board approved the District's Climate Change Action Plan (CCAP). The CCAP includes various recommended measures for the reduction of GHG emissions associated with development projects. However, of the measures recommended, none are applicable to the proposed Project.

The proposed Project complies with the Bay Area Air Quality Management District's GHG emissions thresholds for significance. For the aforementioned reasons, implementation of the proposed Project is not anticipated to conflict with any applicable plan, policy or regulation for reducing the emissions of GHGs, nor will the proposed Project have a significant impact on the environment. The impact would be considered less than significant.

3.9 Hazards and Hazardous Materials

Table 3-16. Hazards and Hazardous Materials Impacts

Hazards and Hazardous Materials					
	Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two 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?	☐	☐	☐	☒
f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g)	Expose people or structures, either directly or indirectly to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

3.9.1 Environmental Setting

3.9.1.1 Hazardous Materials

The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the State, local agencies, and developers to comply with CEQA requirements in providing information about the location of hazardous materials release sites. Government Code (GC) Section 65962.5 requires the California Environmental Protection Agency (CalEPA) to develop at least annually an updated Cortese List. The Department of Toxic Substances Control (DTSC) is responsible for a portion of the information contained in the Cortese List. Other State and local government agencies are required to provide additional hazardous material release information for the Cortese List. DTSC's EnviroStor database provides DTSC's component of Cortese List data (DTSC, 2010). In addition to the EnviroStor database, the State Water Resources Control Board (SWRCB) Geotracker database provides information on regulated hazardous waste facilities in California, including underground storage tank (UST) cases and non-UST cleanup programs, including Spills-Leaks-Investigations-Cleanups (SLIC) sites, Department of Defense (DOD) sites, and Land Disposal

program. A search of the DTSC EnviroStor database and the SWRCB Geotracker performed on October 22, 2018 determined that there are no known active hazardous waste generators or hazardous material spill sites within the Project site or immediate surrounding vicinity.

3.9.1.2 Airports

The Fresno Yosemite International Airport is located approximately 17 miles northeast and a private airstrip is located approximately 3.5 miles southeast of the Project.

3.9.1.3 Emergency Response Plan

The Fresno County Office of Emergency Services coordinates the development and maintenance of the Fresno County Operational area Master Plan.

3.9.1.4 Sensitive Receptors

At its nearest point, Potential Pipeline Alignment No. 2 is located approximately 334 feet northeast of Caruthers Elementary School.

3.9.2 Regulatory Setting

3.9.2.1 Federal

Hazardous Materials - U.S. Environmental Protection Agency: The U.S. Environmental Protection Agency (EPA) was established in 1970 to consolidate in one agency a variety of Federal research, monitoring, standard-setting and enforcement activities to ensure environmental protection. EPA's mission is to protect human health and to safeguard the natural environment — air, water, and land — upon which life depends. EPA works to develop and enforce regulations that implement environmental laws enacted by Congress, is responsible for researching and setting national standards for a variety of environmental programs, and delegates to States and tribes the responsibility for issuing permits and for monitoring and enforcing compliance. Where national standards are not met, EPA can issue sanctions and take other steps to assist the states and tribes in reaching the desired levels of environmental quality.

Toxic Substances Control Act/Resource Conservation and Recovery Act/Hazardous and Solid Waste Act: The Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by the EPA for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the "cradle to grave" system of regulating hazardous wastes.

Clean Water Act/SPCC Rule: The Clean Water Act (CWA) (33 U.S.C. Section 1251, *et seq.*, formerly the Water Pollution Control Act of 1972), was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. As part of the Clean Water Act, the EPA oversees and enforces the Oil Pollution Prevention regulation contained in Title 40 of the CFR, Part 112, which is often referred to as the "SPCC rule" because the regulations describe the requirements for facilities to prepare, amend and implement Spill Prevention, Control, and Countermeasure (SPCC) Plans. A facility is subject to SPCC regulations if a single oil storage tank has a capacity greater than 660 gallons, or the total above ground oil storage capacity exceeds 1,320 gallons, or the underground oil storage capacity exceeds 42,000 gallons, and if, due to its location, the facility could reasonably be expected to discharge oil into or upon the "navigable waters" of the United States. Other federal regulations overseen by the EPA relevant to hazardous materials and environmental contamination include Title 40, CFR, Chapter 1, Subchapter D – Water Programs and Subchapter I – Solid Wastes. Title 40, CFR, Chapter 1, Subchapter D, Parts 116 and 117 designate hazardous substances under the Water Pollution Control Act. Title 40, CFR, Part 116 sets forth a determination of the reportable quantity for each substance that is designated as hazardous. Title 40, CFR, Part 117 applies to quantities of designated substances equal to or greater than the reportable quantities that may be discharged into waters of the United States.

3.9.2.2 State

California Environmental Protection Agency (CalEPA): CalEPA was created in 1991 by Governor's Executive Order. The California Air Resources Board (CARB), the Department of Pesticide Regulation (DPR), the Department of Resources Recycling and Recovery (CalRecycle), the Department of Toxic Substances Control (DTSC), the Office of Environmental Health Hazard Assessment (OEHHA) and the State Water Resources Control Board (SWRCB) were placed under the CalEPA umbrella to create a cabinet-level voice for the protection of human health and the environment and to assure the coordinated deployment of State resources. The mission of CalEPA is to restore, protect, and enhance the environment to ensure public health, environmental quality, and economic vitality under Title 22 of the CCR.[22]

Department of Toxic Substances Control (DTSC): DTSC is a department of CalEPA and is the primary agency in California that regulates hazardous waste, clean-up of existing contamination, and looks for ways to reduce the hazardous waste produced in California. DTSC regulates hazardous waste in California primarily under the authority of RCRA and the Health and Safety Code. Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning. GC Section 65962.5 (commonly referred to as the Cortese List) includes DTSC-listed hazardous waste facilities and sites, SWRCB Division of Drinking Water lists of contaminated drinking water wells, sites listed by the SWRCB as having UST leaks and which have had a discharge of hazardous wastes or materials into the water or groundwater, and lists from local regulatory agencies of sites that have had a known migration of hazardous waste/material.

Unified Program: The Unified Program (CCR Title 27, Division 1, Subdivision 4, Chapter 1, Sections 15100-15620) consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of the following six environmental and emergency response programs[23]:

- Hazardous Waste Generator (HWG) program and Hazardous Waste On-site Treatment activities;
- Aboveground Storage Tank (AST) program Spill Prevention Control and Countermeasure Plan requirements;
- Underground Storage Tank (UST) program;
- Hazardous Materials Release Response Plans and Inventory (HMRRP) program;
- California Accidental Release Prevention (CalARP) program;
- Hazardous Materials Management Plans and Hazardous Materials Inventory Statement (HMMP/HMIS) requirements.

The Secretary of CalEPA is directly responsible for coordinating the administration of the Unified Program. The Unified Program requires all counties to apply to the CalEPA Secretary for the certification of a local unified program agency. Qualified cities are also permitted to apply for certification. The local Certified Unified Program Agency (CUPA) is required to consolidate, coordinate, and make consistent the administrative requirements, permits, fee structures, and inspection and enforcement activities for these six program elements in the county. Most CUPAs have been established as a function of a local environmental health or fire department.

Hazardous Waste Management Program: The Hazardous Waste Management Program (HWMP) regulates hazardous waste through its permitting, enforcement, and Unified Program activities in accordance with HHSC Section 25135, *et seq*. The main focus of HWMP is to ensure the safe storage, treatment, transportation, and disposal of hazardous wastes.

[22] California Environmental Protection Agency. http://www.calepa.ca.gov Accessed 22 October 2018.
[23] California Environmental Protection Agency. http://www.calepa.ca.gov/cupa/ Accessed 22 October 2018

State Water Resources Control Board (SWRCB): The SWRCB was created by the California legislature in 1967. The mission of SWRCB is to ensure the highest reasonable quality for waters of the State, while allocating those waters to achieve the optimum balance of beneficial uses. The joint authority of water allocation and water quality protection enables SWRCB to provide comprehensive protection for California's waters.

California Department of Industrial Relations – Division of Occupational Safety and Health (Cal/OSHA): In California, every employer has a legal obligation to provide and maintain a safe and healthful workplace for employees, according to the California Occupational Safety and Health Act of 1973 (per Title 8 of the CCR). The Division of Occupational Safety and Health (Cal/OSHA) program is responsible for enforcing California laws and regulations pertaining to workplace safety and health and for providing assistance to employers and workers about workplace safety and health issues. Cal/OSHA regulations are administered through Title 8 of the CCR. The regulations require all manufacturers or importers to assess the hazards of substances that they produce or import and all employers to provide information to their employees about the hazardous substances to which they may be exposed.

3.9.2.3 Local

Fresno County General Plan[24]: The Fresno County General Plan sets forth the following policies regarding hazards and hazardous materials and which have potential relevance to the Project's CEQA review:

Goal HS-A: To protect public health and safety by preparing for, responding to, and recovering from the effects of natural or technological disasters.

Policy HS-A.1: The County shall, through the Fresno County Operational Area Master Emergency Services Plan, maintain the capability to effectively respond to emergency incidents, including maintenance of an emergency operations center.

Goal HS-F: To minimize the risk of loss of life, injury, serious illness, and damage to property resulting from the use, transport, treatment, and disposal of hazardous materials and hazardous wastes.

Policy HS-F.3: The County, through its Hazardous Materials Incident Response Plan, shall coordinate and cooperate with emergency response agencies to ensure adequate countywide response to hazardous materials incidents.

3.9.3 Impact Assessment

IX-a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? and;

IX -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?

IX -c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

a-c) Less Than Significant Impact. At its nearest point, the Project area is located approximately 334 feet northeast of Caruthers Elementary School. Implementation of the Project would correct existing water quality issues affecting the community of Caruthers. Construction of the Project will involve the use of hazardous materials associated with construction equipment, such as diesel fuel, lubricants, and solvents. However, the contractor will implement a SWPPP and will comply with all Cal/OSHA regulations regarding

[24] Fresno County General Plan. https://www.co.fresno.ca.us/departments/public-works-planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/general-plan-maps Accessed 22 October 2018.

regular maintenance and inspection of equipment, spill prevention, and spill remediation in order to reduce the potential for incidental release of pollutants or hazardous substances onsite. Furthermore, any potential accidental hazardous materials spills during construction are the responsibility of the contractor to remediate in accordance with industry best management practices and State and county regulations. The operational phase of the Project will involve the use of chlorine, which is required for sanitation of drinking water. Storage, handling, and distribution of chlorine will be monitored and comply will all regulations set forth by DDW and County of Fresno. Impacts will be less than significant.

IX -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?

d) No Impact. The Project does not involve land that is listed as a hazardous materials site pursuant to Government Code Section 65962.5 and is not included on a list compiled by the Department of Toxic Substances Control. A search of the DTSC EnviroStor database and the SWRCB Geotracker performed on October 22, 2018 determined that there are no known active hazardous waste generators or hazardous material spill sites within the Project site or immediate surrounding vicinity. There will be no impact.

IX -e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two 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?; and,

e) No Impact. The Project is not located within an airport land use plan or within two miles of an airport. The Fresno Yosemite International Airport is located approximately 17 miles northeast and a private airstrip is located approximately 3.5 miles southeast of the Project. Construction of a new well and implementation of associated water system improvements would not be a safety hazard for people working in the area. Operation of the well site would not generate excessive noise, and any construction noise would be temporary. There would be no impact.

IX -f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

f) Less Than Significant Impact. The Project includes the construction and operation of a new well, water distribution infrastructure, and a stormwater drainage basin. Construction traffic associated with the Project would be minimal and temporary, lasting approximately nine months. Operational traffic will consist of as-needed maintenance trips and will have no effect on roadways or emergency access. Road closures and detours are not anticipated as part of the construction phase of the Project; however, if the Project implements Potential Pipeline Alignment No. 1, temporary lane diversions may be necessary for placement of the pipeline along Henderson Road. Disturbances to traffic patterns, such as a potential lane diversion will be temporary and minimal in nature, as there will be alternate routes available. Therefore, Project-related impacts to emergency evacuation routes or emergency response routes on local roadways would be considered less than significant.

IX -g) Expose people or structures, either directly or indirectly to a significant risk of loss, injury or death involving wildland fires?

g) No Impact. The nearest wildland, which has a moderate fire risk, according to Cal Fire[25] is located approximately 25 miles northeast of the Project site. The Project does not include any residential components, nor would it require any employees to be stationed permanently at the site on a daily basis. There would be no impact.

[25] Cal Fire. Fresno County FHSZ Map. http://www.fire.ca.gov/fire_prevention/fhsz_maps_fresno Accessed 17 December 2018.

3.10 Hydrology and Water Quality

Table 3-17. Hydrology and Water Quality Impacts

Hydrology and Water Quality					
	Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☐	☒
b)	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
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:				
	i) result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
	ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or offsite;	☐	☐	☒	☐
	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	☐	☐	☒	☐
iv)	impede or redirect flood flows?	☐	☐	☒	☐
d)	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e)	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

3.10.1 Environmental Setting

The Project is located in the southern part of Fresno County in the Central San Joaquin Valley, part of the Great Valley of California. The Valley is bordered by the Sierra Nevada Mountain Ranges to the east, the Coast Ranges to the west, the Klamath Mountains and Cascade Range to the north, and the Transverse Ranges and Mojave Desert to the south.

Like most of California, the San Joaquin Valley experiences a Mediterranean climate. Warm, dry summers are followed by cool, moist winters. Summer temperatures often reach above 90 degrees Fahrenheit, and the humidity is generally low. Winter temperatures are often below 60 degrees Fahrenheit during the day and rarely exceed 70 degrees. The Central Valley receives an average of 12 inches of precipitation in the form of rainfall yearly, most of which occurs between October and March.

According to the U.S. Geological Survey (USGS) classification system, the Project is located within the Tulare-Buena Vista Lakes watershed; Hydrologic Unit Code (HUC): 18030012.[26] This watershed is broadly defined as "the drainage into the Tulare and Buena Vista Lake closed basins.[27]"

The Project lies entirely within the Kings Groundwater Subbasin of the San Joaquin Valley Groundwater Basin.[28] The principal drainage in the vicinity of the Project is the channelized irrigation canal, Harlan Stevens Ditch, which flows approximately 0.7 mile north-northeast of the site through surrounding agricultural lands. There are no tributaries, or distributaries located within the site boundaries or adjacent to the site.

3.10.2 Regulatory Setting

3.10.2.1 Federal

Clean Water Act: The Clean Water Act (CWA) is intended to restore and maintain the chemical, physical, and biological integrity of the nation's waters (33 CFR 1251). The regulations implementing the CWA protect waters of the U.S. including streams and wetlands (33 CFR 328.3). The CWA requires States to set standards to protect, maintain, and restore water quality by regulating point source and some non-point source discharges. Under Section 402 of the CWA, the National Pollutant Discharge Elimination System (NPDES) permit process was established to regulate these discharges.

Federal Emergency Management Agency (FEMA) Flood Zones: The National Flood Insurance Act (1968) makes available federally-subsidized flood insurance to owners of flood-prone properties. To facilitate identifying areas with flood potential, FEMA has developed Flood Insurance Rate Maps (FIRM) that can be used for planning purposes. Flood hazard areas identified on the Flood Insurance Rate Map are identified as a Special Flood Hazard Area (SFHA). SFHA are defined as the area that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. The 1-percent annual chance flood is also referred to as the base flood or 100-year flood. SFHAs are labeled as Zone A, Zone AO, Zone AH, Zones A1-A30, Zone AE, Zone A99, Zone AR, Zone AR/AE, Zone AR/AO, Zone AR/A1-A30, Zone AR/A, Zone V, Zone VE, and Zones V1-V30. Moderate flood hazard areas, labeled Zone B or Zone X (shaded) are also shown on the FIRM, and are the areas between the limits of the base flood and the 0.2-percent-annual-chance (or 500-year) flood. The areas of minimal flood hazard, which are the areas outside the SFHA and higher than the elevation of the 0.2-percent-annual-chance flood, are labeled Zone C or Zone X (un-shaded).

3.10.2.2 State

State Water Resources Control Board: The SWRCB has jurisdiction over water quality issues in California. The SWRCB is governed by the Porter-Cologne Water Quality Act (Division 7 of the Water Code (WC)), which establishes the legal framework for water quality control activities by the SWRCB. The intent of the Porter-Cologne Act is to regulate factors which may affect the quality of waters of the State to attain the highest quality which is reasonable, considering a full range of demands and values. Much of the implementation of the SWRCB's responsibilities is delegated to its nine Regional Boards. The Project site is located within the Central Valley Regional Water Quality Control Board (CVRWQCB). The CVRWQCB administers the NPDES storm water-permitting program in the Central Valley region. Construction activities on one acre or more are subject to the permitting requirements of the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit). Additionally, CVRWQCB is responsible for issuing Waste Discharge Requirements Orders under WC Section 13260, Article 4, Waste Discharge Requirements.

For projects proposing ground disturbance of one acre or greater, the SWRCB requires a Storm Water Pollution Prevention Plan (SWPPP) as a requirement of the NPDES to regulate water quality associated with construction or industrial activities.

[26] USGS Watershed Maps. https://water.usgs.gov/maps.html Accessed 12 October 2018.
[27] Ibid.
[28] DWR Bulletin 118 Groundwater Basin Boundary Assessment Tool. https://gis.water.ca.gov/app/bbat/ Accessed 12 October 2018.

Recycled Water Policy: The Water Recycling Act of 1991 (WC Section 1357,5 *et seq.*) established a Statewide goal to recycle a total of 700,000 acre-feet of water per year (AFY) by the year 2000 and 1,000,000 AFY by the year 2010. In February 2009, the SWRCB adopted its Recycled Water Policy (SWRCB Resolution No. 2009-0011), the purpose of which is to increase the beneficial use of recycled water from municipal wastewater sources in a manner that fully implements State and Federal water quality laws. The policy directs the State to rely less on variable annual precipitation and more on sustainable management of surface waters and groundwater, together with enhanced water conservation, water reuse and the use of stormwater. As a part of the new recycled water policy, the SWRCB adopted the following four goals for California:

1. *Increase the use of recycled water over 2002 levels by at least one million AFY by 2020 and by at least two million AFY by 2030.*
2. *Increase the use of stormwater over use in 2007 by at least 500,000 AFY by 2020 and by at least one million AFY by 2030.*
3. *Increase the amount of water conserved in urban and industrial uses by comparison to 2007 by at least 20 percent by 2020.*
4. *Included in these goals is the substitution of as much recycled water for potable water as possible by 2030.*

In the new policy, the SWRCB also discussed several practical impacts of the greater use of recycled water in the State. Those impacts include the following:

- Groundwater salt and nutrient control: The SWRCB imposed a requirement that consistent salt and nutrient management plans be prepared for each basin and subbasin in California. Such plans must include a significant stormwater use and recharge component.
- Landscape irrigation: The SWRCB discussed issues involving the permitting of landscape irrigation projects that use recycled water, including the control of incidental runoff of recycled water.
- Groundwater recharge: The SWRCB addressed site-specific approvals of groundwater recharge projects using recycled water, emphasizing that such projects must not lower the water quality within a groundwater basin.
- Chemicals of emerging concern: The SWRCB further addressed chemicals of emerging concern (CEC), knowledge of which is currently "incomplete." An advisory panel will advise the Water Board regarding actions involving CECs, as they relate to the use of recycled water.

The wide-ranging ramifications of using recycled water, coupled with the aggressive goals established by the SWRCB for such future use in California, demonstrates that the new Recycled Water Policy will have a significant impact on land use activities within the State for many years to come.

Department of Water Resources (DWR): WC Section 10004, *et seq.* requires that DWR update the State Water Plan every five years. The Plan is currently undergoing its 2018 update; the most recent adopted version is from 2013.

For Update 2013, DWR worked with researchers at the University of California, Davis, to quantify how much growth might occur in the Tulare Lake Hydrologic Region through 2050. The model was used to estimate a year 2050 urban footprint under the scenarios of alternative population growth and development density. Each of the growth scenarios shows a decline in irrigated acreage over existing conditions, but to varying degrees. Irrigated crop acreage declines, on average, by about 90 thousand acres by year 2050 as a result of low population growth and urbanization in Tulare Lake region, while the decline under high population growth was higher by about 200 thousand acres. The change in water demand from 2006 to 2050 is estimated for the Tulare Lake Hydrologic Region for the agriculture and urban sectors under nine growth scenarios and 13 scenarios of future climate change. Urban demand increased under all nine growth scenarios tracking with population growth. Agricultural water demand decreases under all future scenarios due to reduction in irrigated lands as a result of urbanization and background water conservation. Groundwater resources were evaluated for performance under the plausible futures, resulting in 198 scenarios showing the change in groundwater storage

from 2013 to 2050. About 95 percent of the futures lead to groundwater declines in the Tulare Lake Hydrologic Region and about 50 percent of the futures lead to declines greater than 10 percent.[29]

Government Code 65302 (d): A conservation element for the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soils, river and other waters, harbors, fisheries, wildlife, minerals, and other natural resources. That portion of the conservation element including waters shall be developed in coordination with any County-wide water agency and with all district and city agencies which have developed, served, controlled or conserved water for any purpose for the County or city for which the plan is prepared. Coordination shall include the discussion and evaluation of any water supply and demand information described in Section 65352.5, if that information has been submitted by the water agency to the city or County. The conservation element may also cover:

1. The reclamation of land and waters.
2. Prevention and control of the pollution of streams and other waters.
3. Regulation of the use of land in stream channels and other areas required for the accomplishment of the conservation plan.
4. Prevention, control, and correction of the erosion of soils, beaches, and shores.
5. Protection of watersheds.
6. The location, quantity and quality of the rock, sand and gravel resources.
7. Flood control.

Sustainable Groundwater Management Act: On September 16, 2014 Governor Edmund G. Brown, Jr. signed historic legislation to strengthen local management and monitoring of groundwater basins most critical to the State's water needs. The three bills, SB 1168 (Pavley), SB 1319 (Pavley), and AB 1739 (Dickinson) together makeup the Sustainable Groundwater Management Act (SGMA). SGMA comprehensively reforms groundwater management in California. The intent of the Act is to place management at the local level, although the State may intervene to manage basins when local agencies fail to take appropriate responsibility. The Act provides authority for local agency management of groundwater and requires creation of groundwater sustainability agencies and implementation of plans to achieve groundwater sustainability within basins of high and medium-priority including the Tulare County Sub-basin. The Act took effect on January 1, 2015 and will be implemented over the course of next several years and decades.

3.10.2.3 Local

Fresno County General Plan[30]: The Fresno County General Plan sets forth the following policies regarding hydrology and water quality and which have potential relevance to the Project's CEQA review:

Policy ED-A.19: The County shall actively develop, adopt, and implement measures to ensure an adequate water supply for municipal and industrial use and agricultural production. The County shall explore and implement where feasible innovative new arrangements for providing additional water.

Policy LU-A.20: The County shall adopt and support policies and programs that seek to protect and enhance surface water and groundwater resources critical to agriculture.

Goal PF-C: To ensure the availability of an adequate and safe water supply for domestic and agricultural consumption.

Policy PF-C.1: The County shall actively engage in efforts and support the efforts of others to retain existing water supplies within Fresno County.

[29] DWR California Water Plan. https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/California-Water-Plan/Docs/Update2013/Regional-Reports/Water-Plan-Update-2013-Tulare-Lake-Regional-Report.pdf Accessed 13 September 2018.

[30] Fresno County General Plan. https://www.co.fresno.ca.us/departments/public-works-planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/general-plan-maps Accessed 22 October 2018.

Policy PF-C.11: The County shall assure an on-going water supply to help sustain agriculture and accommodate future growth by allocation of resources necessary to carry out the water resource management programs.

Policy PF-C.13: In those areas identified as having severe groundwater level declines or limited groundwater availability, the County shall limit development to uses that do not have high water usage or that can be served by a surface water supply.

Policy PF-C.14: The County shall require that water supplies serving new development meet US Environmental Protection Agency and California Department of Health Services and other water quality and quantity standards.

Policy PF-C.19: The County shall discourage the proliferation of small community water systems.

Policy PF-C.23: The County shall regulate the transfer of groundwater for use outside of Fresno County. The regulation shall extend to the substitution of groundwater for transferred surface water.

Policy PF-C.24: The County shall encourage the transfer of unused or surplus agricultural water to urban uses within Fresno County.

3.10.3 Impact Assessment

X-a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

a) No Impact. The water currently supplied from the existing wells (No. 5 and No. 6) does not meet the primary drinking water standards for arsenic levels. Additionally, there have been concerns regarding TCP in Wells No. 3 and No. 5, and Well No. 3 has been placed on stand-by due to an exceedance of EDB levels. The District is finalizing plans to construct a treatment facility at the site of Well No. 6 and will be able to provide consolidated arsenic treatment for both Wells No. 5 and No. 6 due to a recently developed pipeline which connects them. The proposed Project will include a new groundwater supply well (Well No. 7), and a transmission main from Well No. 7 to the Well No. 6 site for the purposes of blending or treatment. Implementation of the Project would correct water quality issues historically experienced by the community of Caruthers by creating a long-term and reliable source of safe drinking water. Neither the construction phase nor the operational phase of the Project proposes waste discharge and therefore regulations regarding waste discharge requirements have no relevance to this Project or its CEQA review. There will be no impact.

X -b) Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project would impede sustainable groundwater management of the basin?

b) Less Than Significant Impact. A test well was drilled and sampled at the proposed site of Well No. 7 in May-June 2018, and the corresponding technical report revealed that Well No. 7, as planned, should yield between 750 and 1,000 gallons per minute. Groundwater of adequate quantity and quality is present beneath the site of Well No. 7. Well No. 7 will replace Well No. 3, which will remain inactive. There is no anticipated increase in water demand resulting from implementation of the Project. It will not interfere substantially with groundwater recharge, nor would the Project interfere substantially with the production rate of pre-existing nearby wells. The new well site and pumping rate were designed to not interfere with the drawdown of nearby wells. Therefore, implementation of the Project will not impede sustainable groundwater management of the San Joaquin Valley Kings subbasin, nor will it substantially decrease ground water supplies. Any impacts will be less than significant.

X -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;

(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or offsite;

(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

(iv) impede or redirect flood flows?

X -d) Would the project in flood hazard, tsumani, or seiche zones, risk release of pollutants due to project inundation?

c-d) Less Than Significant Impact. There are no streams or rivers onsite or in the immediate vicinity. The Project does not propose significant alteration of the topography of the site. In addition to constructing a well, hydropneumatic tank, and associated infrastructure, the Project proposes calculated grading and development of a storm drainage basin to prevent storm runoff from pooling around the equipment. The stormwater basin has been designed to adequately attenuate peak stormwater runoff discharge, and a site-specific grading plan has been prepared indicating that no drainage shall be onto adjacent properties. In order to minimize erosion and run-off during construction activities, a SWPPP will be implemented, and the contractor will comply with all Cal/OSHA regulations regarding regular maintenance and inspection of equipment, spill prevention, and spill remediation in order to reduce the potential for incidental release of pollutants or hazardous substances onsite. Impacts will be less than significant.

X -e) Otherwise substantially degrade water quality?

e) No Impact. As discussed above in Impact Assessments IX-a and IX-c(iii), implementation of the Project would correct water quality issues affecting the community of Caruthers. Furthermore, construction activities will require implementation of a SWPPP and compliance with all Cal/OSHA regulations in order to reduce the potential for incidental release of pollutants or hazardous substances into surface water or groundwater. There will be no impact.

X-f) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

f) No Impact. The proposed Project is intended to provide clean drinking water to the residence of Caruthers. The Project will not conflict with or obstruct implementation of any water quality control plan or sustainable groundwater management plan.

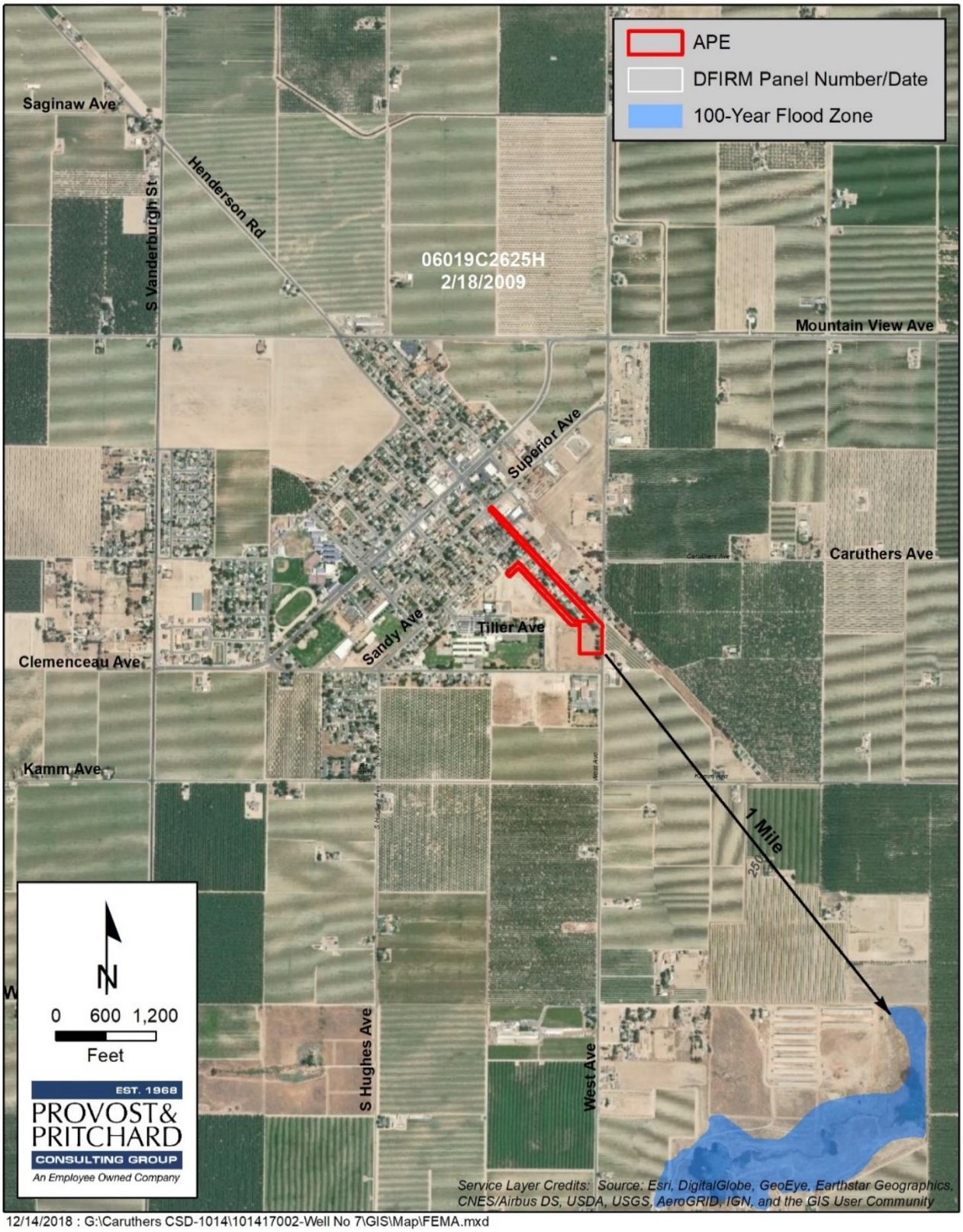


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Figure 3-2. FEMA Map

3.11 Land Use and Planning

Table 3-18. Land Use and Planning Impacts

Land Use and Planning					
	Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☒	☐

3.11.1 Environmental Setting

The Project is located within the unincorporated community of Caruthers in southern Fresno County. The site of Well No. 7 is located approximately 2.3 miles west of State Route 41 and more specifically, on the southwest corner of Henderson Road and South West Avenue. The Project area is surrounded by agricultural lands, ruderal vacant lots, and residential, commercial, and industrial development.

The Well No. 7 site and Potential Pipeline Alignment No. 2 are located within vacant land zoned AL-20, Limited Agricultural, by Fresno County. The Caruthers Community Plan Land Use Map designates this area as Public Facilities reserved for expansion of the adjacent Elementary School. Potential Pipeline Alignment No. 1 would be located along collector street, Henderson Road and associated public right-of-way. Henderson Road lies adjacent to parcels zoned R-1, Single Family Residential, R-2, Low-Density Multiple Family Residential, M-1, Light Industrial, and C-M, Commercial/ Light Manufacturing. The Caruthers Community Plan Land Use Map designates these properties adjacent to Henderson Road as Medium Density Residential, Low Density Residential, Limited Industrial, and Central Business Commercial. Zone Districts and General Plan Land Use Designations are illustrated in **Figure 2-4** and **Figure 2-5**, respectively.

3.11.2 Regulatory Setting

3.11.2.1 Federal

There are no federal regulations, plans, programs, or guidelines associated with land use and planning that are applicable to the proposed Project.

3.11.2.2 State

There are no State regulations, plans, programs, or guidelines associated with land use and planning that are applicable to the proposed Project.

3.11.2.3 Local

Fresno County General Plan[31]: The Fresno County General Plan sets forth the following policies regarding land use and planning and which have potential relevance to the Project's CEQA review:

Policy LU-G.23: The County shall ensure that the expansion of unincorporated communities can be provided with necessary public services and such expansion is consistent with other General Plan policies.

3.11.3 Impact Assessment

XI-a) Would the project physically divide an established community?

a) No Impact. The site of Well No. 7 is located on a vacant lot that has been planned for public facilities, more specifically, the expansion of the adjacent Caruthers Elementary School. As illustrated in **Figure 2-4** and **Figure 2-5**, the Project site is on the southeast border of the urban development area in a region dominated by agriculture. The Project does not include the permanent alteration of roads, trails, or paths that could be considered a connectivity network. Implementation of the Project will not divide an established community. There would be no impact.

XI-b) Would the project cause a significant environmental conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

b) Less Than Significant Impact. As illustrated in **Figure 2-4**, the Well No. 7 site and Potential Pipeline Alignment No. 2 are located within vacant land zoned AL-20, Limited Agricultural, by Fresno County. The Caruthers Community Plan Land Use Map (**Figure 2-5**) designates this area as Public Facilities reserved for expansion of the adjacent Elementary School. Although the property is zoned for limited agricultural use, it has not been used for agriculture since the development of Caruthers Elementary School. Additionally, the Caruthers Community Plan of the Fresno County General Plan lists Public Facilities as an acceptable use for properties within the AL-20 zone district. Caruthers Elementary School has no plans for expansion onto the adjacent parcel and has subsequently granted Caruthers Community Services District their request for acquisition of the land for the development of Well No. 7 and associated infrastructure. The purpose of Well No. 7 is to supply drinking water to the public within the community of Caruthers. As such, Well No. 7 would be considered a public facility and therefore would be consistent with all applicable plans, policies, ordinances, and regulations. Any impact would be less than significant.

[31] Fresno County General Plan. https://www.co.fresno.ca.us/departments/public-works-planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/general-plan-maps Accessed 22 October 2018.

3.12 Mineral Resources

Table 3-19. Mineral Resources Impacts

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

3.12.1 Environmental Setting

The Project is located in southern Fresno County, in the southern section of California's Great Valley Geomorphic Province, or Central Valley. Historically, Fresno County has been a leading producer of a variety of minerals including aggregate, fossil fuels, metals, and other materials used construction or in industrial processes. Currently, aggregate and petroleum are the County's most significant mineral resources. The Coalinga area, in western Fresno County, has been a valuable region for mineral resources as a top producer of commercial asbestos and home to extensive oil recovery operations.[32]

The community of Caruthers is located within the Fresno production-consumption (PC) region, which includes parts of Madera and Fresno Counties. The California Geological Survey (CGS), previously known as California Department of Conservation Division of Mines and Geology (DMG), has analyzed this region for the presence of aggregate resources in a 1988 mineral land classification report[33] and a subsequent 1999 update[34]. In each of these reports CGS has classified the Fresno PC region according to the presence or absence of significant aggregate deposits. The land classification is presented in the form of Mineral Resource Zones (MRZs). MRZ-1 represents areas where information indicates that there are no significant aggregate deposits. MRZ-2 represents areas where adequate information indicates that significant aggregate deposits ae present or where it is judged that a high likelihood exists for their presence. MRZ-3 represents areas containing mineral deposits the significance of which cannot be evaluated from available data. In both CGS reports, the Caruthers area is classified as MRZ-3. All areas known to contain significant aggregate deposits within the Fresno PC region are located along the Kings River floodplain and along the San Joaquin River.

There are no known current or historic mineral resource extraction or recovery operations in the Project vicinity nor are there any known significant mineral resources onsite.

[32] Fresno County General Plan. Background Report. https://www.co.fresno.ca.us/home/showdocument?id=8398 Accessed 18 December 2018.
[33] Special Report 158. Mineral Land Classification: Aggregate Materials in the Fresno Production-Consumption Region. 1988. https://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=mlc Accessed 18 December 2018.
[34] Open File Report 99-02. Update of Mineral Land Classification: Aggregate Materials in the Fresno Production-Consumption Region, California. 1999. https://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=mlc Accessed 18 December 2018.

3.12.2 Regulatory Setting

3.12.2.1 Federal

There are no federal regulations, plans, programs, or guidelines associated with mineral resources that are applicable to the proposed Project.

3.12.2.2 State

There are no State regulations, plans, programs, or guidelines associated with mineral resources that are applicable to the proposed Project.

3.12.2.3 Local

There are no local regulations, plans, programs, or guidelines associated with mineral resources that are applicable to the proposed Project.

3.12.3 Impact Assessment

XII-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?

XII-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?

a) and b) No Impact. According to the CGS's Aggregate Sustainability Map,[35] the Project is not within the vicinity of a site being used for aggregate production. The nearest aggregate production site is the Carmelita Mine located within the Kings River floodplain, approximately 24 miles northeast of the Project. In addition, California's Division of Oil, Gas and Geothermal Resources has no record of active or inactive oil or gas wells or petroleum resources on the Project site or in the vicinity[36]. The Project lies within a large region that has been classified by CGS as MRZ-3, representing an area containing mineral deposits the significance of which cannot be evaluated from available data. However, there are no known current or historic mineral resource extraction or recovery operations in the Project vicinity nor are there any known significant mineral resources onsite. Therefore, implementation of the Project would not result in the loss of availability of a known mineral resource since no known mineral resources occur in this area. Furthermore, the Project area has not been designated as a locally important mineral resource recovery site by a general plan, specific plan, or land use plan. There would be no impact.

[35] Map Sheet 52. CGS. Aggregate Sustainability Map. https://www.conservation.ca.gov/cgs/Documents/Publications/MS_052_California_Aggregates_Map_201807.pdf Accessed 18 December 2018.
[36] DOGGR Map of Oil and Gas Wells. https://maps.conservation.ca.gov/doggr/wellfinder/#openModal/-119.80553/36.52896/13 Accessed 18 December 2018.

3.13 Noise

Table 3-20. Noise Impacts

Noise					
	Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☒	☐
b)	Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
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 two 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?	☐	☐	☐	☒

3.13.1 Environmental Setting

Caruthers is a rural unincorporated community in southern Fresno County, dominated by agricultural production. State Route 41 is the nearest highway, which is approximately 2.3 miles east of the Project site. The Project area is surrounded by agricultural lands, vacant lots, and residential, commercial, and industrial development. There is a small frontage road west of the well site, and beyond that is an elementary school. To the east, beyond South West Avenue, are rural farmhouses and vineyards. Residential development is present to the north, and a Sikh Temple is present to the south, across West Clemenceau Avenue. The Fresno Yosemite International Airport is located approximately 17 miles northeast and a private airstrip is located approximately 3.5 miles southeast of the Project.

3.13.2 Regulatory Setting

3.13.2.1 Federal

There are no federal regulations, plans, programs, or guidelines associated with noise that are applicable to the proposed Project.

3.13.2.2 State

California Building Standards Code: The California Code of Regulations (CCR) Title 24 is assigned to the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. The California Building Code incorporates by reference the International Building Code with necessary California amendments. The International Building Code is a widely-adopted model building code in the United States published by the International Code Council.

3.13.2.3 Local

Fresno County General Plan[37]: The Fresno County General Plan sets forth the following policies regarding noise and which have potential relevance to the Project's CEQA review:

Policy HS-G.1: The County shall require that all proposed development incorporate design elements necessary to minimize adverse noise impacts on surrounding land uses.

Policy HS-G.6: The County shall regulate construction-related noise to reduce impacts on adjacent uses in accordance with the County's Noise Control Ordinance.

Fresno County Noise Control Ordinance[38]: Chapter 8.40 of the Fresno County Municipal Code contains the Noise Control Ordinance, which places limits on noise levels and hours of construction. Section 8.40.060 states that noise sources associated with construction activities are exempt from the provisions of the Noise Control Ordinance, as long as construction does not take place before 6:00 a.m. or after 9:00 p.m. on any day except Saturday or Sunday, or before 7:00 a.m. or after 5:00 p.m. on Saturday or Sunday.

3.13.3 Impact Assessment

XIII-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?

a) Less Than Significant Impact. The construction phase of the Project will involve temporary noise sources, originating predominately from off-road equipment, such as backhoes, drilling rigs, scrapers, and tractors. The Project is located adjacent to agricultural lands, accustomed to noises associated with farm equipment. The Project will comply with the Fresno County Noise Control Ordinance. Operational maintenance activities would be on an as-needed basis with routine monitoring performed by existing staff and would not generate significant new noise. Any impacts would be mild and temporary and therefore, less than significant.

XIII-b) Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

b) Less Than Significant Impact. The construction phase of the Project will have excavation and grading as part of development of the new well and associated infrastructure.

The Project is located adjacent to an area dominated by agricultural production, which includes the use of off-road equipment and ground-disturbing activities on a regular basis. Conditions created by Project-related construction activities would not vary substantially from the baseline conditions routinely experienced onsite. Impacts would be less than significant.

XIII-c) For a project located within the vicinity of a private air strip or an airport land use plan or, where such a plan has not been adopted, within two 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? and,

c) No Impact. The Project is not located within an airport land use plan or within two miles of an airport. The Fresno Yosemite International Airport is located approximately 17 miles northeast and a private airstrip is located approximately 3.5 miles southeast of the Project. Furthermore, the Project does not involve the

[37] Fresno County General Plan. https://www.co.fresno.ca.us/departments/public-works-planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/general-plan-maps Accessed 22 October 2018.
[38] Fresno County Noise Control Ordinance. https://library.municode.com/ca/fresno_county/codes/code_of_ordinances?nodeId=TIT8HESA_CH8.40NOCO Accessed 16 November 2018.

development of habitable structures or require the presence of permanent staff onsite. There would be no impact.

3.14 Population and Housing

Table 3-21. Population and Housing Impacts

Population and Housing					
	Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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)?	☐	☐	☐	☒
b)	Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

3.14.1 Environmental Setting

The Project is located within the unincorporated community of Caruthers in southern Fresno County. The Project area is surrounded by agricultural lands, ruderal vacant lots, and residential, commercial, and industrial development. The Well No. 7 site and Potential Pipeline Alignment No. 2 are located within vacant land zoned AL-20, Limited Agricultural, by Fresno County. The Caruthers Community Plan Land Use Map designates this area as Public Facilities reserved for expansion of the adjacent Elementary School. Potential Pipeline Alignment No. 1 would be located along collector street, Henderson Road and associated public right-of-way.

According to 2010 Census data, Fresno County's population was 930,450 with an estimated percent change from 2010 to 2017 of 6.3%. As of 2013 to 2017, there was an average of 301,824 households with an average of 3.16 persons per house.[39]

3.14.2 Regulatory Setting

3.14.2.1 Federal

There are no federal regulations, plans, programs, or guidelines associated with population or housing that are applicable to the proposed Project.

3.14.2.2 State

There are no State regulations, plans, programs, or guidelines associated with population or housing that are applicable to the proposed Project.

3.14.2.3 Local

There are no local regulations, plans, programs, or guidelines associated with population and housing that are applicable to the proposed Project.

[39] U.S. Census Data. https://www.census.gov/quickfacts/fact/table/fresnocountycalifornia/PST045217 Accessed 18 December 2018.

3.14.3 Impact Assessment

XIV-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)?

XIV-b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

a-b) No Impact. The proposed Project involves construction of a new well, infrastructure, and a stormwater basin. The goal of the Project is not to induce population growth, but rather to provide potable drinking water and adequate fire flows for the community of Caruthers over the next 20 years The Project would not encourage population growth directly or indirectly beyond that previously analyzed by the Fresno County General Plan. No housing or habitable structures would be built, nor will any be removed. Implementation of the Project will not result in displacement of people or existing housing. Therefore, there will be no impact.

3.15 Public Services

Table 3-22. Public Services Impacts

Public Services					
	Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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:				
	Fire protection?	☐	☐	☐	☒
	Police protection?	☐	☐	☐	☒
	Schools?	☐	☐	☐	☒
	Parks?	☐	☐	☐	☒
	Other public facilities?	☐	☐	☐	☒

3.15.1 Environmental Setting

Fire Protection: The proposed Project area would be served by the Fresno County Fire Protection District, Battalion 15, Station 90 located approximately 0.5 miles west of the Project site.

Police Protection: Police protection is provided by the Fresno County Sheriff. The closest patrol station is located in Fresno approximately 13.7 miles north of the Project site.

Schools: Public school services are provided throughout Fresno County by 33 school districts, one of which is Caruthers Unified School District. Caruthers Unified School District serves a rural area of approximately 120 square miles, including the two small unincorporated communities of Caruthers and Raisin City. The school district includes Caruthers Elementary School, Caruthers High School, and MARC High School. The Well No. 7 site is located adjacent to the Caruthers Elementary School campus. Additionally, Caruthers High School and MARC High School are both located within 0.5 mile.

Parks: Fresno County has several regional parks, as well as State and national parks, national forest, wilderness areas, and ecological reserves. Regional recreational facilities within the County include 12 parks, 4 fishing access areas, and boating facility. Laton-Kingston Park is the nearest regional park, located approximately 10.5 miles southeast of the Project site.

Landfills: The community of Caruthers is served by American Avenue Landfill which is located approximately 19 miles northwest of the Project site [40].

[40] The County of Fresno website. https://www.co.fresno.ca.us/departments/public-works-planning/divisions-of-public-works-and-planning/resources-and-parks-division/landfill-operations. Accessed December 2018.

3.15.2 Regulatory Setting

3.15.2.1 Federal

There are no federal regulations, plans, programs, or guidelines associated with public services that are applicable to the proposed Project.

3.15.2.2 State

There are no State regulations, plans, programs, or guidelines associated with public services that are applicable to the proposed Project.

3.15.2.3 Local

There are no local regulations, plans, programs, or guidelines associated with public services that are applicable to the proposed Project.

3.15.3 Impact Assessment

XV-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:

a) No Impact. The proposed Project would not require the addition or alteration of any public services. The site is within southern Fresno County and would utilize existing services provided by the County. There would be no impact.

Fire Protection – The Project area would continue to be served by the Fresno County Fire Protection District, Battalion 15, Station 90 located approximately 0.5 miles west of the Project site. The Project vicinity is equipped with fire hydrants. According to Uniform Fire Code, a supply of 1,000 gallons per minute for a 2-hour duration meets the minimum fire protection flow requirement. Well No. 7, as planned, should yield between 750 and 1,000 gallons per minute. Combined with the existing water supply from Well No. 5 and Well No. 6, which have a total pumping capacity of 2,100 gallons per minute, the improved system's supply will exceed the current maximum day demand of 1,008 gallons per minute even with the addition of 1,000 gallons per minute for fire flow demand. There would be no impact to public fire services.

Police Protection – Fresno County would continue to provide sheriff protection services to the Project site upon implementation of the proposed Project. Emergency response is adequate to the Project site. The closest patrol station is located in Fresno approximately 13.7 miles north of the Project site. No residential or office construction is proposed for this Project and no additional police protection would be required. There would be no impact.

Schools – The Well No. 7 site is located adjacent to Caruthers Elementary School. Implementation would not include construction of any residential structures. The proposed Project would not result in an increase of population that would require additional school facilities; therefore, there would be no impact.

Parks and other public facilities –As the proposed Project would not induce population growth, the Project would not create a need for additional park or recreational services. Laton-Kingston Park is the nearest regional park, located approximately 10.5 miles southeast of the Project site. Additionally, public schools, such as the adjacent Caruthers Elementary School include various public recreation facilities. No public facilities would be impacted by this Project.

3.16 Recreation

Table 3-23. Recreation Impacts

Recreation					
	Would the project:	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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

3.16.1 Environmental Setting

Fresno County has several regional parks, as well as State and national parks, national forest, wilderness areas, and ecological reserves. Regional recreational facilities within the County include 12 parks, 4 fishing access areas, and boating facility. Laton-Kingston Park is the nearest regional park, located approximately 10.5 miles southeast of the Project site. Additionally, public schools, such as the adjacent Caruthers Elementary School include various public recreation facilities.

3.16.2 Regulatory Setting

3.16.2.1 Federal

There are no federal regulations, plans, programs, or guidelines associated with recreation that are applicable to the proposed Project.

3.16.2.2 State

There are no State regulations, plans, programs, or guidelines associated with recreation that are applicable to the proposed Project.

3.16.2.3 Local

There are no local regulations, plans, programs, or guidelines associated with recreation that are applicable to the proposed Project.

3.16.3 Impact Assessment

XVI-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?

a) No Impact. The proposed Project includes the construction and operation of a new well, water distribution infrastructure, and a stormwater drainage basin. It would not increase the demand for recreational facilities or put a strain on the existing recreational facilities. No population growth would be associated with the proposed Project or be necessitated by the proposed Project. There would be no impact.

XVI-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?

b) No Impact. The proposed Project does not include recreational facilities. As there is no population growth associated with the proposed Project, construction or expansion of nearby recreational facilities would not be necessary. There would be no impact.

3.17 Transportation/Traffic

Table 3-24. Transportation/Traffic Impacts

Transportation/Traffic					
	Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b)	Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c)	Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d)	Result in inadequate emergency access?	☐	☐	☒	☐

3.17.1 Environmental Setting

Caruthers is a rural unincorporated community in southern Fresno County, dominated by agricultural production. State Route 41 is the nearest highway, which is approximately 2.3 miles east of the Project site. The Project area is surrounded by agricultural lands, vacant lots, and residential, commercial, and industrial development. Potential Pipeline Alignment No. 2 consists of vacant land along the rear property line of single-family residences. Roads along Potential Pipeline Alignment No. 1 are paved and include sidewalk and gutter. In contrast, road shoulders are unpaved, consisting of compacted dirt near the site of Well No. 7 at Henderson Road and South West Avenue. There is a small frontage road west of the well site, and beyond that is an elementary school. To the east, beyond South West Avenue, are rural farmhouses and vineyards. Residential development is present to the north, and a Sikh Temple is present to the south, across West Clemenceau Avenue. The Fresno Yosemite International Airport is located approximately 17 miles northeast and a private airstrip is located approximately 3.5 miles southeast of the Project.

3.17.2 Regulatory Setting

3.17.2.1 Federal

There are no federal regulations, plans, programs, or guidelines associated with transportation/traffic that are applicable to the proposed Project.

3.17.2.2 State

There are no State regulations, plans, programs, or guidelines associated with transportation/traffic that are applicable to the proposed Project.

3.17.2.3 Local

There are no local regulations, plans, programs, or guidelines associated with transportation/traffic that are applicable to the proposed Project.

3.17.3 Impact Assessment

XVII-a) Would the project conflict with a plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

XVII-b) Would the project conflict or be inconsistent with CEQA Guidelines section 150643. Subdivision (b)?

a-b) Less Than Significant Impact. The proposed Project includes the construction and operation of a new well, water distribution infrastructure, and a stormwater drainage basin. Construction traffic associated with the proposed Project would be minimal and temporary, lasting approximately nine months. Operational traffic consists of as-needed maintenance trips. There would not be a significant adverse effect to existing roadways in the area.

Proposed Pipeline Alignment No. 2 is located along the perimeter of a vacant lot to the rear of residences, and it would not intersect any roadways, or pedestrian or bicycle paths. However, if the Project implements Proposed Pipeline No. 1 along Henderson Road, sidewalks, driveways, and the road shoulder may be impacted by construction activities. These construction-related impacts would be temporary and alternate routes will be available for use by vehicles, pedestrians, and bicycles. Although road closures and detours are not anticipated as part of construction, if the Project implements Potential Pipeline Alignment No. 1, temporary lane diversions may be necessary for placement of the pipeline along Henderson Road. All disturbances to roadways, driveways, sidewalks, curb, and gutter incurred from the Project will be temporary and repaired.

There is no population growth associated with the Project, nor will implementation of the Project result in an increase of staff or drivers utilizing roadways in the area. Therefore, implementation of the Project will not increase the demand for any changes to congestion management programs or interfere with existing level of service standards during the operational phase. Construction-related roadway interferences will be less than significant in nature.

XVII-c) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

c) No Impact. No new roadway design features are associated with the proposed Project. As mentioned in Impact Assessments XVI-a and b above, all potential disturbances to roadways will be temporary and repaired. Therefore, there will be no impact.

XVII-d) Result in inadequate emergency access?

d) Less Than Significant Impact. As mentioned above in Impact Assessments XVI-a, b, and c, the Project does not propose new roadway design features or permanent alterations to roadways. All potential disturbances to roadways during construction will be temporary and repaired. Road closures and detours are not anticipated as part of the construction phase of the Project; however, if the Project implements Potential Pipeline Alignment No. 1, temporary lane diversions may be necessary for placement of the pipeline along Henderson Road. Disturbances to traffic patterns, such as a potential lane diversion will be temporary and minimal in nature, as there will be alternate routes available for emergency vehicles. The operational phase of the Project will have no effect on roadways or emergency access. Therefore, overall potential Project-related impacts to emergency access on local roadways would be considered less than significant.

3.18 Tribal Cultural Resources

Table 3-25. Tribal Cultural Resources Impacts

Tribal Cultural Resources				
Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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	☐	☒	☐	☐
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, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

3.18.1 Environmental Setting

3.18.1.1 Regional Setting

Penutian-speaking Yokuts tribal groups occupied the southern San Joaquin Valley region and much of the nearby Sierra Nevada. For a variety of historical reasons, existing research information emphasizes the central Yokuts tribes who occupied both the valley and particularly the foothills of the Sierra.

Although population estimates vary and population size was greatly affected by the introduction of Euro-American diseases and social disruption, the Yokuts were one of the largest, most successful groups in Native California. Cook estimates that the Yokuts region contained 27 percent of the aboriginal population in the state at the time of contact; other estimates are even higher. Many Yokut descendants continue to live in Fresno County, either on tribal reservations, or in local towns and communities.

Prior to the appearance of agriculture, starting in the nineteenth century, this location would have been prairie grasslands, grading into riparian environments and marshlands further south toward the north bank of Tulare Lake[41]. The study area and immediate surroundings have been urbanized and/or farmed and grazed for many years and no native vegetation is present. Perennial bunchgrasses such as purple needlegrass and nodding needlegrass most likely would have been the dominant plant cover in the study area prior to cultivation. Currently, the study area consists of commercial and residential properties surrounded by vineyards.

[41] Preston, Willliam L., 1981, Vanishing Landscapes: Land and Life in the Tulare Lake Basin. Berkeley, University of California Press.

According to the geoarchaeological model developed by Meyer et al., the study area has a moderately high potential for buried archaeological deposits. Buried sites and cultural resources are therefore considered to be possible within the APE.

3.18.1.2 Methodology

The information for this section was obtained using the same Methodology in **Section 3.5**.

3.18.2 Regulatory Setting

3.18.2.1 Federal

There are no federal regulations, plans, programs, and guidelines associated with tribal cultural resources that are applicable to the Proposed Project.

3.18.2.2 State

Assembly Bill 52 (PRC Section 21080.3.1): The Project is subject to consultation with California Native American Indian Tribes, if required pursuant to California Public Resources Code Section 21080.3.1 (AB 52). The PRC requires the lead agency must, within 14 days of determining that an application for a project is complete, notify any California Native American Tribe in writing that has previously requested such notification about the project from the lead agency and inquire whether the Tribe wishes to initiate formal consultation. Tribes have 30 days from receipt of said notification to request formal consultation; tribal consultation is required only with those tribes that formally request consultation, in writing. The lead agency then has 30 days to initiate the consultation, which then continues until the parties come to an agreement regarding necessary mitigation for impacts to Tribal Cultural Resources or agree that no mitigation is needed, or one or both parties determine that negotiation occurred in good faith, but no agreement will be made.

Caruthers has not received any letters from Tribes requesting notification of upcoming projects. As mentioned above in **Section 3.18.2.2**, 13 local Tribal contacts as identified by NAHC, were contacted in writing and by telephone in December 2018 and January 2019. No comments were received.

California Environmental Quality Act and the CEQA Guidelines (PRC 21000, *et seq.*; CCR Title 14, Chapter 3, Section 15000. *et seq.*): CEQA is applicable to discretionary actions by State or local lead agencies. Under CEQA, lead agencies must analyze impacts to cultural resources, generally (**see Section 3.5** and Tribal Cultural Resources, specifically. This section discusses impacts to cultural resources directly related to Native American Tribes of the Project area. The distinction for Tribal Cultural Resources is that they are described as 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.

3.18.2.3 Local

Fresno County General Plan. The 2000 Fresno County General Plan contains policies aimed at preserving and protecting cultural resources. The following policy is relevant to the protection of tribal cultural resources within the Project site and surrounding area:

Policy OS-J.3 The County shall solicit the views of the local Native American community in cases where development may result in disturbance to sites containing evidence of Native American activity and/or sites of cultural importance.

3.18.3 Impact Assessment

XVIII-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:

XVIII-a-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)

XVIII-a-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, the lead agency shall consider the significance of the resource to a California Native American tribe.

a-i-a-ii) Less than Significant Impact with Mitigation Incorporated. The District, as a public lead agency has not received any formal requests for notification from any State tribes, pursuant to AB52. However, an intensive Class III cultural resources inventory/Phase I survey of the Project area, including parallel survey transects, was conducted by ASM Affiliates, Inc. on December 21, 2018. A records search was conducted at the Southern San Joaquin Valley Archaeological Information Center, California State University, Bakersfield. A record search of the Native American Heritage Commission (NAHC) Sacred Lands File was also conducted, which resulted in a declaration that no sacred sites or tribal cultural resources are known to exist within the Project site or in the vicinity.

In addition to the record search of the Sacred Lands File, NAHC provided a list of 13 local Native American Tribal contacts, representing 10 different Native American Tribes who may have knowledge of cultural resources in the vicinity or general interest in the Project. The following 13 Tribal contacts were communicated with in writing via U.S. Mail with a letter dated December 10, 2018 informing them of the Proposed Project.

1. *Big Sandy Rancheria of Western Mono Indians, Auberry, Chairperson*
2. *Cold Springs Rancheria, Tollhouse, Chairperson*
3. *Dumna Wo-Wah Tribal Government, Fresno, Chairperson*
4. *Dunlap Band of Mono Indians, Dunlap, Tribal Chair*
5. *Dunlap Band of Mono Indians, Fresno, Tribal Secretary*
6. *Kings River Choinumni Farm Tribe, Fresno,*
7. *North Fork Mono Tribe, Clovis, Chairperson*
8. *Santa Rosa Rancheria Tachi Yokut Tribe, Lemoore, Chairperson*
9. *Table Mountain Rancheria, Friant, Chairperson*
10. *Table Mountain Rancheria, Friant, Cultural Resources Director*
11. *Traditional Choinumni Tribe, Fresno, Chairperson*
12. *Traditional Choinumni Tribe, Fresno, Cultural Resources*
13. *Wuksache Indian Tribe/Eshom Valley Band, Salinas, Chairperson*

No comments were received in response to the letters. ASM Affiliates, Inc. further attempted to reach each Tribe by telephone on January 3, 2019. No comments were received in response to the telephone messages. However, some of the tribes requested follow up contact under certain conditions. A copy of Tribal correspondence can be found within the Cultural Report (**Appendix C).**

No archaeological resources were identified by the ASM Affiliates archaeologist during the field survey of the Project area on December 21, 2018.

Therefore, it is concluded, barring evidence to the contrary, that there is little or no chance the Project will cause a substantial adverse change to the significance of a tribal cultural resource as defined. Nonetheless, Mitigation Measures CUL-1 and CUL-2, described above in **Section 3.5**, are recommended in the event cultural materials or human remains are unearthed during excavation or construction.

3.19 Utilities and Service Systems

Table 3-26. Utilities and Service Systems Impacts

Utilities and Service Systems					
	Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b)	Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
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?	☐	☐	☐	☒
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 reductions goals?	☐	☐	☒	☐
e)	Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

3.19.1 Environmental Setting

3.19.1.1 Water Supply

The Project lies entirely within the Kings Groundwater Subbasin of the San Joaquin Valley Groundwater Basin.[42] Declines in groundwater basin storage and groundwater overdraft are recurring problems in the Central Valley. Measures for ensuring the continued availability of groundwater for municipal needs have been identified and planned in several areas of the county. The measures include groundwater conservation and recharge, and supplementing or replacing groundwater sources for irrigation with surface water.

3.19.1.2 Wastewater Collection and Treatment

No wastewater will be generated during Project construction or operation.

[42] DWR Bulletin 118 Groundwater Basin Boundary Assessment Tool. https://gis.water.ca.gov/app/bbat/ Accessed 12 October 2018.

3.19.1.3 Landfills

The community of Caruthers is served by American Avenue Landfill which is located approximately 19 miles northwest of the Project site [43].

3.19.2 Regulatory Setting

3.19.2.1 Federal

Clean Water Act: The Clean Water Act (CWA) is intended to restore and maintain the chemical, physical, and biological integrity of the nation's waters (33 CFR 1251). The regulations implementing the CWA protect waters of the U.S. including streams and wetlands (33 CFR 328.3). The CWA requires states to set standards to protect, maintain, and restore water quality by regulating point source and some non-point source discharges. Under Section 402 of the CWA, the National Pollutant Discharge Elimination System (NPDES) permit process was established to regulate these discharges.

3.19.2.2 State

State Water Resources Control Board's Waste Discharge Requirement (WDR) Program: State regulations pertaining to the treatment, storage, processing, or disposal of solid waste are found in Title 27, CCR, Section 20005, *et seq*. (hereafter Title 27). In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to Section 20230 of Title 27.

Assembly Bill 2882: AB 2882 relates to water conservation programs and authorizes any public entity that supplies water at retail or wholesale for the benefit of persons within the service area or area of jurisdiction of the public entity to adopt and enforce, by ordinance or resolution, a water conservation program to reduce the quantity of water used by those persons for the purpose of conserving the water supplies of the public entity.

This bill authorizes a public entity to adopt allocation-based conservation water pricing meeting certain requirements. The bill would require that revenues derived from allocation-based conservation water pricing not exceed the reasonable cost of water service, including basic costs and incremental costs, as defined.

California Green Building Standards Code: Part 11 of Title 24, CCR, is the California Green Building Standards Code, also known as the CAL Green Code. CAL Green applies to the planning, design, operation, construction, use, and occupancy of every newly-constructed building or structure on a statewide basis, including additions and alterations to existing buildings which increase the building's conditioned area, interior volume, or size. The purpose of CAL Green is to improve public health, safety, and general welfare through enhanced design and construction of buildings using concepts which reduce negative impacts and promote those principles which have a positive environmental impact and encourage sustainable construction practices.

CAL Green also specifies requirements for applications regulated by the California Building Standards Commission (BSC), California Energy Commission (CEC), Division of the State Architect (DSA), Department of Public Health (CDPH), Office of Statewide Health Planning and Development (OSHPD), and the Department of Water Resources (DWR).

[43] The County of Fresno website. https://www.co.fresno.ca.us/departments/public-works-planning/divisions-of-public-works-and-planning/resources-and-parks-division/landfill-operations. Accessed December 2018.

Section 5.408 of Cal Green requires a minimum of 65% of nonhazardous construction and demolition waste be recycled and/or salvaged for reuse.

3.19.2.3 Local

Fresno County General Plan[44]: The Fresno County General Plan sets forth the following policies regarding utilities and service systems and which have potential relevance to the Project's CEQA review:

Policy PF-F.3: The County shall ensure that all new development complies with applicable provisions of the County Integrated Waste Management Plan.

Policy PF-C.19: The County shall discourage the proliferation of small community water systems.

Policy PF-C.20: The County shall not permit new private water wells within areas served by a public water system.

Policy PF-C.14: The County shall require that water supplies serving new development meet U.S. Environmental Protection Agency and California Department of Health and Services and other water quality standards.

Policy PF-C.11: The County shall assure an ongoing water supply to help sustain agriculture and accommodate future growth by allocation of resources necessary to carry out the water resource management programs.

3.19.3 Impact Assessment

XIX-a) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

a) No Impact. The proposed Project would not exceed wastewater treatment requirements or require new facilities. The Project entails the development of a well, hydropneumatic tank and distribution infrastructure, and a stormwater drainage basin. The Project will not generate wastewater or require expansion of existing facilities. There would be no impact.

XIX -b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

b) Less Than Significant Impact. A test well was drilled and sampled at the proposed site of Well No. 7 in May-June 2018, and the corresponding technical report revealed that Well No. 7, as planned, should yield between 750 and 1,000 gallons per minute. Combined with the existing water supply from Well No. 5 and Well No. 6, which have a total pumping capacity of 2,100 gallons per minute, the improved system's supply will substantially exceed the current maximum day demand of 1,008 gallons per minute. Therefore, water supplies are available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years. Impacts would be less than significant.

[44] Fresno County General Plan. https://www.co.fresno.ca.us/departments/public-works-planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/general-plan-maps Accessed 03 December 2018.

XIX -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?

c) No Impact. The proposed Project will create no wastewater demand on any wastewater treatment provider, nor will it require any wastewater treatment facilities at the Project site, so there will be no need for any sort of capacity determination by a wastewater treatment provider. There would be no impact.

XIX -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?

d) Less Than Significant Impact. There will be no solid waste associated with the operational phase of the Project. Waste associated with construction would be minimal and temporary, most of which will be recycled. Therefore, impacts would be less than significant.

XIX -e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

e) No Impact. Implementation of the Project involves water system improvements and is not anticipated to produce any solid waste. Furthermore, the Project would continue to comply with any federal, State, and local regulations regarding solid waste. There would be no impact.

3.20 Wildfire

Table 3-27. Wildfire Impacts

Wildfire					
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:		Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
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 uncontrollable spread of wildfire?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

3.20.1 Environmental Setting

The proposed Project is located in the census-designated place of Caruthers, in Fresno County. The site is in a flat urbanized area of the Central San Joaquin Valley. Most of the construction will be taking place within road right of ways, with the new well being placed on a vacant lot, adjacent to a school site. No structures are being constructed as part of the Project, and the Project is not considered to be population growth inducing.

3.20.2 Regulatory Setting

3.20.2.1 Federal

There are no Federal regulations, plans, programs, or guidelines associated with wildfire that are applicable to the proposed Project.

3.20.2.2 State

There are no State regulations, plans, programs, or guidelines associated with wildfire that are applicable to the proposed Project.

3.20.2.3 Local

There are no Local regulations, plans, programs, or guidelines associated with wildfire that are applicable to the proposed Project.

3.20.3 Impact Assessment

XX-a) Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

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

XX-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?

XX-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?

a-d) No Impact. The proposed project is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones. The nearest State Responsibility Area (SRA) is 24 miles to the northeast of the Project site. Additionally, the site is approximately 25 miles from the nearest Very High classification of Fire Hazard Severity Zone (FHSZ). Therefore, further analysis of the Projects potential impacts to wildfire are not warranted. There would be no impacts.

3.21 CEQA Mandatory Findings of Significance

Table 3-28. Mandatory Findings of Significance Impacts

Mandatory Findings of Significance					
	Would the project:	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?	☐	☒	☐	☐
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)?	☐	☐	☒	☐
c)	Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

3.21.1 Impact Assessment

XXI-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?

a) Less Than Significant Impact with Mitigation Incorporated. The analysis conducted in this Initial Study/Mitigated Negative Declaration results in a determination that the Project, with incorporation of mitigation measures, will have a less than significant effect on the environment. The potential for impacts to biological resources and cultural resources from the implementation of the proposed Project will be less than significant with the incorporation of the mitigation measures discussed in **Chapter 4, Mitigation Monitoring and Reporting Program**. Accordingly, the proposed Project will involve no potential for significant impacts through the degradation of the quality of the environment, the reduction in the habitat or population of fish or wildlife, including endangered plants or animals, the elimination of a plant or animal community or example of a major period of California history or prehistory.

XXI -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)?

b) Less Than Significant Impact. CEQA Guidelines Section 15064(i) States that a Lead Agency shall consider whether the cumulative impact of a project is significant and whether the effects of the project are cumulatively considerable. The assessment of the significance of the cumulative effects of a project must, therefore, be conducted in connection with the effects of past projects, other current projects, and probable future projects. The proposed Project would include the construction a new well and associated infrastructure to correct water quality issues experienced by the community of Caruthers. No additional roads would be constructed as a result of the Project, nor would any additional public services be required. The proposed Project is intended to improve water quality and would not result in direct or indirect population growth. Therefore, implementation of the Project would not result in significant cumulative impacts and all potential impacts would be reduced to less than significant through the implementation of mitigation measures and basic regulatory requirements incorporated into future Project design.

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

c) Less than Significant Impact. The proposed Project would include the construction of a new well (Well No. 7), storm drainage basin, hydropneumatics tank, and associated infrastructure. Additionally, a transmission pipeline will be installed from Well No. 7 to an existing buried pipeline connected to existing Wells No. 5 and No. 6. The proposed Project in and of itself would not create a significant hazard to the public or the environment. On the contrary, implementation of the Project would correct water quality issues experienced by the community of Caruthers. Construction-related air quality/dust exposure impacts could occur temporarily as a result of project construction. However, implementation of basic regulatory requirements identified in this IS/MND would ensure that impacts are less than significant. Therefore, the proposed Project would not have any direct or indirect adverse impacts on humans. This impact would be less than significant.

4 Mitigation Monitoring and Reporting Program

This Mitigation Monitoring and Reporting Program (MMRP) has been formulated based upon the findings of the Initial Study/Mitigated Negative Declaration (IS/MND) for the Caruthers Community Services District (CCSD) Well No. 7 Project (Project) in the unincorporated community of Caruthers in southern Fresno County. The MMRP lists mitigation measures recommended in the IS/MND for the Project and identifies monitoring and reporting requirements.

Table 4-1 presents the mitigation measures identified for the proposed Project. Each mitigation measure is numbered with a symbol indicating the topical section to which it pertains, a hyphen, and the impact number. For example, AIR-2 would be the second mitigation measure identified in the Air Quality analysis of the IS/MND.

The first column of **Table 4-1** identifies the mitigation measure. The second column, entitled "When Monitoring is to Occur," identifies the time the mitigation measure should be initiated. The third column, "Frequency of Monitoring," identifies the frequency of the monitoring of the mitigation measure. The fourth column, "Agency Responsible for Monitoring," names the party ultimately responsible for ensuring that the mitigation measure is implemented. The last columns will be used by CCSD to ensure that individual mitigation measures have been complied with and monitored.

Table 4-1. Mitigation Monitoring and Reporting Program

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Biological Resources					
Mitigation Measure BIO-1: Worker Environmental Action Plan (WEAP) Training					
Prior to initiating construction activities (including staging and mobilization), all personnel associated with Project construction shall attend mandatory Worker Environmental Awareness Program (WEAP) training, conducted by a qualified biologist, to aid workers in identifying special status resources that may occur in the Project area. The specifics of this program shall include identification of the sensitive species and suitable habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area. A fact sheet conveying this information, along with photographs or illustrations of sensitive species with potential to occur onsite, shall also be prepared for distribution to all contractors, their employees, and all other personnel involved with construction of the Project. All employees shall sign a form documenting that they have attended WEAP training and understand the information presented to them.	Prior to the start of construction and during construction upon arrival of new personnel	Prior to the start of construction and during construction upon arrival of new personnel	CCSD		
Mitigation Measure BIO-2a: Avoidance of Nesting Bird Season					
The Project's construction activities shall occur, if feasible, between September 16 and January 31 (outside of nesting bird season) in an effort to avoid impacts to nesting birds.	During construction activities	Daily, during construction activities	CCSD		
Mitigation Measure BIO-2b: Pre-Construction Nesting Bird Survey					
If activities must occur within nesting bird season (February 1 to September 15), a qualified biologist shall conduct pre-construction surveys for active nests within 30 days prior to the start of construction. The survey shall include the proposed work area and surrounding lands within 0.5 mile. If no active nests are observed, no further mitigation is required. Raptor nests are considered "active" upon the nest-building stage.	Within 30 days prior to the start of work performed from February 1 to September 15	Once	CCSD		
Mitigation Measure BIO-2c: Establish Nest Buffers					
On discovery of any active nests near work areas, the biologist shall determine appropriate construction setback distances based on applicable CDFW and/or USFWS guidelines and/or the biology of the species in question. Construction buffers shall be identified with flagging, fencing, or other easily visible means, and shall be maintained until the biologist has determined that the nestlings have fledged.	On discovery of active nests	Once, per nest, or more frequently as determined by biologist	CCSD		

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Cultural Resources					
Mitigation Measure CUL-1: Archaeological Resources					
In the event that archaeological resources are encountered at any time during development or ground-moving activities within the entire project area, all work in the vicinity of the find shall halt until a qualified archaeologist can assess the discovery. The District shall implement all recommendations of the archaeologist necessary to avoid or reduce to a less than significant level potential impacts to cultural resource. Appropriate actions could include a Data Recovery Plan or preservation in place.	In the event archaeological resources are uncovered	During excavation	CCSD		
Mitigation Measure CUL-2: Human Remains					
If human remains are uncovered, or in any other case when human remains are discovered during construction, the Tulare County Coroner is to be notified to arrange proper treatment and disposition. If the remains are identified—on the basis of archaeological context, age, cultural associations, or biological traits—as those of a Native American, California Health and Safety Code 7050.5 and Public Resource Code 5097.98 require that the coroner notify the NAHC within 24 hours of discovery. The NAHC will then identify the Most Likely Descendent who will determine the manner in which the remains are treated.	In the event human remains are uncovered	During excavation	CCSD		

Appendix A

Air Quality and Greenhouse Gas Emissions Evaluation Report

Caruthers CSD Well No. 7

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	1.20		1.20	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - 250 calendar days = 166 work days.

Off-road Equipment - estimated equipment based on project design.

Off-road Equipment - Estimated equipment based on project design.

Off-road Equipment - Estimated equipment based on project design.

Off-road Equipment -

Off-road Equipment - Estimated equipment based on project design.

Trips and VMT - Estimated 670 CY of aggregate base imported for paving. Average dump truck capacity 10-14 CY.

Grading - Estimated ground disturbance of 1.2 acres.

Construction Off-road Equipment Mitigation -

Stationary Sources - Emergency Generators and Fire Pumps - Generator based on Well No. 6 generator. Cummins DQDAA (250 kW = 335 hp)

Stationary Sources - Process Boilers -

Stationary Sources - User Defined -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	33.00
tblConstructionPhase	NumDays	4.00	33.00
tblConstructionPhase	NumDays	10.00	33.00
tblConstructionPhase	NumDays	2.00	33.00
tblGrading	AcresOfGrading	16.50	1.20
tblGrading	AcresOfGrading	16.50	1.20
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	335.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	100.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	HaulingTripNumber	0.00	100.00
tblTripsAndVMT	WorkerTripNumber	13.00	8.00
tblTripsAndVMT	WorkerTripNumber	13.00	8.00
tblTripsAndVMT	WorkerTripNumber	0.00	8.00
tblTripsAndVMT	WorkerTripNumber	13.00	8.00

2.0 Emissions Summary

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					
2020	0.1458	1.4151	0.9247	1.8400e-003	0.1712	0.0697	0.2409	0.0911	0.0652	0.1563	0.0000	159.6787	159.6787	0.0407	0.0000	160.6959
2021	5.4900e-003	0.0506	0.0549	1.0000e-004	1.2600e-003	2.4700e-003	3.7300e-003	3.3000e-004	2.2800e-003	2.6100e-003	0.0000	8.7449	8.7449	2.3500e-003	0.0000	8.8038
Maximum	**0.1458**	**1.4151**	**0.9247**	**1.8400e-003**	**0.1712**	**0.0697**	**0.2409**	**0.0911**	**0.0652**	**0.1563**	**0.0000**	**159.6787**	**159.6787**	**0.0407**	**0.0000**	**160.6959**

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					
2020	0.1458	1.4151	0.9247	1.8400e-003	0.0817	0.0697	0.1514	0.0423	0.0652	0.1074	0.0000	159.6786	159.6786	0.0407	0.0000	160.6958
2021	5.4900e-003	0.0506	0.0549	1.0000e-004	1.2600e-003	2.4700e-003	3.7300e-003	3.3000e-004	2.2800e-003	2.6100e-003	0.0000	8.7449	8.7449	2.3500e-003	0.0000	8.8038
Maximum	**0.1458**	**1.4151**	**0.9247**	**1.8400e-003**	**0.0817**	**0.0697**	**0.1514**	**0.0423**	**0.0652**	**0.1074**	**0.0000**	**159.6786**	**159.6786**	**0.0407**	**0.0000**	**160.6958**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**51.91**	**0.00**	**36.58**	**53.45**	**0.00**	**30.76**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2020	8-31-2020	0.6652	0.6652
2	9-1-2020	11-30-2020	0.7592	0.7592
3	12-1-2020	2-28-2021	0.1822	0.1822
		Highest	0.7592	0.7592

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	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	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
Stationary	0.0275	0.0768	0.0701	1.3000e-004		4.0400e-003	4.0400e-003		4.0400e-003	4.0400e-003	0.0000	12.7567	12.7567	1.7900e-003	0.0000	12.8014
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0275**	**0.0768**	**0.0701**	**1.3000e-004**		**4.0400e-003**	**4.0400e-003**		**4.0400e-003**	**4.0400e-003**	**0.0000**	**12.7567**	**12.7567**	**1.7900e-003**	**0.0000**	**12.8014**

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	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	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
Stationary	0.0275	0.0768	0.0701	1.3000e-004		4.0400e-003	4.0400e-003		4.0400e-003	4.0400e-003	0.0000	12.7567	12.7567	1.7900e-003	0.0000	12.8014
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0275**	**0.0768**	**0.0701**	**1.3000e-004**		**4.0400e-003**	**4.0400e-003**		**4.0400e-003**	**4.0400e-003**	**0.0000**	**12.7567**	**12.7567**	**1.7900e-003**	**0.0000**	**12.8014**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2020	7/15/2020	5	33	
2	Trenching/ Drilling	Trenching	7/16/2020	8/31/2020	5	33	
3	Grading	Grading	9/1/2020	10/15/2020	5	33	
4	Infrastructure Construction	Building Construction	10/16/2020	12/1/2020	5	33	
5	Paving	Paving	12/2/2020	1/15/2021	5	33	

Acres of Grading (Site Preparation Phase): 1.2

Acres of Grading (Grading Phase): 1.2

Acres of Paving: 1.2

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching/ Drilling	Bore/Drill Rigs	1	7.00	221	0.50
Trenching/ Drilling	Excavators	1	6.00	158	0.38
Trenching/ Drilling	Rubber Tired Dozers	1	6.00	247	0.40
Trenching/ Drilling	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Trenching/ Drilling	Trenchers	1	7.00	78	0.50
Grading	Cranes	1	6.00	231	0.29
Grading	Forklifts	1	6.00	89	0.20
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Infrastructure Construction	Cement and Mortar Mixers	1	6.00	9	0.56
Infrastructure Construction	Concrete/Industrial Saws	2	8.00	81	0.73
Infrastructure Construction	Cranes	1	6.00	231	0.29
Infrastructure Construction	Forklifts	1	6.00	89	0.20
Infrastructure Construction	Generator Sets	1	8.00	84	0.74
Infrastructure Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Infrastructure Construction	Welders	2	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Trenching/ Drilling	5	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Infrastructure Construction	9	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	8.00	0.00	100.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 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					0.0876	0.0000	0.0876	0.0479	0.0000	0.0479	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0269	0.3027	0.1272	2.8000e-004		0.0136	0.0136		0.0125	0.0125	0.0000	24.9587	24.9587	8.0700e-003	0.0000	25.1605
Total	**0.0269**	**0.3027**	**0.1272**	**2.8000e-004**	**0.0876**	**0.0136**	**0.1011**	**0.0479**	**0.0125**	**0.0603**	**0.0000**	**24.9587**	**24.9587**	**8.0700e-003**	**0.0000**	**25.1605**

3.2 Site Preparation - 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	7.9000e-004	5.3000e-004	5.2900e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6500e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4058	1.4058	4.0000e-005	0.0000	1.4067
Total	**7.9000e-004**	**5.3000e-004**	**5.2900e-003**	**2.0000e-005**	**1.6400e-003**	**1.0000e-005**	**1.6500e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.4058**	**1.4058**	**4.0000e-005**	**0.0000**	**1.4067**

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					0.0394	0.0000	0.0394	0.0215	0.0000	0.0215	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0269	0.3027	0.1272	2.8000e-004		0.0136	0.0136		0.0125	0.0125	0.0000	24.9587	24.9587	8.0700e-003	0.0000	25.1605
Total	**0.0269**	**0.3027**	**0.1272**	**2.8000e-004**	**0.0394**	**0.0136**	**0.0530**	**0.0215**	**0.0125**	**0.0340**	**0.0000**	**24.9587**	**24.9587**	**8.0700e-003**	**0.0000**	**25.1605**

3.2 Site Preparation - 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	7.9000e-004	5.3000e-004	5.2900e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6500e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4058	1.4058	4.0000e-005	0.0000	1.4067
Total	**7.9000e-004**	**5.3000e-004**	**5.2900e-003**	**2.0000e-005**	**1.6400e-003**	**1.0000e-005**	**1.6500e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.4058**	**1.4058**	**4.0000e-005**	**0.0000**	**1.4067**

3.3 Trenching/ Drilling - 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	0.0295	0.3062	0.1926	4.0000e-004		0.0158	0.0158		0.0145	0.0145	0.0000	35.0385	35.0385	0.0113	0.0000	35.3218
Total	**0.0295**	**0.3062**	**0.1926**	**4.0000e-004**		**0.0158**	**0.0158**		**0.0145**	**0.0145**	**0.0000**	**35.0385**	**35.0385**	**0.0113**	**0.0000**	**35.3218**

3.3 Trenching/ Drilling - 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	7.9000e-004	5.3000e-004	5.2900e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6500e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4058	1.4058	4.0000e-005	0.0000	1.4067
Total	**7.9000e-004**	**5.3000e-004**	**5.2900e-003**	**2.0000e-005**	**1.6400e-003**	**1.0000e-005**	**1.6500e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.4058**	**1.4058**	**4.0000e-005**	**0.0000**	**1.4067**

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	0.0295	0.3062	0.1926	4.0000e-004		0.0158	0.0158		0.0145	0.0145	0.0000	35.0385	35.0385	0.0113	0.0000	35.3218
Total	**0.0295**	**0.3062**	**0.1926**	**4.0000e-004**		**0.0158**	**0.0158**		**0.0145**	**0.0145**	**0.0000**	**35.0385**	**35.0385**	**0.0113**	**0.0000**	**35.3218**

3.3 Trenching/ Drilling - 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	7.9000e-004	5.3000e-004	5.2900e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6500e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4058	1.4058	4.0000e-005	0.0000	1.4067
Total	**7.9000e-004**	**5.3000e-004**	**5.2900e-003**	**2.0000e-005**	**1.6400e-003**	**1.0000e-005**	**1.6500e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.4058**	**1.4058**	**4.0000e-005**	**0.0000**	**1.4067**

3.4 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					0.0752	0.0000	0.0752	0.0410	0.0000	0.0410	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0312	0.3534	0.1501	3.4000e-004		0.0158	0.0158		0.0145	0.0145	0.0000	30.2203	30.2203	9.7700e-003	0.0000	30.4646
Total	**0.0312**	**0.3534**	**0.1501**	**3.4000e-004**	**0.0752**	**0.0158**	**0.0910**	**0.0410**	**0.0145**	**0.0556**	**0.0000**	**30.2203**	**30.2203**	**9.7700e-003**	**0.0000**	**30.4646**

3.4 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	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	7.9000e-004	5.3000e-004	5.2900e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6500e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4058	1.4058	4.0000e-005	0.0000	1.4067
Total	**7.9000e-004**	**5.3000e-004**	**5.2900e-003**	**2.0000e-005**	**1.6400e-003**	**1.0000e-005**	**1.6500e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.4058**	**1.4058**	**4.0000e-005**	**0.0000**	**1.4067**

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					0.0338	0.0000	0.0338	0.0185	0.0000	0.0185	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0312	0.3534	0.1501	3.4000e-004		0.0158	0.0158		0.0145	0.0145	0.0000	30.2202	30.2202	9.7700e-003	0.0000	30.4646
Total	**0.0312**	**0.3534**	**0.1501**	**3.4000e-004**	**0.0338**	**0.0158**	**0.0496**	**0.0185**	**0.0145**	**0.0330**	**0.0000**	**30.2202**	**30.2202**	**9.7700e-003**	**0.0000**	**30.4646**

3.4 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	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	7.9000e-004	5.3000e-004	5.2900e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6500e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4058	1.4058	4.0000e-005	0.0000	1.4067
Total	**7.9000e-004**	**5.3000e-004**	**5.2900e-003**	**2.0000e-005**	**1.6400e-003**	**1.0000e-005**	**1.6500e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.4058**	**1.4058**	**4.0000e-005**	**0.0000**	**1.4067**

3.5 Infrastructure 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	0.0433	0.3402	0.3233	5.5000e-004		0.0190	0.0190		0.0185	0.0185	0.0000	46.2841	46.2841	6.6500e-003	0.0000	46.4503
Total	**0.0433**	**0.3402**	**0.3233**	**5.5000e-004**		**0.0190**	**0.0190**		**0.0185**	**0.0185**	**0.0000**	**46.2841**	**46.2841**	**6.6500e-003**	**0.0000**	**46.4503**

3.5 Infrastructure 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	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	7.9000e-004	5.3000e-004	5.2900e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6500e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4058	1.4058	4.0000e-005	0.0000	1.4067
Total	**7.9000e-004**	**5.3000e-004**	**5.2900e-003**	**2.0000e-005**	**1.6400e-003**	**1.0000e-005**	**1.6500e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.4058**	**1.4058**	**4.0000e-005**	**0.0000**	**1.4067**

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	0.0433	0.3402	0.3233	5.5000e-004		0.0190	0.0190		0.0185	0.0185	0.0000	46.2841	46.2841	6.6500e-003	0.0000	46.4503
Total	**0.0433**	**0.3402**	**0.3233**	**5.5000e-004**		**0.0190**	**0.0190**		**0.0185**	**0.0185**	**0.0000**	**46.2841**	**46.2841**	**6.6500e-003**	**0.0000**	**46.4503**

3.5 Infrastructure 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	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	7.9000e-004	5.3000e-004	5.2900e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6500e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4058	1.4058	4.0000e-005	0.0000	1.4067
Total	**7.9000e-004**	**5.3000e-004**	**5.2900e-003**	**2.0000e-005**	**1.6400e-003**	**1.0000e-005**	**1.6500e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.4058**	**1.4058**	**4.0000e-005**	**0.0000**	**1.4067**

3.6 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	9.9600e-003	0.1007	0.1056	1.6000e-004		5.5400e-003	5.5400e-003		5.1100e-003	5.1100e-003	0.0000	14.0781	14.0781	4.4700e-003	0.0000	14.1898
Paving	1.0500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0110**	**0.1007**	**0.1056**	**1.6000e-004**		**5.5400e-003**	**5.5400e-003**		**5.1100e-003**	**5.1100e-003**	**0.0000**	**14.0781**	**14.0781**	**4.4700e-003**	**0.0000**	**14.1898**

3.6 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	2.7000e-004	9.3900e-003	1.2600e-003	3.0000e-005	7.8000e-004	3.0000e-005	8.2000e-004	2.1000e-004	3.0000e-005	2.4000e-004	0.0000	2.5389	2.5389	2.2000e-004	0.0000	2.5445
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	5.3000e-004	3.6000e-004	3.5300e-003	1.0000e-005	1.0900e-003	1.0000e-005	1.1000e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9372	0.9372	2.0000e-005	0.0000	0.9378
Total	**8.0000e-004**	**9.7500e-003**	**4.7900e-003**	**4.0000e-005**	**1.8700e-003**	**4.0000e-005**	**1.9200e-003**	**5.0000e-004**	**4.0000e-005**	**5.4000e-004**	**0.0000**	**3.4761**	**3.4761**	**2.4000e-004**	**0.0000**	**3.4822**

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	9.9600e-003	0.1007	0.1056	1.6000e-004		5.5400e-003	5.5400e-003		5.1100e-003	5.1100e-003	0.0000	14.0780	14.0780	4.4700e-003	0.0000	14.1898
Paving	1.0500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0110**	**0.1007**	**0.1056**	**1.6000e-004**		**5.5400e-003**	**5.5400e-003**		**5.1100e-003**	**5.1100e-003**	**0.0000**	**14.0780**	**14.0780**	**4.4700e-003**	**0.0000**	**14.1898**

3.6 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	2.7000e-004	9.3900e-003	1.2600e-003	3.0000e-005	7.8000e-004	3.0000e-005	8.2000e-004	2.1000e-004	3.0000e-005	2.4000e-004	0.0000	2.5389	2.5389	2.2000e-004	0.0000	2.5445
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	5.3000e-004	3.6000e-004	3.5300e-003	1.0000e-005	1.0900e-003	1.0000e-005	1.1000e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9372	0.9372	2.0000e-005	0.0000	0.9378
Total	**8.0000e-004**	**9.7500e-003**	**4.7900e-003**	**4.0000e-005**	**1.8700e-003**	**4.0000e-005**	**1.9200e-003**	**5.0000e-004**	**4.0000e-005**	**5.4000e-004**	**0.0000**	**3.4761**	**3.4761**	**2.4000e-004**	**0.0000**	**3.4822**

3.6 Paving - 2021

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	4.5900e-003	0.0462	0.0527	8.0000e-005		2.4600e-003	2.4600e-003		2.2600e-003	2.2600e-003	0.0000	7.0384	7.0384	2.2300e-003	0.0000	7.0942
Paving	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.1100e-003**	**0.0462**	**0.0527**	**8.0000e-005**		**2.4600e-003**	**2.4600e-003**		**2.2600e-003**	**2.2600e-003**	**0.0000**	**7.0384**	**7.0384**	**2.2300e-003**	**0.0000**	**7.0942**

3.6 Paving - 2021

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	1.3000e-004	4.3200e-003	6.1000e-004	1.0000e-005	7.1000e-004	1.0000e-005	7.3000e-004	1.8000e-004	1.0000e-005	2.0000e-004	0.0000	1.2540	1.2540	1.1000e-004	0.0000	1.2567
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	2.4000e-004	1.6000e-004	1.6000e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4525	0.4525	1.0000e-005	0.0000	0.4528
Total	**3.7000e-004**	**4.4800e-003**	**2.2100e-003**	**2.0000e-005**	**1.2600e-003**	**1.0000e-005**	**1.2800e-003**	**3.3000e-004**	**1.0000e-005**	**3.5000e-004**	**0.0000**	**1.7065**	**1.7065**	**1.2000e-004**	**0.0000**	**1.7095**

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	4.5900e-003	0.0462	0.0527	8.0000e-005		2.4600e-003	2.4600e-003		2.2600e-003	2.2600e-003	0.0000	7.0384	7.0384	2.2300e-003	0.0000	7.0942
Paving	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.1100e-003**	**0.0462**	**0.0527**	**8.0000e-005**		**2.4600e-003**	**2.4600e-003**		**2.2600e-003**	**2.2600e-003**	**0.0000**	**7.0384**	**7.0384**	**2.2300e-003**	**0.0000**	**7.0942**

3.6 Paving - 2021

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	1.3000e-004	4.3200e-003	6.1000e-004	1.0000e-005	7.1000e-004	1.0000e-005	7.3000e-004	1.8000e-004	1.0000e-005	2.0000e-004	0.0000	1.2540	1.2540	1.1000e-004	0.0000	1.2567
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	2.4000e-004	1.6000e-004	1.6000e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4525	0.4525	1.0000e-005	0.0000	0.4528
Total	**3.7000e-004**	**4.4800e-003**	**2.2100e-003**	**2.0000e-005**	**1.2600e-003**	**1.0000e-005**	**1.2800e-003**	**3.3000e-004**	**1.0000e-005**	**3.5000e-004**	**0.0000**	**1.7065**	**1.7065**	**1.2000e-004**	**0.0000**	**1.7095**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Total					

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.481390	0.032808	0.168621	0.127212	0.018382	0.004997	0.032622	0.122881	0.002369	0.001675	0.005261	0.001115	0.000667

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	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
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	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
Total		**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**

Mitigated

	NaturalGas Use	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
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	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
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	0	100	335	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

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 (300 - 600 HP)	0.0275	0.0768	0.0701	1.3000e-004		4.0400e-003	4.0400e-003		4.0400e-003	4.0400e-003	0.0000	12.7567	12.7567	1.7900e-003	0.0000	12.8014
Total	**0.0275**	**0.0768**	**0.0701**	**1.3000e-004**		**4.0400e-003**	**4.0400e-003**		**4.0400e-003**	**4.0400e-003**	**0.0000**	**12.7567**	**12.7567**	**1.7900e-003**	**0.0000**	**12.8014**

11.0 Vegetation

Appendix B

Biological Evaluation Report

Caruthers Community Services District
Well No. 7

Biological Evaluation

Prepared by:
Brooke Fletcher, Wildlife Biologist

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December 2018

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APPENDICES

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1 Introduction

Caruthers Community Services District (CCSD) proposes to address water quality concerns by constructing a new well (Well No. 7) and related features (Project) to provide potable water supplies to the unincorporated community of Caruthers. The Project proposes placement of Well No. 7 near the intersection of Henderson Road and South West Avenue in the community of Caruthers, within southern Fresno County.

The following technical report, prepared by Provost & Pritchard Consulting Group, in compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), includes a description of the biological resources present or with potential to occur within the Project site and surrounding areas and evaluates potential Project-related impacts to those resources.

1.1 Project Description

The Caruthers Community Services District Well No. 7 Project includes drilling and construction of a new well (Well No. 7), storm drainage basin, hydropneumatic tank, and other associated infrastructure on the ruderal vacant lot on the northwest corner of Henderson Road and South West Avenue in the community of Caruthers, California. A transmission pipeline will be installed from Well No. 7 to an existing buried pipeline, connected to existing Wells No. 5 and 6. Originally, the Project's design included a pipeline from Well No. 7 that travels northwest along Henderson Road with a connection (Potential Connection No. 1) to existing infrastructure at the intersection of Henderson Road and West Superior Avenue (Potential Pipeline Alignment No. 1). In November, an alternative pipeline alignment was proposed. This second alignment (Potential Pipeline Alignment No. 2) is shorter and travels northwest along the perimeter of a vacant ruderal lot, to the rear of residential units on West Superior Avenue. This alignment includes a connection (Potential Connection No. 2) to existing infrastructure northeast of Well No. 5, to the rear of residential units on Sandy Road. The proposed placement of Well No. 7 and both potential pipeline alignments are shown in **Figure 4**. Although the Project will only utilize one of the two potential pipeline alignments, both alternatives will be analyzed for potential impacts to biological resources. Therefore, for the purposes of this biological evaluation, the Project area shall be defined as the site of Well No. 7, adjacent potential staging area, and both potential pipeline alignments, which comprises an approximate total area of 5.07 acres.

1.2 Report Objectives

Water system improvement projects such as that proposed by Caruthers Community Services District could potentially damage biological resources or modify habitats that are crucial for sensitive plant and wildlife species. In cases such as these, development may be regulated by state or federal agencies, subject to provisions of California Environmental Quality Act (CEQA), and/or National Environmental Policy Act (NEPA), and/or addressed by local regulatory agencies. In the case of Caruthers Community Services District: Well No. 7 Project, environmental review under both CEQA and NEPA are required.

This report addresses issues related to the following:

1) The presence of sensitive biological resources onsite, or with the potential to occur onsite.
2) The federal, state, and local regulations regarding these resources.
3) Mitigation measures that may be required to reduce the magnitude of anticipated impacts and/or comply with permit requirements of state and federal resource agencies.

Therefore, the objectives of this report are:

1) Summarize all site-specific information related to existing biological resources.

2) Make reasonable inferences about the biological resources that could occur onsite based on habitat suitability and the proximity of the site to a species' known range.
3) Summarize all state and federal natural resource protection laws that may be relevant to the Project.
4) Identify and discuss Project impacts to biological resources likely to occur onsite within the context of CEQA or state or federal laws.
5) Identify and publish a set of avoidance and mitigation measures that would reduce impacts to a less-than-significant level (as identified by CEQA) and are generally consistent with recommendations of the resource agencies for affected biological resources.

1.3 Study Methodology

A reconnaissance-level field survey of the Project site and surrounding area was conducted on October 16, 2018 by Provost & Pritchard biologist, Brooke Fletcher. As mentioned in Section 1.1, in November, an alternative pipeline was proposed. Mrs. Fletcher returned to the Project site on November 19, 2018 and performed a field survey of Potential Pipeline Alignment No. 2. The surveys consisted of walking through the Project area while identifying and noting land uses, biological habitats and communities, and plant and animal species encountered. Furthermore, the site and surrounding areas were assessed for suitable habitats of various wildlife species.

Mrs. Fletcher conducted an analysis of potential Project-related impacts to biological resources based on the resources known to exist or with potential to exist within the Project site and surrounding areas. Sources of information used in preparation of this analysis included: the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB); the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) system; the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Vascular Plants of California; CalFlora's online database of California native plants; the Jepson Herbarium online database (Jepson eFlora); U.S. Fish and Wildlife Service (USFWS) Environmental Conservation Online System (ECOS); the NatureServe Explorer online database; the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Plants Database; the California Department of Fish and Wildlife (CDFW) California Wildlife Habitat Relationships (CWHR) database; the California Herps online database; and various manuals, reports, and references related to plants and animals of the San Joaquin Valley region.

The field investigation did not include a wetland delineation or focused surveys for special status species. The field survey conducted included an appropriate level of detail to assess the significance of potential impacts to sensitive biological resources resulting from the Project. Furthermore, the field survey was sufficient to generally describe those features of the Project that could be subject to the jurisdiction of federal and/or State agencies, such as the U.S. Army Corps of Engineers (USACE), CDFW, and the Regional Water Quality Control Board (RWQCB).

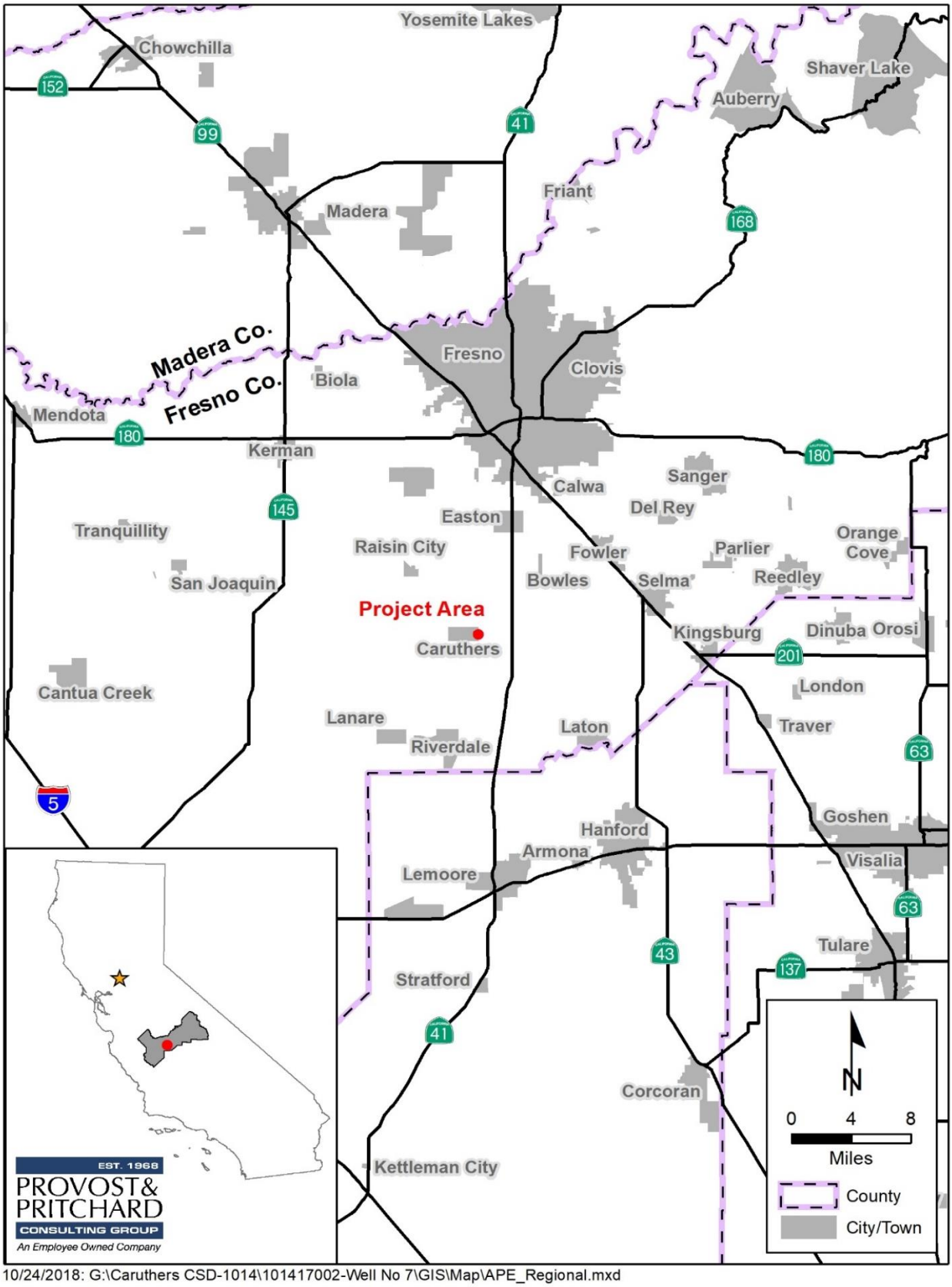

Figure 1. Regional Location Map/ Area of Potential Effect (APE)

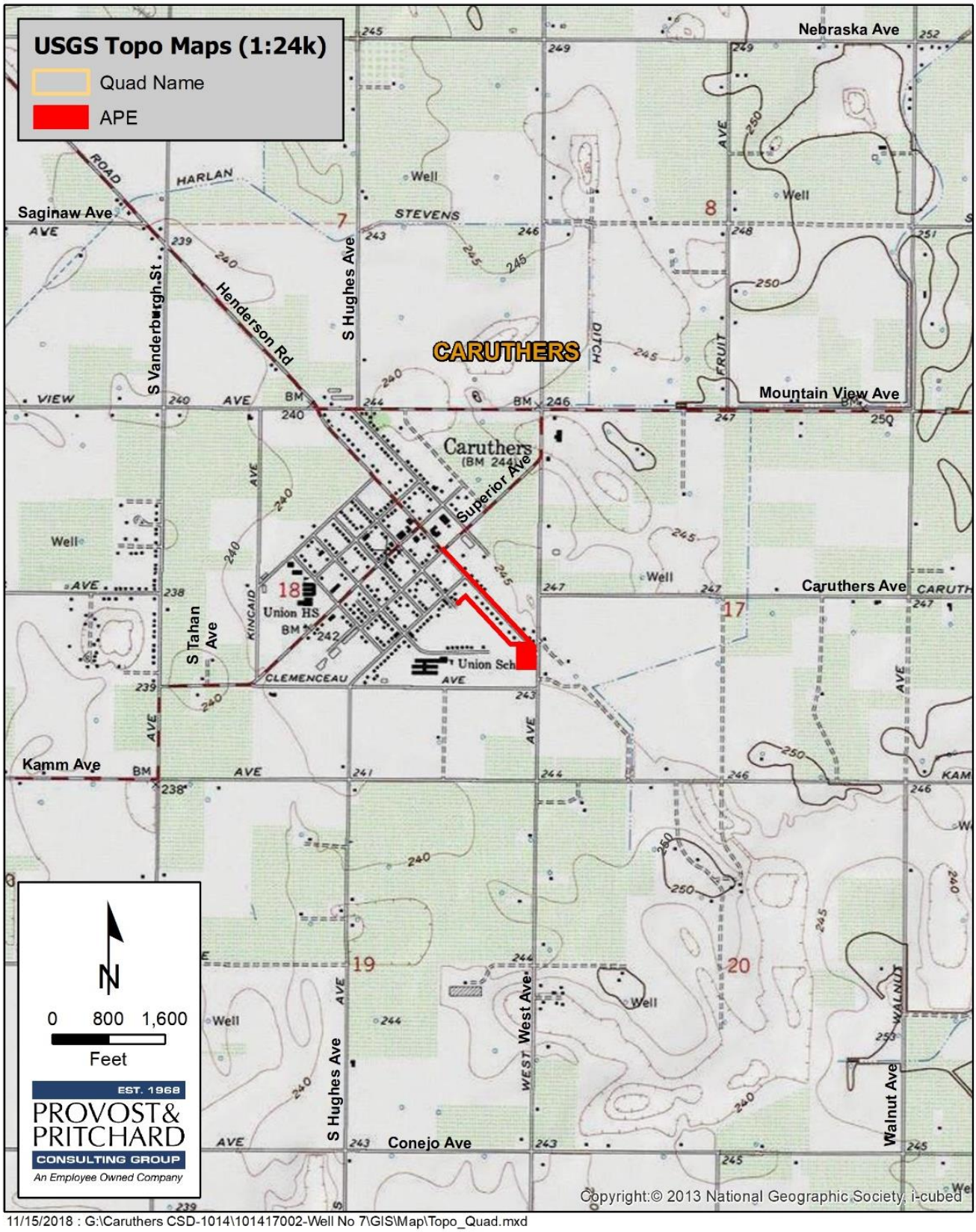

Figure 2. Topographic Quadrangle Map

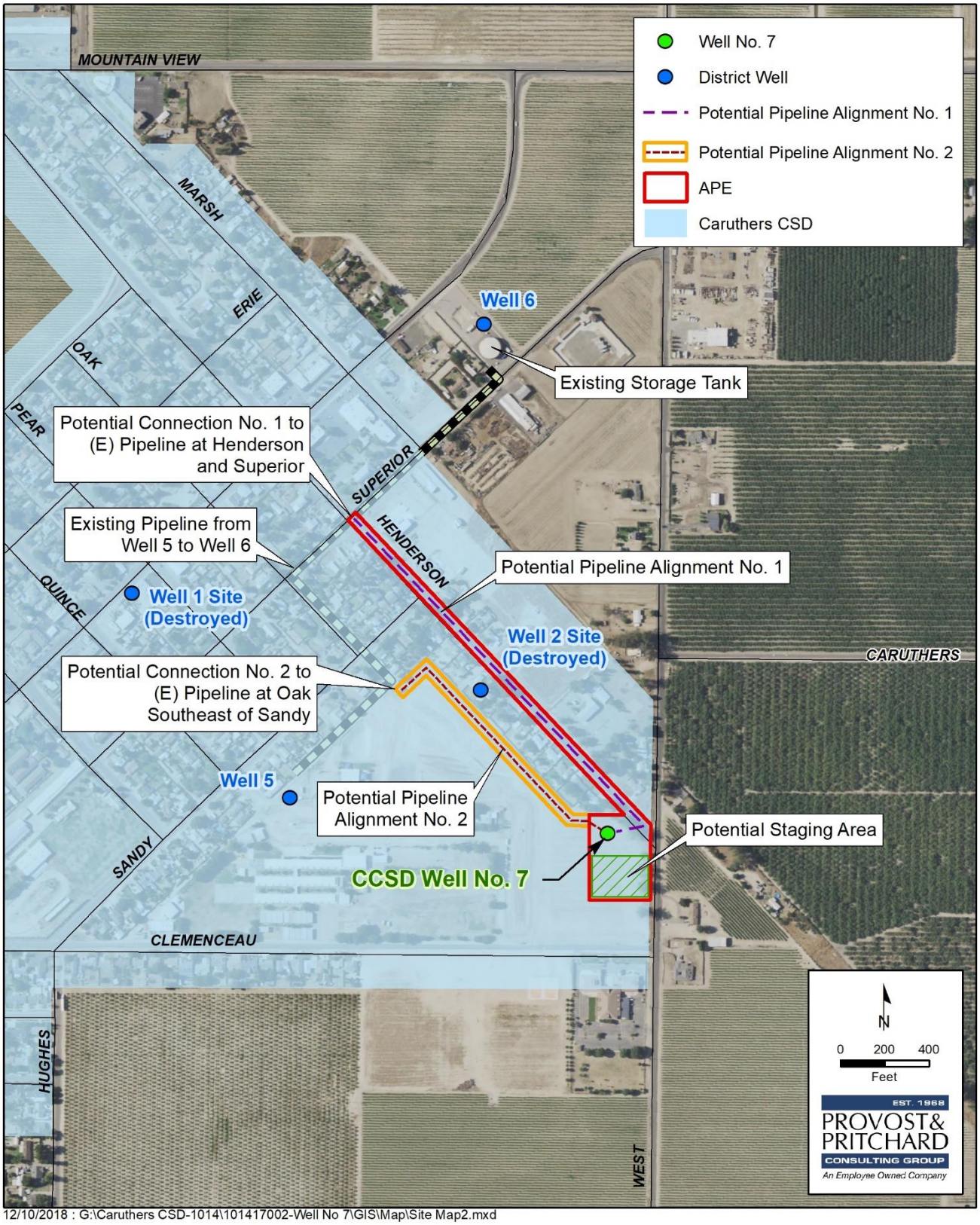

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Figure 4. Site Plan

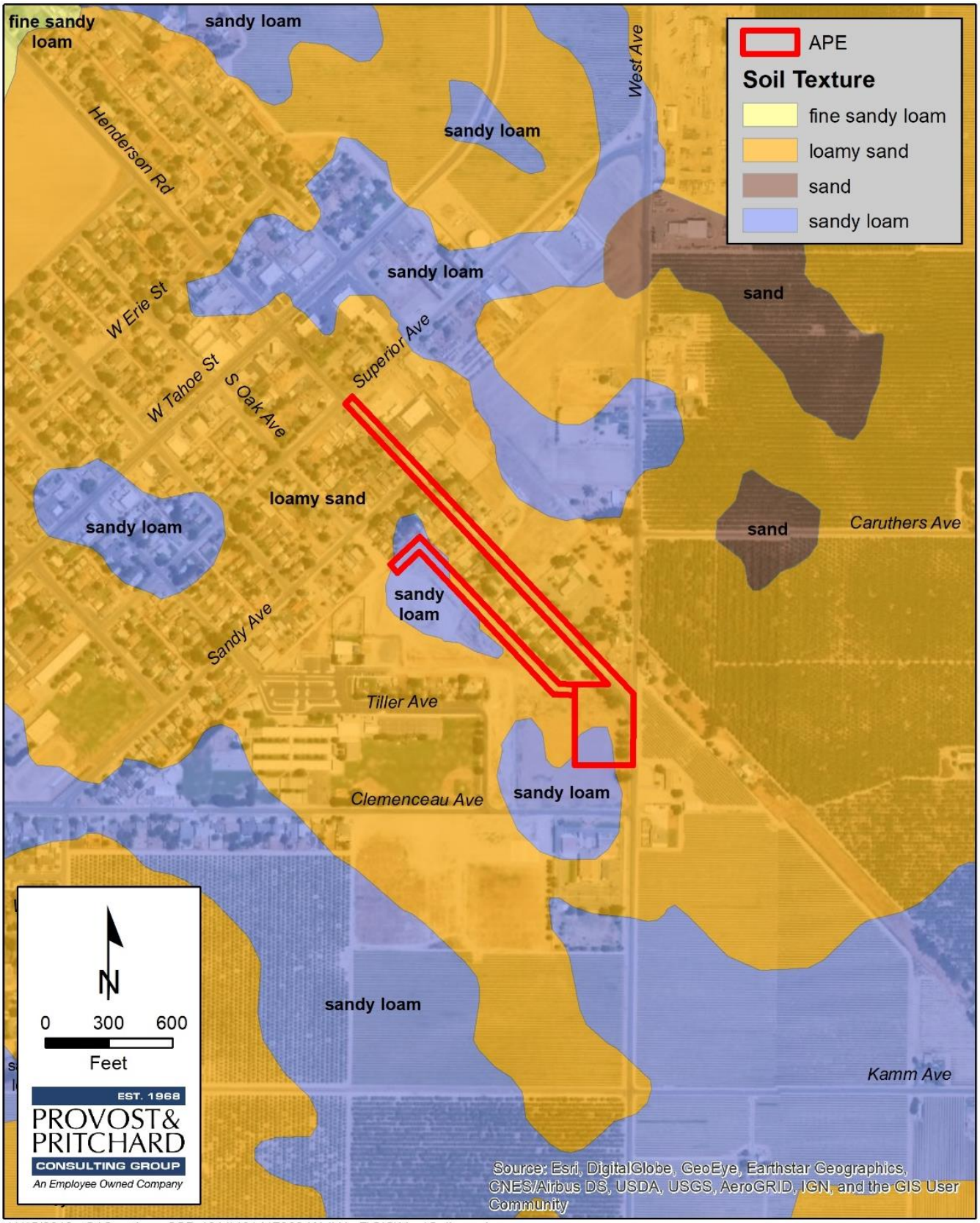

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Figure 5. Soils

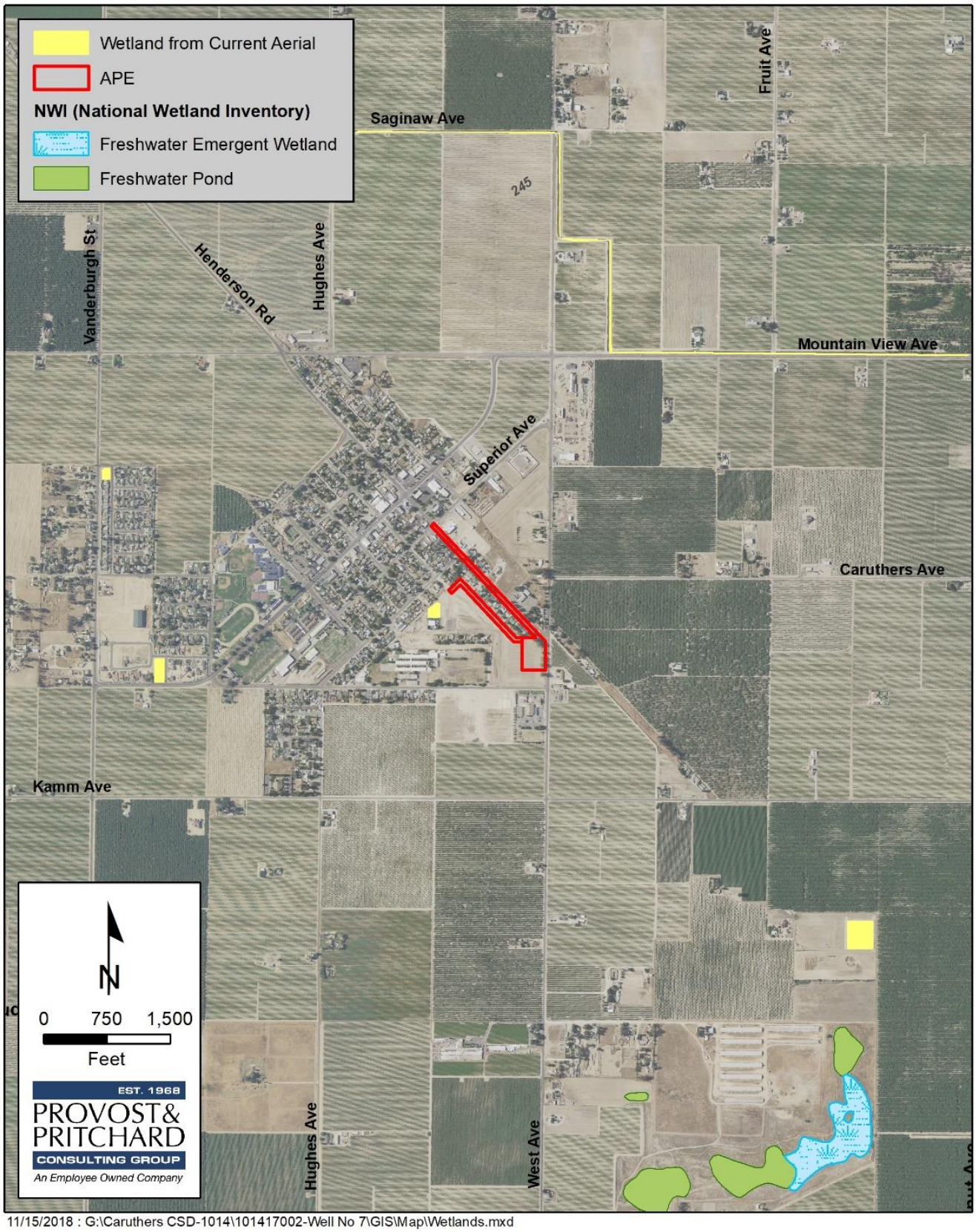

Figure 6. National Wetland Inventory Map

2 Existing Conditions

2.1 Regional Setting

The Project site is located within the lower San Joaquin Valley, part of the Great Valley of California (See **Figure 1**). The Valley is bordered by the Sierra Nevada Mountain Ranges to the east, the Coast Ranges to the west, the Klamath Mountains and Cascade Range to the north, and the Transverse Ranges and Mojave Desert to the south.

Like most of California, the San Joaquin Valley experiences a Mediterranean climate. Warm, dry summers are followed by cool, moist winters. Summer temperatures often reach above 90 degrees Fahrenheit, and the humidity is generally low. Winter temperatures are often below 60 degrees Fahrenheit during the day and rarely exceed 70 degrees. On average, the Central Valley receives approximately 12 inches of precipitation in the form of rainfall yearly, most of which occurs between October and March.

According to the U.S. Geological Survey (USGS) classification system, the Project is located within the Tulare-Buena Vista Lakes watershed; Hydrologic Unit Code (HUC): 18030012.[1] This watershed is broadly defined as "the drainage into the Tulare and Buena Vista Lake closed basins.[2]"

The Project lies entirely within the Kings Groundwater Subbasin of the San Joaquin Valley Groundwater Basin.[3] The principal drainage in the vicinity of the Project is the channelized irrigation canal, Harlan Stevens Ditch, which flows approximately 0.7 mile north-northeast of the site through surrounding agricultural lands. As shown in **Figure 6**, there are no tributaries or distributaries located within the site boundaries or adjacent to the site.

The Project area is surrounded by agricultural lands, ruderal vacant lots, and residential, commercial, and industrial development. Potential Pipeline Alignment No. 2 consists of ruderal vacant land along the rear property line of single-family residences. Roads along Potential Pipeline Alignment No. 1 are paved and include sidewalk and gutter. In contrast, road shoulders are ruderal, unpaved, and consist of compacted dirt near the site of Well No. 7 at Henderson Road and South West Avenue. Directly west of the well site is ruderal land that appears to have been subject to recent ground disturbing activities. There is a small frontage road further west, and beyond that is an elementary school. To the east, beyond South West Avenue, are rural farmhouses and vineyards. Residential development is present to the north, and a Sikh Temple is present to the south, across West Clemenceau Avenue. Photographs of the Project site and surrounding areas are available in **Appendix A** at the end of this document.

[1] USGS Watershed Maps. https://water.usgs.gov/maps.html Accessed 12 October 2018.
[2] Ibid.
[3] DWR Bulletin 118 Groundwater Basin Boundary Assessment Tool. https://gis.water.ca.gov/app/bbat/ Accessed 12 October 2018.

2.2 Project Site

2.3 Biological Communities

Two biological communities were identified within the Project area: developed and ruderal. Surrounding land uses consist of: developed, ruderal, and irrigated vineyard. All habitats of the Project area and surrounding lands are disturbed or frequently maintained and therefore of relatively low quality for most native wildlife species.

2.3.1 Developed

The majority of the Project area within Potential Pipeline Alignment No. 1 consists of development associated with the residential community of Caruthers. Development within the Project area and surrounding lands included church buildings, residences, commercial and industrial businesses, landscaping and flower beds, concrete sidewalk and driveways, and paved streets. Landscaped areas consisted of well-manicured lawns and flowerbeds, and ornamental shrubs and trees such as white mulberry (*Morus alba*) and Canary Island pine (*Pinus canariensis*).

Developed lands of the Project area represent low-quality habitat for the majority of wildlife species. However, trees and shrubs present within landscaped areas may provide nesting habitat for disturbance-tolerant species such as the northern mockingbird (*Mimus polyglottos*), mourning dove (*Zenaida macroura*), western scrub jay (*Aphelocoma californica*), or American robin (*Turdus migratorius*). Similarly, disturbance-tolerant cavity-nesting birds such as invasive European starlings (*Sturnus vulgaris*) and house sparrows (*Passer domesticus*), or birds known to nest on structures such as the house finch (*Haemorhous mexicanus*) and black phoebe (*Sayornis nigricans*) may find suitable nesting habitat within developed areas. Several European starlings were present during the biological survey along with one inactive cavity nest, likely starling in origin, within a mulberry tree in the front yard of a residence on Henderson Road.

A few mammals may also occur within the Project vicinity. Although none of the structures within the Project area contained projections, crevices, or potential roosts large enough to house a western mastiff bat (*Eumops perotis*), a variety of smaller native bat species, such as the special status pallid bat (*Antrozous pallidus*) could potentially roost within the present structures. However, no bat individuals or bat sign was observed during the biological survey and frequent human disturbance makes the possibility of roosting bats unlikely in the developed areas of the Project. Small mammals such as deer mice (*Peromyscus maniculatus*), California voles (*Microtus californicus*), Botta's pocket gophers (*Thomomys bottae*), and California ground squirrels (*Otospermophilus beecheyi*) could occasionally burrow in unpaved surfaces in the Project vicinity, but the population would depend heavily on the presence of predators and the use of rodenticides. No rodent individuals or rodent sign, such as active burrows, tracks, or scat were observed during the field survey. Feral and domestic cats and dogs were present throughout the surveyed areas. Although not observed, Raccoons (*Procyon lotor*), Coyotes (*Canis latrans*), striped skunks (*Mephitis mephitis*), red foxes (*Vulpes vulpes*) and non-native opossums (*Didelphis virginiana*), are all known to frequent developed and ruderal habitats and would be expected to regularly occur within the Project area. A California jackrabbit (*Lepus californicus*) was observed near CCSD Well No. 6 in an area surrounded by vineyards.

Although none were observed during the field survey, some reptiles and amphibians such as the San Joaquin fence lizard (*Sceloporus occidentalis biseriatus*), California toad (*Anaxyrus boreas halophilus*), western side-blotched lizard (*Uta stansburiana elegans*), Sierran treefrog (*Pseudacris sierra*), and the invasive American bullfrog (*Lithobates* catesbeianus) likely occur in the vicinity of the Project. In the winter and spring, the aforementioned amphibian species may breed in small ponding basins or irrigation basins in the vicinity of the Project. Pacific gophersnake (*Pituophis catenifer catenifer*) and California kingsnake (*Lampropeltis californiae*) may occasionally pass through the developed and ruderal areas in the Project area.

2.3.2 Ruderal

Ruderal habitats are characterized by a high level of human disturbance and absence of vegetation or dominated by non-native plant species. The proposed site of Well No.7 on the corner of Henderson Road and South West Avenue is comprised of ruderal lands. Additionally, occasional vacant parcels of land, ruderal in nature, are interspersed with the developed area of residences and businesses along Potential Pipeline Alignment No. 1. At the time of the field survey, all ruderal areas were nearly barren, with the exception of the sparse occurrence of common invasive weeds such as *Erigeron bonariensis, Amaranthus retroflexus, Salsola tragus, Centaurea solstitalis, Amaanthus albus, Latuca serriola, Polygonum aviculare*, and *Spergularia rubra*. Blue gum eucalyptus trees (*Eucalyptus globulus*) lined the road shoulders along Henderson Road and South West Avenue. The Project proposes removal of five of the eleven eucalyptus trees in this area to facilitate placement of Well No. 7 and associated infrastructure.

As mentioned in Section 1.3, in response to the proposal of an alternative pipeline alignment, Provost & Pritchard's biologist, Brooke Fletcher returned to the Project site on November 19, 2018 and performed an additional field survey of Potential Pipeline Alignment No. 2. Ruderal lands littered with garbage and signs of human disturbance comprised Potential Pipeline Alignment No. 2 in its entirety. This pipeline path travels along the rear property line of Henderson Road and Sandy Avenue residences. Nearly all of the fenced backyards contained large, barking, domestic dogs. Feral cats and domestic dogs were also observed throughout the ruderal lot planned for the development of Well No. 7 and Potential Pipeline Alignment No. 2. Heavy ground disturbance from traffic and recent construction activity was present throughout the area planned for Potential Pipeline Alignment No. 2, and several wooden surveying stakes were observed. Additionally, the vacant lot contained two trash receptacles: one 4-yard dumpster and one 40-yard dumpster. Survey of Potential Pipeline No. 2 revealed several small rodent burrows, although none were active. Rabbit tracks and scat were observed, as were coyote, domestic dog and cat, skunk, and opossum tracks.

Ruderal areas within the Project vicinity have minimal value to wildlife due to the frequent human disturbance, presence of domestic dogs and cats, and the absence of vegetative cover. However, some disturbance-tolerant species may make incidental use of these ruderal lands. Wildlife expected to occur within ruderal communities would be similar to those described for the developed lands of the Project area in Section 2.3.1 and therefore, will not be re-stated here.

Survey of the ruderal lands within the Project area revealed an absence of rodent sign and active burrows, although a pair of American kestrels (*Falco sparverius*) were observed hunting over the proposed site of Well No. 7 at Henderson Road and South West Avenue. The aforementioned eucalyptus trees onsite could potentially serve as nesting habitat for raptors, such as a pair of American kestrels. Additionally, avian species foraging in adjacent vineyards may occasionally pass over the ruderal site or perch on a large eucalyptus tree.

2.3.3 Irrigated Vineyard

Vineyards are composed of single-species planted in row, usually supported on wood and wire trellises. Rows under the vines are usually sprayed with herbicides to prevent the growth of herbaceous plants. At the time of the field survey, vineyard habitat, in the form of irrigated grape row crops, was present adjacent to Project areas. Intensive agricultural practices in the vineyards likely limit their value to wildlife; however, some avian and mammalian species have adapted to vineyard habitats. For example, mourning doves (*Zenaida macroura*), American robins (*Turdus migratorius*), killdeer (*Charadrius vociferous*), invasive European starlings (*Sturnus vulgaris*), house finches (*Haemorhous mexicanus*), yellow-rumped warblers (*Setophaga coronata*), and black phoebes (*Sayornis nigricans*) are all known to frequent vineyard habitats in the Central Valley, some for nesting and others for foraging. Rabbits (*Lepus californicus* and *Sylvilagus audubonii*), Botta's pocket gophers (*Thomomys bottae*), and California ground squirrels (*Otospermophilus beecheyi*) are often considered "agricultural pests" due to their prevalence in orchard and vineyard habitats. A California jackrabbit (*Lepus californicus*) was observed near CCSD Well No. 6 in an area surrounded by vineyards.

Additional wildlife expected to occur within vineyard communities would be similar to those described for the developed and ruderal lands of the Project area in Sections 2.3.1 and 2.3.2 and therefore, will not be re-stated here.

The presence of amphibians, reptiles, birds, small mammals, and arthropods is likely to attract foraging raptors and mammalian predators. Various species of bat may also forage for flying arthropods over the row crops. Raptors, such as red-tailed hawks (*Buteo jamaicensis*), barn owls (*Tyto alba*), or the pair of American kestrels observed during the field survey may forage over vineyards in the vicinity of the Project.

2.4 Soils

Hydric soils are not present within the Project as area. As illustrated in **Figure 5**, soils of the site are comprised of Delhi loamy sand and Hesperia sandy loam, both of which are considered Prime Farmland if irrigated. The site lies within Major Land Resource Area (MLRA) 17, which encompasses the Central Valley. MLRA 17 supports naturalized annuals and scattered trees. Dominate herbaceous species include wild barley and oats, soft chess, ripgut and red brome, foxtail fescue, burclover, and filaree. Major wildlife species of this region include jackrabbit, coyote, fox, ground squirrel, pocket gopher, and various passerines.

The complete Natural Resources Conservation Service (NRCS) Web Soil Survey report and explanation of MLRA 17 are available in **Appendix E** at the end of this document.

2.5 Natural Communities of Special Concern

Natural communities of special concern are those that are of limited distribution, distinguished by significant biological diversity, or home to special status species. CDFW is responsible for the classification and mapping of all natural communities in California. Just like the special status plant and animal species, these natural communities of special concern can be found within the CNDDB.

According to CNDDB, there are no recorded observations of natural communities of special concern with potential to occur within the Project area or vicinity. Additionally, no natural communities of special concern were observed during the biological survey.

2.6 Designated Critical Habitat

The USFWS often designates areas of "Critical Habitat" when it lists species as threatened or endangered. Critical Habitat is a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection.

According to CNDDB and IPaC, designated critical habitat is absent from the Project area and vicinity.

2.7 Wildlife Movement Corridors

Wildlife movement corridors are routes that animals regularly and predictably follow during seasonal migration, dispersal from native ranges, daily travel within home ranges, and inter-population movements. Movement corridors in California are typically associated with valleys, ridgelines, and rivers and creeks supporting riparian vegetation.

The Project area does not contain features that would be likely to function as wildlife movement corridors. Furthermore, the Project is located in a region often disturbed by intensive agricultural cultivation practices and human disturbance which would discourage dispersal and migration.

2.8 Special Status Plants and Animals

California contains several "rare" plant and animal species. In this context, "rare" is defined as species known to have low populations or limited distributions. As the human population grows, resulting in urban expansion which encroaches on the already limited suitable habitat, these sensitive species become increasingly more vulnerable to extirpation. State and Federal regulations have provided the CDFW and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to California. Numerous native plants and animals have been formally designated as "threatened" or "endangered" under state and federal endangered species legislation. Other formal designations include "candidate" for listing or "species of special concern" by CDFW. The California Native Plant Society (CNPS) has its list of native plants considered rare, threatened, or endangered. Collectively these plants and animals are referred to as "special status species."

A thorough search of the CNDDB for published accounts of special status plant and animal species was conducted for the *Caruthers* 7.5-minute quadrangle that contains the Project site in its entirety, and for the 8 surrounding quadrangles: *Malaga, Burrel, Conejo, Kearney Park, Riverdale, Raisin, Fresno South,* and *Laton*. An official species list was obtained using the USFWS IPaC system for federally listed species with potential to be affected by the Project. These species, and their potential to occur within the Project area are listed in **Table 1** and **Table 2** on the following pages. Additionally, Section 7 determinations are made in **Table 3** in Section 3.5. Raw data obtained from CNDDB and IPaC are available in **Appendix B** and **Appendix C**, respectively, at the end of this document. Other sources of information utilized in the preparation of this analysis included the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Vascular Plants of California, CalFlora's online database of California native plants, the Jepson Herbarium online database (Jepson eFlora), U.S. Fish and Wildlife Service (USFWS) Environmental Conservation Online System (ECOS), the NatureServe Explorer online database, the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Plants Database, the California Department of Fish and Wildlife (CDFW) California Wildlife Habitat Relationships (CWHR) database, ebird.org, and the California Herps online database. **Figure 2** shows the Project's 7.5-minute quadrangle, according to USGS Topographic Maps; and **Figure 3** shows recorded CNDDB observations within a 5-mile radius of the Project site.

Table 1. List of Special Status Animals with Potential to Occur Onsite and/or in the Vicinity

Species	Status	Habitat	Occurrence on Project Site
western spadefoot (*Spea hammondii*)	CSC	Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Vernal pools or temporary wetlands, lasting a minimum of three weeks, which do not contain bullfrogs, fish, or crayfish are necessary for breeding.	**Absent.** The highly disturbed habitats of the Project area and surrounding lands are unsuitable for this species. Furthermore, the Project area and surrounding lands do not contain water features or riparian vegetation which are required for suitable breeding habitat. The nearest known occurrence of this species was recorded approximately 12 miles southeast of the Project area in 1998.
California tiger salamander (*Ambystoma californiense*)	FT, CT, CWL	Requires vernal pools or seasonal ponds for breeding and small mammal burrows for aestivation. Generally found in grassland and oak savannah plant communities in central California from sea level to 1500 feet in elevation.	**Absent.** The highly disturbed habitats of the Project area and surrounding lands are unsuitable for this species. Furthermore, the Project area and surrounding lands do not contain water features or riparian vegetation which are required for suitable breeding habitat. The nearest known occurrence of this species was recorded approximately 15 miles northeast of the Project area in 1936. The status of this observation has since been updated to "extirpated," which means the habitat has been destroyed or the species has been searched for but unobserved for many years.
western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	FT, CE	Suitable nesting habitat in California includes dense riparian willow-cottonwood and mesquite habitats along a perennial river. Once a common breeding species in riparian habitats of lowland California, this species currently breeds consistently in only two locations in the State: along the Sacramento and South Fork Kern Rivers.	**Absent.** Suitable nesting habitat for this species is absent from the Project area and surrounding lands. The nearest known occurrence of this species was recorded approximately 12 miles east of the Project area in 1898. The status of this observation has since been updated to "possibly extirpated," which means evidence of habitat destruction or extirpation has been received by the CNDDB.

Species	Status	Habitat	Occurrence on Project Site
Swainson's hawk (*Buteo swainsoni*)	CT	Nests in large trees in open areas adjacent to grasslands, grain or alfalfa fields, or livestock pastures suitable for supporting rodent populations.	**Possible.** Swainson's hawks are not uncommon in this portion of the Central Valley. Only a small area of marginal foraging habitat occurs within the Project area and surrounding lands in the form of irrigated vineyard and ruderal parcels. However, no rodents or sign were observed during the biological survey. The Project area's only trees are blue gum eucalyptus along the roadside and ornamental trees associated with landscaping of adjacent properties. The constant disturbance and presence of humans would likely discourage nesting in the few trees large enough to support a raptor nest in the vicinity.
burrowing owl (*Athene cunicularia*)	CSC	Resides in open, dry annual or perennial grasslands, deserts, and scrublands with low growing vegetation. Nests underground in existing burrows created by burrowing mammals, most often ground squirrels.	**Absent.** Suitable habitat for this species is absent from the Project area and surrounding lands. The ruderal parcels present within the vicinity of the Project are not large enough to support a breeding pair of burrowing owls, nor do these fields provide suitable foraging ground as they are highly disturbed and frequently experience vehicular traffic. Furthermore, no ground squirrel individuals or burrows were observed during the biological survey. The nearest known occurrence of this species was recorded approximately 7.5 miles south of the Project area in 2006.
tricolored blackbird (*Agelaius tricolor*)	CCE, CSC	Nests colonially near fresh water in dense cattails or tules, or in thickets of riparian shrubs. Forages in grassland and cropland. Large colonies are often found on dairy farm forage fields.	**Unlikely.** Suitable nesting habitat is absent from the Project area and surrounding lands. Foraging habitat is marginal, at best. The nearest known occurrence of this species was recorded approximately 6.5 miles southwest of the Project area in 2000.
valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	Lives in mature elderberry shrubs of the Central Valley and foothills. Adults are active March to June.	**Absent.** Suitable habitat required by this species is absent from the Project area and surrounding lands. No Elderberry plants were observed within the Project's boundaries.

Species	Status	Habitat	Occurrence on Project Site
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, CT	Underground dens with multiple entrances in alkali sink, valley grassland, and woodland in valleys and adjacent foothills.	**Unlikely.** The highly disturbed habitats of the Project area and fragmentation of the surrounding lands are unsuitable for this species. The nearest known occurrence of this species was recorded approximately 5 miles southeast of the Project area in 1993. The other three local observations were recorded in 1975 during a San Joaquin Kit Fox study. The Project is located approximately 50 miles east of the nearest known core population in Ciervo-Panoche Natural Area. Although some populations of San Joaquin Kit Fox in other parts of California have adapted to an urbanized environment, modern kit fox occurrences are locally scarce. At most, this species could conceivably pass through the Project area during dispersal movements.
western mastiff bat (*Eumops perotis californicus*)	CSC	Found in open, arid to semi-arid habitats, including dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas, where it feeds on insects in flight. Roosts most commonly in crevices in cliff faces, but may also use high buildings and tunnels.	**Unlikely.** Breeding habitat is absent from the Project area and surrounding lands. Foraging habitat of the ruderal fields is marginal, at best. The nearest known occurrence of this species was recorded approximately 7.5 miles northeast of the Project area in 1958.
Fresno kangaroo rat (*Dipodomys nitratoides exilis*)	FE, CE	An inhabitant of alkali sink open grassland environments in western Fresno County. Prefers bare, alkaline, clay-based soils subject to seasonal inundation with more friable soil mounds around shrubs and grasses.	**Absent.** The highly disturbed habitats of the Project area and surrounding lands are unsuitable for this species. The nearest known occurrence of this species was recorded approximately 7.5 miles northwest of the Project area in 1974. The status of this observation has since been updated to "extirpated," which means the habitat has been destroyed or the species has been searched for but unobserved for many years.
Tipton kangaroo rat *(Dipodomys nitratoides nitratoides*)	FE, CE	Burrows in soil. Often found in grassland and shrubland.	**Absent.** The Project area does not provide suitable habitat for this species and is outside of its current known range.
pallid bat (*Antrozous pallidus*)	CSC	Found in grasslands, chaparral, and woodlands, where it feeds on ground- and vegetation-dwelling arthropods, and occasionally takes insects in flight. Prefers to roost in rock crevices, but may also use tree cavities, caves, bridges, and other man-made structures.	**Unlikely.** Individuals could potentially roost in trees or crevices of buildings adjacent to the Project area. The ruderal parcels and adjacent vineyards may provide marginal foraging habitat. The nearest known occurrence of this species was recorded approximately 15 miles north of the Project area in 1909.

Species	Status	Habitat	Occurrence on Project Site
northern California legless lizard (*Anniella pulchra*)	CSC	Found primarily underground, burrowing in loose, sandy soil. Forages in loose soil and leaf litter during the day. Occasionally observed on the surface at dusk and night.	**Unlikely.** The highly disturbed habitats of the Project area are unsuitable for this species. The nearest known occurrence of this species was recorded approximately 15 miles north of the Project area over 100 years ago.
California glossy snake (*Arizona elegans occidentalis)*	CSC	Inhabits arid scrub, rocky washes, grasslands, and chaparral. Prefers open areas with loose soil for easy burrowing.	**Unlikely.** The highly disturbed habitats of the Project area are unsuitable for this species. Furthermore, the Project area is outside of the known range of this species. The nearest known occurrence of this species was recorded approximately 2.9 miles southeast of the Project area in 1939.
coast horned lizard (*Phrynosoma blainvillii*)	CSC	Found in grasslands, coniferous forests, woodlands, and chaparral, primarily in open areas with patches of loose, sandy soil and low-lying vegetation in valleys, foothills, and semi-arid mountains. Frequently found near ant hills and along dirt roads in lowlands along sandy washes with scattered shrubs.	**Unlikely.** The highly disturbed habitats of the Project area are unsuitable for this species. The nearest known occurrence of this species was recorded approximately 15 miles north of the Project area over 100 years ago.
giant gartersnake (*Thamnophis gigas*)	FT, CT	Occurs in marshes, sloughs, drainage canals, irrigation ditches, rice fields, and adjacent uplands. Prefers locations with emergent vegetation for cover and open areas for basking. This species uses small mammal burrows adjacent to aquatic habitats for hibernation in the winter and to escape from excessive heat in the summer.	**Absent.** Habitats required by this species are absent from the Project area and surrounding lands. The nearest known occurrence of this species was recorded approximately 9 miles southwest of the Project area in 1992. This observation corresponds to the Lanare-Burrel population, which is thought to be extirpated due to habitat loss.
California red-legged frog (*Rana draytonii*)	FT	Inhabits perennial rivers, creeks, and stock ponds with vegetative cover within the Coast Range and northern Sierra foothills.	**Absent.** The Project area does not provide suitable habitat for this species and is outside of its current known range.

Species	Status	Habitat	Occurrence on Project Site
blunt-nosed leopard lizard (*Gambelia sila*)	FE, CE, CFP	Inhabits semi-arid grasslands, alkali flats, low foothills, canyon floors, large washes, and arroyos, usually on sandy, gravelly, or loamy substrate, sometimes on hardpan. Often found where there are abundant rodent burrows in dense vegetation or tall grass. Cannot survive on lands under cultivation. Known to bask on kangaroo rat mounds and often seeks shelter at the base of shrubs, in small mammal burrows, or in rock piles. Adults may excavate shallow burrows, but rely on deeper pre-existing rodent burrows for hibernation and reproduction.	**Absent.** Suitable habitat for this species is absent from the Project area and surrounding lands. The nearest known occurrence of this species was recorded approximately 30 miles northwest of the Project area in 1976.
vernal pool tadpole shrimp (*Lepidurus packardi*)	FE	Occurs in vernal pools, clear to tea-colored water, in grass or mud-bottomed swales, and basalt depression pools.	**Absent.** Suitable vernal pool habitat for this species is absent from the Project area and surrounding lands.
vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Occupies vernal pools, clear to tea-colored water, in grass or mud-bottomed swales, and basalt depression pools.	**Absent.** Suitable vernal pool habitat for this species is absent from the Project area and surrounding lands.
Delta smelt (*Hypomesus transpacificus*)	FT, CE	This pelagic and euryhaline species is Endemic to the Sacramento-San Joaquin River Delta, upstream through Contra Costa, Sacramento, San Joaquin, and Solano Counties.	**Absent.** Suitable perennial aquatic habitat for this species is absent from the Project area and surrounding lands.

Table 2. List of Special Status Plants with Potential to Occur Onsite and/or in the Vicinity

Species	Status	Habitat	Occurrence on Project Site
California alkali grass (*Puccinellia simplex*)	CNPS 1B	Found in the San Joaquin Valley and other parts of California in saline flats and mineral springs within valley grassland and wetland-riparian communities at elevations below 3000 feet. Blooms March – May.	**Absent.** Suitable habitat required by this species is absent from the Project area and surrounding lands. The nearest known occurrence of this species was recorded approximately 7.5 miles south of the Project area in 1935. The status of this observation has since been updated to "possibly extirpated," which means evidence of habitat destruction or extirpation has been received by the CNDDB.
California jewelflower (*Caulanthus californicus*)	FE, CE, CNPS 1B	Found in the San Joaquin Valley and Western Traverse Ranges. Occurs on flats and slopes, generally in non-alkaline grassland at elevations between 230 feet and 3280 feet. Blooms February – April.	**Absent.** Suitable habitat required by this species is absent from the Project area and surrounding lands. The nearest known occurrence of this species was recorded approximately 15 miles north of the Project area in 1986. The status of this observation has since been updated to "extirpated," which means the habitat has been destroyed or the species has been searched for but unobserved for many years.
lesser saltscale (*Atriplex minuscula*)	CNPS 1B	Found in the San Joaquin Valley in playas; sandy, alkaline soils in shadescale scrub, valley grassland, and alkali sink communities at elevations below 300 feet. Blooms April – October.	**Absent.** Suitable habitat required by this species is absent from the Project area and surrounding lands. The nearest known occurrence of this species was recorded approximately 5 miles northwest of the Project area in 1937.
brittlescale (*Atriplex depressa*)	CNPS 1B	Found in the San Joaquin Valley and Sacramento Valley in alkali or clay soils in shadescale scrub, valley grassland, alkali sink, and riparian communities at elevations below 1050 feet. Equally likely to occur in wetlands and non-wetlands. Blooms June – October.	**Absent.** Suitable habitat and soils required by this species is absent from the Project area and surrounding lands.
California satintail (*Imperata brevifolia*)	CNPS 2B	Although this facultative species is equally likely to occur in wetlands and non-wetlands, it is often found in wet springs, meadows, streambanks, and floodplains at elevations below 1600 feet. Blooms September – May.	**Absent.** Suitable habitat required by this species is absent from the Project area and surrounding lands. The nearest known occurrence of this species was recorded approximately 15 miles north of the Project area in 1893.

Species	Status	Habitat	Occurrence on Project Site
Panoche pepper-grass (*Lepidium jaredii ssp. album*)	CNPS 1B	Found on steep slopes, washes, alluvial-fans, and clay, sometimes alkaline, within Valley and Foothill Grassland communities in western Fresno County at elevations between 600 feet and 2400 feet. Blooms February – June.	**Absent.** Suitable habitat required by this species is absent from the Project area and surrounding lands. The Project area is also outside of the elevational range of this species. The nearest known occurrence of this species was recorded approximately 8 miles south of the Project area in 1893. The status of this observation has since been updated to "possibly extirpated," which means evidence of habitat destruction or extirpation has been received by the CNDDB.
Madera leptosiphon (*Leptosiphon serrulatus*)	CNPS 1B	Found in openings in foothill woodland, often yellow-pine forest, and chaparral at elevations between 1000 feet and 4300 feet. Blooms April – May.	**Absent.** Suitable habitat required by this species is absent from the Project area and surrounding lands. The Project area is also outside of the elevational range of this species. The nearest known occurrence of this species was recorded approximately 15 miles north of the Project area in 1922.
caper-fruited tropidocarpum (*Tropidocarpum capparideum*)	CNPS 1B	Found in alkaline soils in low hills and valleys, often within Valley Grassland communities, at elevations below 1300 feet. Blooms March – April.	**Absent.** Suitable habitat required by this species is absent from the Project area and surrounding lands. The nearest known occurrence of this species was recorded approximately 15 miles north of the Project area in 1930.

EXPLANATION OF OCCURRENCE DESIGNATIONS AND STATUS CODES

Present:	Species observed on the site at time of field surveys or during recent past
Likely:	Species not observed on the site, but it may reasonably be expected to occur there on a regular basis
Possible:	Species not observed on the site, but it could occur there from time to time
Unlikely:	Species not observed on the site, and would not be expected to occur there except, perhaps, as a transient
Absent:	Species not observed on the site, and precluded from occurring there due to absence of suitable habitat

STATUS CODES

FE	Federally Endangered
FT	Federally Threatened
FPE	Federally Endangered (Proposed)
FPT	Federally Threatened (Proposed)
FC	Federal Candidate
CE	California Endangered
CT	California Threatened
CCT	California Threatened (Candidate)
CFP	California Fully Protected
CSC	California Species of Special Concern
CWL	California Watch List
CCE	California Endangered (Candidate)
CR	California Rare

CNPS LISTING

1A	Plants Presumed Extinct in California
1B	Plants Rare, Threatened, or Endangered in California and elsewhere
2	Plants Rare, Threatened, or Endangered in California, but more common elsewhere

3 Impacts and Mitigation

3.1 Significance Criteria

3.1.1 CEQA

General plans, area plans, and specific projects are subject to the provisions of CEQA. The purpose of CEQA is to assess the impacts of proposed projects on the environment prior to project implementation. Impacts to biological resources are just one type of environmental impact assessed under CEQA, and vary from project to project in terms of scope and magnitude. Projects requiring removal of vegetation may result in the mortality or displacement of animals associated with this vegetation. Animals adapted to humans, roads, buildings, and pets may replace those species formerly occurring on a site. Plants and animals that are state and/or federally listed as threatened or endangered may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed. Such impacts may be considered either "significant" or "less than significant" under CEQA. According to *California Environmental Quality Act, Statute and Guidelines* (AEP 2012), "significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest. Specific project impacts to biological resources may be considered "significant" if they would:

- 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 CDFW or USFWS;

- 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 CDFW or USFWS;

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

- 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;

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Furthermore, CEQA Guidelines Section 15065(a) states that a project may trigger the requirement to make a "mandatory finding of significance" if the project has 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, reduce the number or restrict the range of an endangered, rare or threatened species, or eliminate important examples of the major periods of California history or prehistory."

3.1.2 NEPA

Federal projects are subject to the provisions of NEPA. The purpose of NEPA is to assess the effects of a proposed action on the human environment, assess the significance of those effects, and recommend measures that if implemented would mitigate those effects. As used in NEPA, a determination that certain effects on the human environment are "significant" requires considerations of both context and intensity (CFR 1508.27).

Context means that the significance of an action must be analyzed in terms of the affected environment in which a proposed action would occur. For the purposes of assessing effects of an action on biological resources, the relevant context is often local, which means the analysis requires a comparison of the action area's biological resources to the biological resources of the local area. However, the analysis may also require a comparison of the action area's biological resources with the biological resources of an entire region.

Intensity refers to the severity of impact. In considering intensity of impact to biological resources, it is necessary to address the unique qualities of wetlands and ecologically critical areas that may be affected, the degree to which the action will be controversial, the degree to which the effects will be controversial, the degree to which the effects will be uncertain, the degree to which the action will establish a precedent for future actions with potentially significant effects, and the potential for the action to result in cumulatively significant effects.

The effects of an action on some biological resources are generally considered to be "significant." An action that adversely affects federally listed threatened or endangered species, waters of the United States, or migratory movements of fish and wildlife are some examples of significant effects.

NEPA requires disclosure of feasible mitigation measures for the effects of an action on the environment. Suitable measures include the following:

a) Avoidance of the effect by not taking a certain action or parts of an action.
b) Mitigation of the effect by limiting the degree or magnitude of the action and its implementation.
c) Rectifying the effect by repairing, rehabilitating, or restoring the affected environment.
d) Reducing or eliminating the effect over time by preservation and maintenance operations throughout the life of the action.
e) Compensating for the effect by replacing or providing substitute resources or environments.

This report identifies likely effects of an action, identifies those that may be considered significant pursuant to the provisions of NEPA, and provides mitigation measures to avoid adverse effects to biological resources.

3.2 Relevant Goals, Policies, and Laws

3.2.1 Fresno County General Plan

The Fresno County General Plan[4] sets forth the following goals and policies that protect biological resources and which have potential relevance to the Project's CEQA review:

- The County shall require adequate buffer zones between construction activities and significant wildlife resources, including both onsite habitats that are purposely avoided and significant habitats that are adjacent to the project site, in order to avoid the degradation and disruption of critical life cycle activities such as breeding and feeding. The width of the buffer zone should vary depending on the location, species, etc. A final determination shall be made based on informal consultation with the US Fish and Wildlife Service and/or the California Department of Fish and Wildlife.

- The County shall ensure that landmark trees are preserved and protected whenever possible.

- The County shall establish procedures for identifying and preserving rare, threatened, and endangered plant species that may be adversely affected by public or private development projects. As part of this process, the County shall require, as part of the environmental review process, a biological resources evaluation of the project site by a qualified biologist. The evaluation shall be based on field reconnaissance performed at the appropriate time of year to determine the presence or absence of significant plant resources and/or special-status plant species. Such evaluation shall consider the potential for significant impact on these resources and shall either identify feasible mitigation measures or indicate why mitigation is not feasible.

- The County shall require developers to take into account a site's natural topography with respect to the design and siting of all physical improvements in order to minimize grading.

- The County should encourage landowners to maintain natural vegetation or plant suitable vegetation along fence lines, drainage and irrigation ditches, and on unused or marginal land for the benefit of wildlife.

3.2.2 Threatened and Endangered Species

Permits may be required from the USFWS and/or CDFW if activities associated with a Project have the potential to result in the "take" of a species listed as threatened or endangered under the federal and/or state Endangered Species Acts. "Take" is defined by the state of California as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill" (California Fish and Game Code, Section 86). "Take" is more broadly defined by the federal Endangered Species Act to include "harm" (16 USC, Section 1532(19), 50 CFR, Section 17.3). The CDFW and the USFWS are responding agencies under CEQA. Both agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

3.2.3 Designated Critical Habitat

When species are listed as threatened or endangered, the USFWS often designates areas of "Critical Habitat" as defined by section 3(5)(A) of the federal Endangered Species Act (ESA). Critical Habitat is a term defined in the ESA as a specific geographic area that contains features essential for the conservation of a threatened

[4] Fresno County General Plan. https://www.co.fresno.ca.us/departments/public-works-planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/general-plan-maps Accessed 12 October 2018.

or endangered species and that may require special management and protection. Critical Habitat is a tool that supports the continued conservation of imperiled species by guiding cooperation with the federal government. Designations only affect federal agency actions or federally funded or permitted activities. Critical Habitat does not prevent activities that occur within the designated area. Only activities that involve a federal permit, license, or funding and are likely to destroy or adversely modify Critical Habitat will be affected.

3.2.4 Migratory Birds

The Federal Migratory Bird Treaty Act (MBTA: 16 USC 703-712) prohibits killing, possessing, or trading in any bird species covered in one of four international conventions to which the United States is a party, except in accordance with regulations prescribed by the Secretary of the Interior. The name of the act is misleading, as it actually covers almost all bird's native to the United States, even those that are non-migratory. The MBTA encompasses whole birds, parts of birds, and bird nests and eggs. Additionally, California Fish and Game Code makes it unlawful to take or possess any non-game bird covered by the MBTA (Section 3513), as well as any other native non-game bird (Section 3800).

3.2.5 Birds of Prey

Birds of prey are protected in California under provisions of Fish and Game Code (Section 3503.5), which states that it is unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks and eagles) or Strigiformes (owls), as well as their nests and eggs. The bald eagle and golden eagle are afforded additional protection under the federal Bald and Golden Eagle Protection Act (16 USC 668), which makes it unlawful to kill birds or their eggs.

3.2.6 Nesting Birds

In California, protection is afforded to the nests and eggs of all birds. California Fish and Game Code (Section 3503) states that it is "unlawful to take, possess, or needlessly destroy the nest or eggs of any bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Breeding-season disturbance that causes nest abandonment and/or loss of reproductive effort is considered a form of "take" by the CDFW.

3.2.7 Wetlands and other "Jurisdictional Waters"

Natural drainage channels and adjacent wetlands may be considered "waters of the United States" or "jurisdictional waters" subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE). The extent of jurisdiction has been defined in the Code of Federal Regulations but has also been subject to interpretation of the federal courts. Jurisdictional waters generally include:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands;
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce;
- All impoundments of waters otherwise defined as waters of the United States under the definition;
- Tributaries of waters identified in paragraphs (a)(1)-(4) (i.e. the bulleted items above).

As determined by the United States Supreme Court in its 2001 *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (*SWANCC*) decision, channels and wetlands isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds. Similarly, in its 2006 consolidated *Carabell/Rapanos* decision, the U.S. Supreme Court ruled that a

significant nexus between a wetland and other navigable waters must exist for the wetland itself to be considered a navigable and therefore jurisdictional water. Furthermore, the Supreme Court clarified that the Environmental Protection Agency (EPA) and the USACE will not assert jurisdiction over ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

The USACE regulates the filling or grading of Waters of the U.S. under the authority of Section 404 of the Clean Water Act. The extent of jurisdiction within drainage channels is defined by "ordinary high water marks" on opposing channel banks. All activities that involve the discharge of dredge or fill material into Waters of the U.S. are subject to the permit requirements of the USACE. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values. No permit can be issued until the Regional Water Quality Control Board (RWQCB) issues a Section 401 Water Quality Certification (or waiver of such certification) verifying that the proposed activity will meet state water quality standards.

Under the Porter-Cologne Water Quality Control Act of 1969, the State Water Resources Control Board has regulatory authority to protect the water quality of all surface water and groundwater in the State of California ("Waters of the State"). Nine RWQCBs oversee water quality at the local and regional level. The RWQCB for a given region regulates discharges of fill or pollutants into Waters of the State through the issuance of various permits and orders. Discharges into Waters of the State that are also Waters of the U.S. require a Section 401 Water Quality Certification from the RWQCB as a prerequisite to obtaining certain federal permits, such as a Section 404 Clean Water Act permit. Discharges into all Waters of the State, even those that are not also Waters of the U.S., require Waste Discharge Requirements (WDRs), or waivers of WDRs, from the RWQCB. The RWQCB also administers the Construction Storm Water Program and the federal National Pollution Discharge Elimination System (NPDES) program. Projects that disturb one or more acres of soil must obtain a Construction General Permit under the Construction Storm Water Program. A prerequisite for this permit is the development of a Storm Water Pollution Prevention Plan (SWPPP) by a certified Qualified SWPPP Developer. Projects that discharge wastewater, storm water, or other pollutants into a Water of the U.S. may require a NPDES permit.

CDFW has jurisdiction over the bed and bank of natural drainages and lakes according to provisions of Section 1601 and 1602 of the California Fish and Game Code. Activities that may substantially modify such waters through the diversion or obstruction of their natural flow, change or use of any material from their bed or bank, or the deposition of debris require a Notification of Lake or Streambed Alteration. If CDFW determines that the activity may adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement will be prepared. Such an agreement typically stipulates that certain measures will be implemented to protect the habitat values of the lake or drainage in question.

Jurisdictional waters are absent from the Project area, and the Project does not propose a loss or degradation of jurisdictional waters.

3.3 Potentially Significant Project-Related Impacts and Mitigation

Species identified as candidate, sensitive, or special status species in local or regional plans policies or regulations by CDFW or the USFWS that have the potential to be impacted by the Proposed Project are identified below with corresponding mitigation measures.

3.3.1 General Mitigation Measures

Prior to the start of construction, all personnel associated with construction of the Project shall be trained to be able to identify these candidate, sensitive, or special status species in order to prevent impacts to sensitive resources; therefore, the following general mitigation measures shall be implemented:

> ***Mitigation Measure 3.3.1 (WEAP Training):*** Prior to initiating construction activities (including staging and mobilization), all personnel associated with Project construction shall attend mandatory

Worker Environmental Awareness Program (WEAP) training, conducted by a qualified biologist, to aid workers in identifying special status resources that may occur in the Project area. The specifics of this program shall include identification of the sensitive species and suitable habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area. A fact sheet conveying this information, along with photographs or illustrations of sensitive species with potential to occur onsite, shall also be prepared for distribution to all contractors, their employees, and all other personnel involved with construction of the Project. All employees shall sign a form documenting that they have attended WEAP training and understand the information presented to them.

3.3.2 Project-Related Mortality and/or Disturbance of Nesting Raptors, Migratory Birds, and Special Status Birds (Including Swainson's Hawk)

The Project proposes removal of five eucalyptus trees to facilitate placement of Well No. 7 and associated infrastructure along Henderson Road near South West Avenue. Removal of these trees could result in a mortality, nest failure, and reduction of suitable nesting habitat. Raptors such as the red-tailed hawk or American kestrel could potentially nest in mature trees within the Project area. Smaller trees or shrubs could be inhabited by a variety of migratory and resident passerines, and buildings or other structures could be utilized by the black phoebe or house finch. If birds were to be nesting on or adjacent to the Project area at the time of construction, Project-related activities could result in the abandonment of active nests or direct mortality to these birds. Construction activities that adversely affect the nesting success of raptors or result in mortality of individual birds constitute a violation of State and federal laws and would be considered a significant impact under CEQA and NEPA.

Although not observed during the biological survey, Swainson's hawks are not uncommon in this portion of the Central Valley. Only a small area of marginal foraging habitat occurs within the Project area and surrounding lands in the form of irrigated vineyard and ruderal parcels. The Project area's only trees are blue gum eucalyptus along the roadside and ornamental trees associated with landscaping or adjacent properties. The constant disturbance and presence of humans would likely discourage nesting in the few trees large enough to support a raptor nest in the vicinity. Regardless, Swainson's hawk individuals could potentially nest within the large trees of the Project site or surrounding area. Project activities that adversely affect nesting success or result in mortality of Swainson's hawks would violate State and federal laws and would be considered a significant impact under CEQA and NEPA.

As previously mentioned, due to the developed and ruderal nature of the lands, nesting and foraging habitat for raptors, resident and migratory birds, and special status birds, such as Swainson's hawks within the Project area is marginal, at best. Habitat of higher foraging and nesting value is regionally abundant. Therefore, the development resulting from implementation of the Project would not be considered a significant loss of foraging or nesting habitat under CEQA or NEPA. Furthermore, in the unlikely event that a Swainson's hawk or other avian species is foraging within the Project site during construction activities, the individual would be expected to fly away from disturbance they encounter, subsequently eliminating the risk of injury or mortality while foraging.

Nesting bird season is generally accepted as February 1 through August 31; however, Swainson's hawk nesting season is generally accepted as March 1 through September 15. For simplicity, these timeframes have been combined.

Implementation of the following measures will reduce potential impacts to nesting raptors, migratory birds, and special status birds, including Swainson's hawk to a less than significant level under CEQA and NEPA, and will ensure compliance with State and federal laws protecting these avian species.

Mitigation. The following measures will be implemented prior to the start of construction:

> ***Mitigation Measure 3.3.2a (Avoidance):*** The Project's construction activities shall occur, if feasible, between September 16 and January 31 (outside of nesting bird season) in an effort to avoid impacts to nesting birds.
>
> ***Mitigation Measure 3.3.2b (Pre-construction Surveys):*** If activities must occur within nesting bird season (February 1 to September 15), a qualified biologist shall conduct pre-construction surveys for active nests within 30 days prior to the start of construction. The survey shall include the proposed work area and surrounding lands within 0.5 mile. If no active nests are observed, no further mitigation is required. Raptor nests are considered "active" upon the nest-building stage.
>
> ***Mitigation Measure 3.3.2c (Establish Buffers):*** On discovery of any active nests near work areas, the biologist shall determine appropriate construction setback distances based on applicable CDFW and/or USFWS guidelines and/or the biology of the species in question. Construction buffers shall be identified with flagging, fencing, or other easily visible means, and shall be maintained until the biologist has determined that the nestlings have fledged.

3.4 Less Than Significant Project-Related Impacts

3.4.1 Project-Related Impacts to Special Status Plant Species

Eight special status plant species have been documented in the Project vicinity, including California alkali grass (*Puccinellia simplex*), California jewelflower (*Caulanthus californicus*), lesser saltscale (*Atriplex miniscula*), brittlescale (*Atriplex depressa*), California satintail (*Imperata brevifolia*), Panoche pepper-grass (*Lepidium jaredii ssp. album*) Madera leptosiphon (*Leptosiphon serrulatus*), and caper-fruited tropidocarpum (*Tropidocarpum capparideum*). As explained in **Table 2**, all of the aforementioned plant species are absent from the Project area due to past and ongoing disturbance and/or the absence of suitable habitat. Therefore, the implementation of the Project will have no effect on individual plants or regional populations of these special status plant species. Mitigation measures are not warranted.

3.4.2 Project-Related Impacts to Special Status Animal Species Absent From, or Unlikely to Occur on, the Project Site

Of the 21 regionally occurring special status species, 20 are considered absent or unlikely to occur within the Project area due to past or ongoing disturbance and/or absence of suitable habitat. As explained in **Table 1**, the following species were deemed absent from the Project area: western spadefoot (*Spea hammondii*), California tiger salamander (*Ambystoma californiense*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), burrowing owl (*Athene cunicularia*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), Fresno kangaroo rat (*Dipodomys nitratoides exilis*), Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*), giant gartersnake (*Thamnophis gigas*), California red-legged frog *(Rana draytonii*), blunt-nosed leopard lizard (*Gambelia sila*), vernal pool tadpole shrimp (*Lepidurus packardi*), vernal pool fairy shrimp (*Branchinecta lynchi*), and Delta smelt (*Hypomesus transpacificus*); and the following species were deemed unlikely to occur within the Project area: tricolored blackbird (*Agelaius tricolor*), San Joaquin kit fox (*Vulpes macrotis mutica*), western mastiff bat (*Eumops perotis californicus*), pallid bat (*Antrozous pallidus*), California glossy snake (*Arizona elegans occidentalis),* northern California legless lizard (*Anniella pulchra*), and coast horned lizard (*Phrynosoma blainvillii*). Therefore, implementation of the Project will have no impact on these 20 special status species through construction mortality, disturbance, or loss of habitat. Mitigation measures are not warranted.

3.4.3 Project-Related Impacts to Jurisdictional Waters, Wetlands, Navigable Waters, Wild and Scenic Rivers, or other Water Features, and Riparian Habitat

As shown in **Figure 6**, jurisdictional waters, wetlands, navigable waters, wild and scenic rivers, or other water features, and riparian habitat is absent from the Project area and adjacent lands. Therefore, implementation of the Project will have no impact on the aforementioned biological resources. Furthermore, the Project will not impact any bodies of water and will not require compliance with the Fish and Wildlife Coordination Act. Mitigation measures are not warranted.

3.4.4 Project-Related Impacts to Wildlife Movement Corridors

The Project area does not contain features that would be likely to function as wildlife movement corridors. Furthermore, the Project is located in a region often disturbed by intensive agricultural cultivation practices and human disturbance which would discourage dispersal and migration. Therefore, implementation of the Project will have no impact on wildlife movement corridors. Mitigation is not warranted.

3.4.5 Project-Related Impacts to Critical Habitat

Designated critical habitat is absent from the Project area and surrounding lands. Therefore, there will be no impact to critical habitat, and mitigation is not warranted.

3.4.6 Local Policies or Habitat Conservation Plans

Proposed Project design appears to be consistent with the goals and policies of the Fresno County General Plan. There are no known habitat conservation plans in the Project vicinity. Mitigation is not warranted.

3.4.7 Coastal Zone and Coastal Barriers Resources Act

The Project is not located within the coastal zone. The Project will not impact or be located within or near the Coastal Barrier Resources System or its adjacent wetlands, marshes, estuaries, inlets, and near-shore waters. Mitigation is not warranted.

3.4.8 Project-Related Impact to Essential Fish Habitat

Essential Fish Habitat (EFH) and Habitat Areas of Particular Concern (HAPC) are absent from the Project area and surrounding lands, and consultation with the National Marine Fisheries (NMFS) Service will not be required. Query results of the NMFS EHF Mapper can be found in **Appendix D** at the end of this document. Mitigation is not warranted.

3.5 Section 7 Determination

In addition to the effects analysis performed in Sections 2 and 3 of this document, **Table 3** summarizes Project effect determinations for Federally Listed Species found on the USFWS IPaC list generated on October 11, 2018 and again on November 16, 2018 to include Potential Pipeline Alignment No. 2 (**Appendix C**), in accordance with Section 7 of the Endangered Species Act.

Table 3. Section 7 Determinations

Species	Determination	Rationale for Determination
Fresno kangaroo rat (*Dipodomys nitratoides exilis*)	**No effect**	Habitat absent. No observations in the vicinity for more than 40 years.
San Joaquin kit fox (*Vulpes macrotis mutica*)	**No effect**	Habitat absent. No observations in the vicinity for 25 years.
blunt-nosed leopard lizard (*Gambelia sila*)	**No effect**	Habitat absent. The nearest known occurrence of this species was recorded approximately 30 miles northwest of the Project area in 1976.
giant gartersnake (*Thamnophis gigas*)	**No effect**	Habitat absent. Project area is outside of the known distribution range of this species.
California red-legged frog (*Rana draytonii*)	**No effect**	Habitat absent. Project area is outside of the known distribution range of this species.
California tiger salamander (*Ambystoma californiense*)	**No effect**	Habitat absent. The nearest known occurrence of this species was recorded approximately 15 miles northeast of the Project area in 1936.
Delta smelt (*Hypomesus transpacificus*)	**No effect**	Habitat absent. Water features absent from the site and surrounding areas. The Project does not include lake or streambed altering activities. Therefore, there is no potential for indirect downstream effects.
vernal pool fairy shrimp (*Branchinecta lynchi*)	**No effect**	Habitat absent.
vernal pool tadpole shrimp (*Lepidurus packardi*)	**No effect**	Habitat absent.

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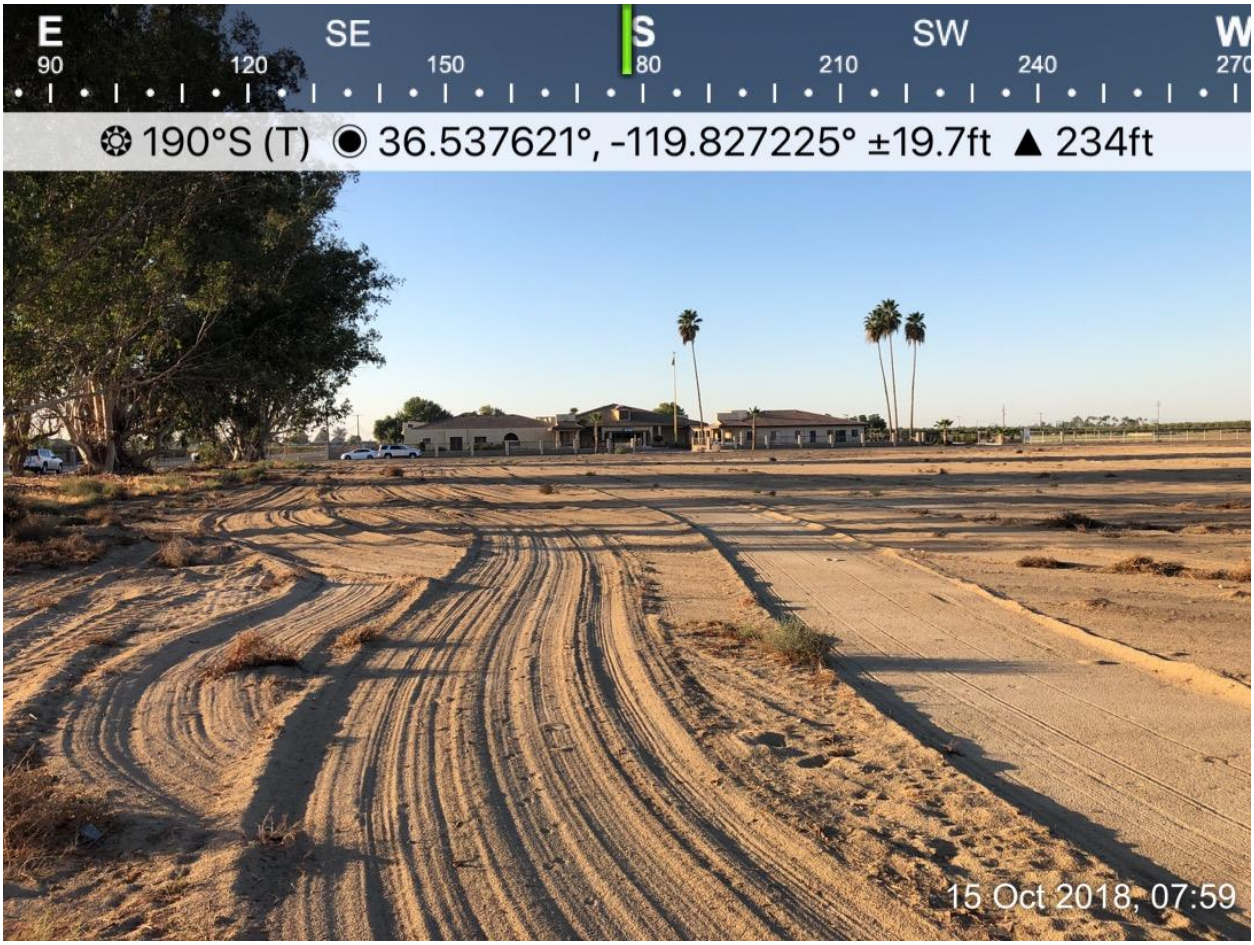
Appendix A. Selected Photographs of the Project Site

Photograph 1: Overview of the proposed site of Well No. 7 and related infrastructure.

Photograph 2: Overview of the proposed site of Well No. 7 and related infrastructure.

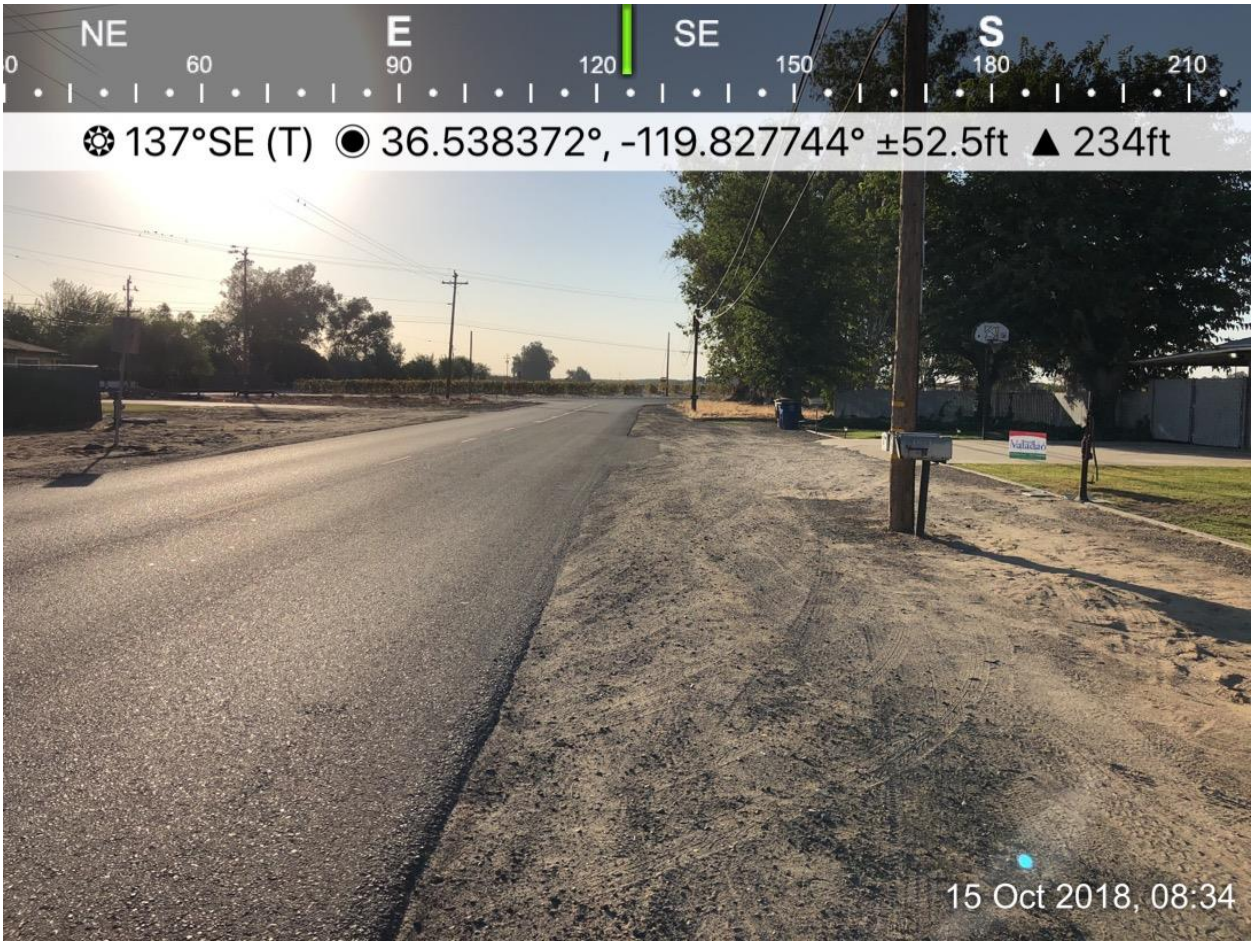


Photograph 3: Overview of the proposed site of Well No. 7 and related infrastructure.

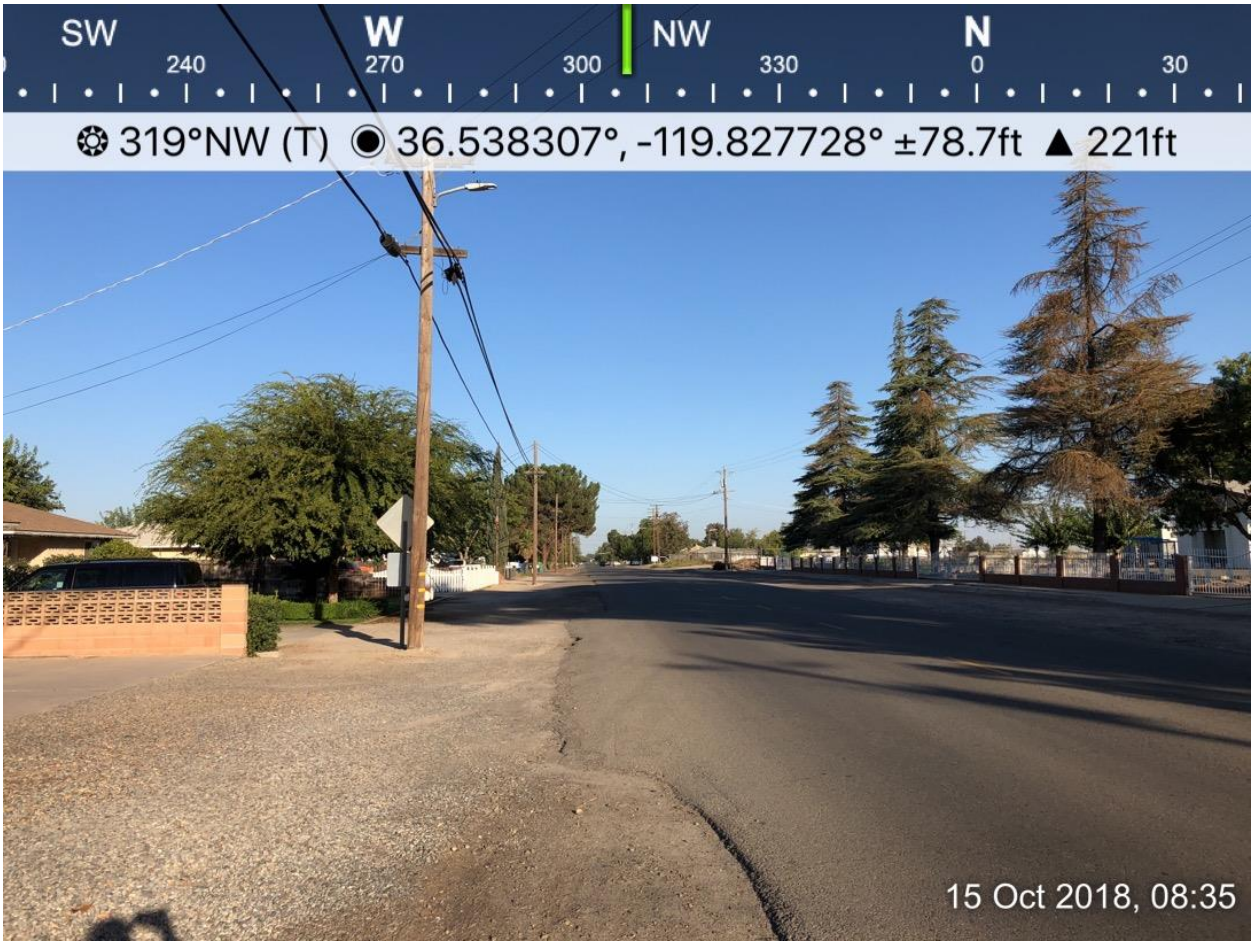
Photograph 4: Overview of the proposed site of Well No. 7 and related infrastructure.

Photograph 5: Overview of the proposed site of Well No. 7 and related infrastructure.

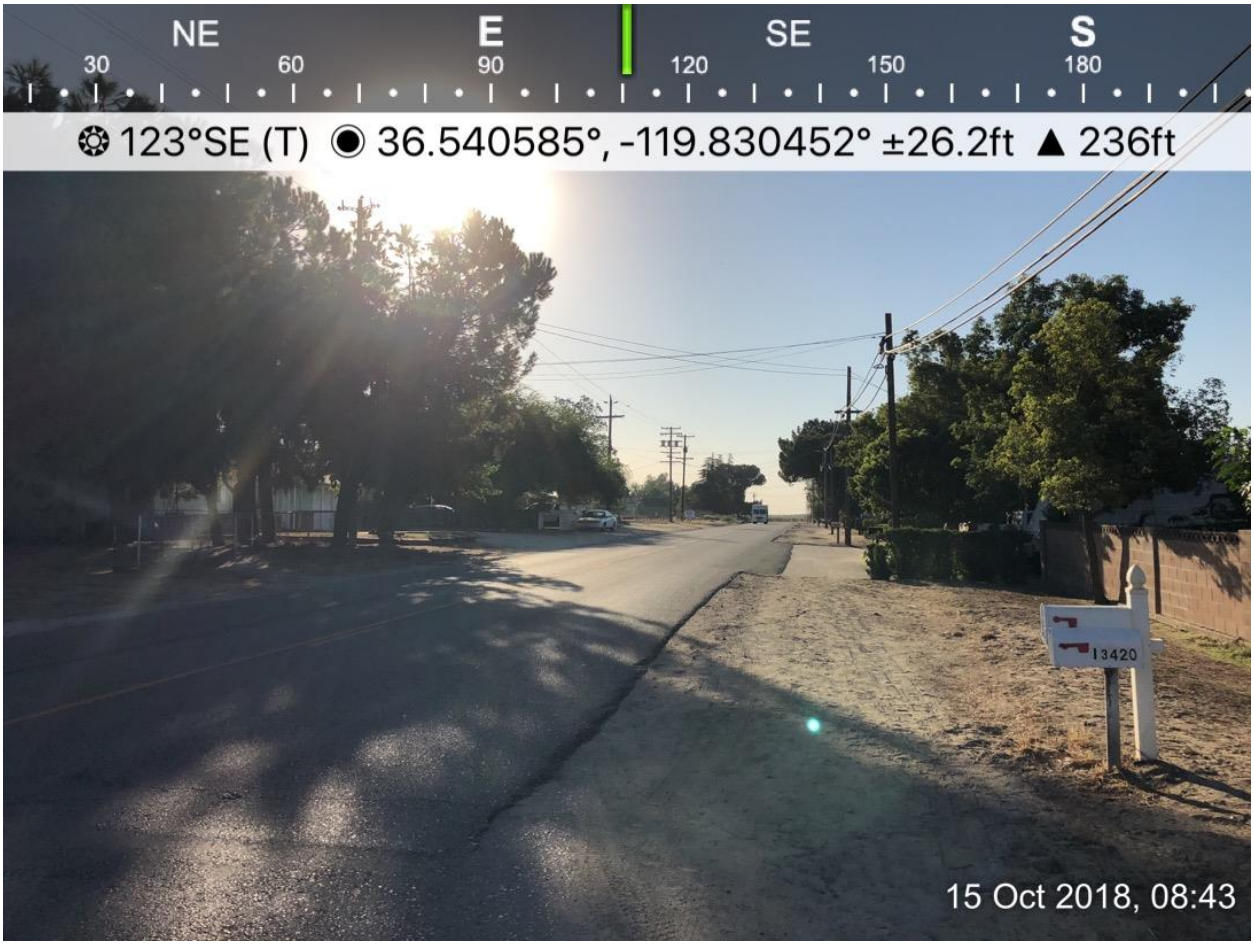
Photograph 6: Inactive cavity nest, likely of European starling origin, in an ornamental mulberry tree in the front yard of a residence on Henderson Road along Potential Pipeline Alignment No. 1.



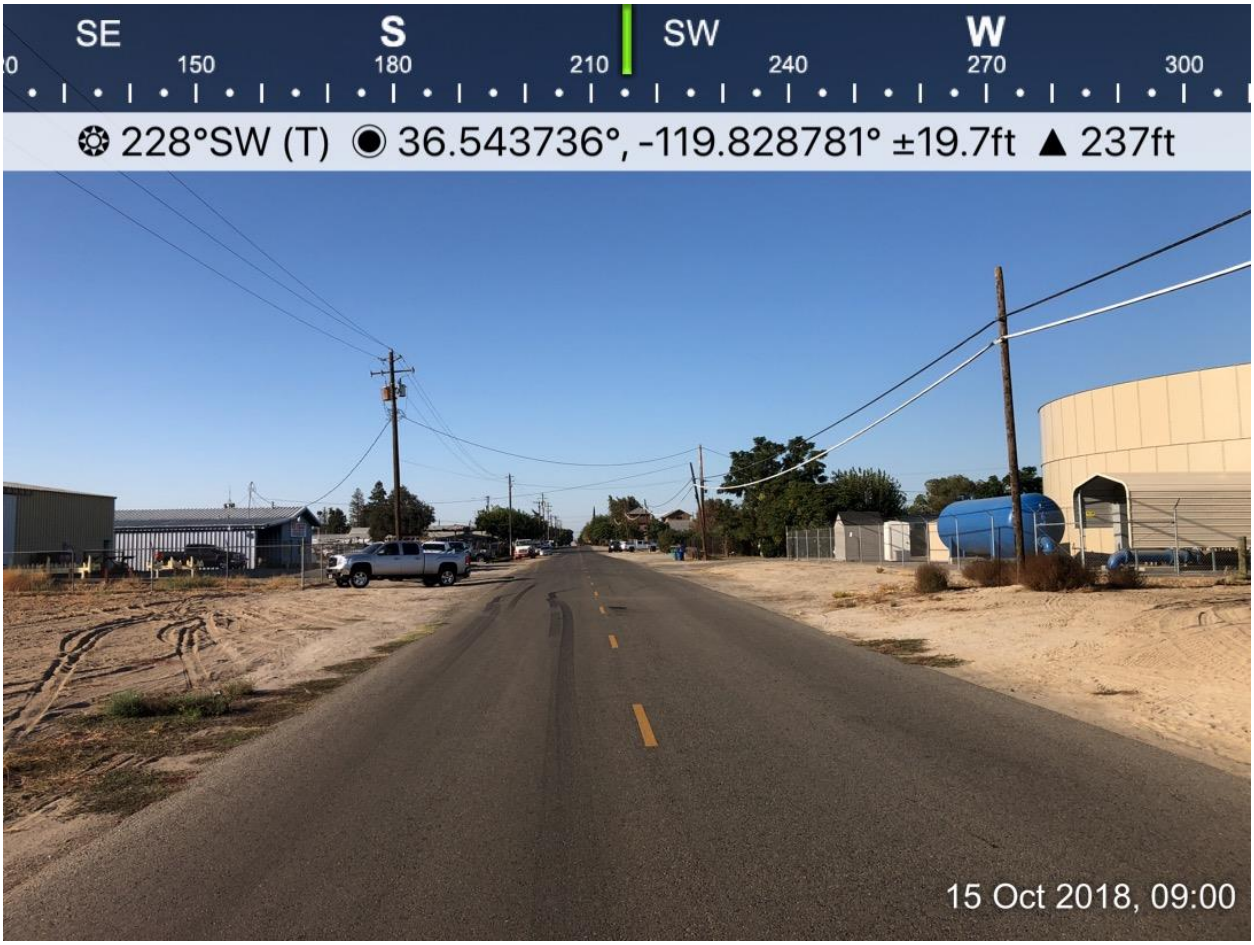
Photograph 7: Henderson Road along Potential Pipeline Alignment No. 1, facing South West Avenue.



Photograph 8: Henderson Road along Potential Pipeline Alignment No. 1, facing West Superior Avenue.



Photograph 9: Potential Pipeline Alignment No. 1 along Henderson Road at West Sandy Avenue facing towards South West Avenue.



Photograph 10: West Superior Ave at the site of Well No. 6, facing South Henderson Road.

Photograph 11: Blue gum eucalyptus trees lining the shoulder of South West Avenue and Henderson Road near the proposed site of Well No. 7.

Photograph 12: The five blue gum eucalyptus trees along Henderson Road near South West Avenue that are planned for removal to facilitate placement of Well No. 7 and associated infrastructure.

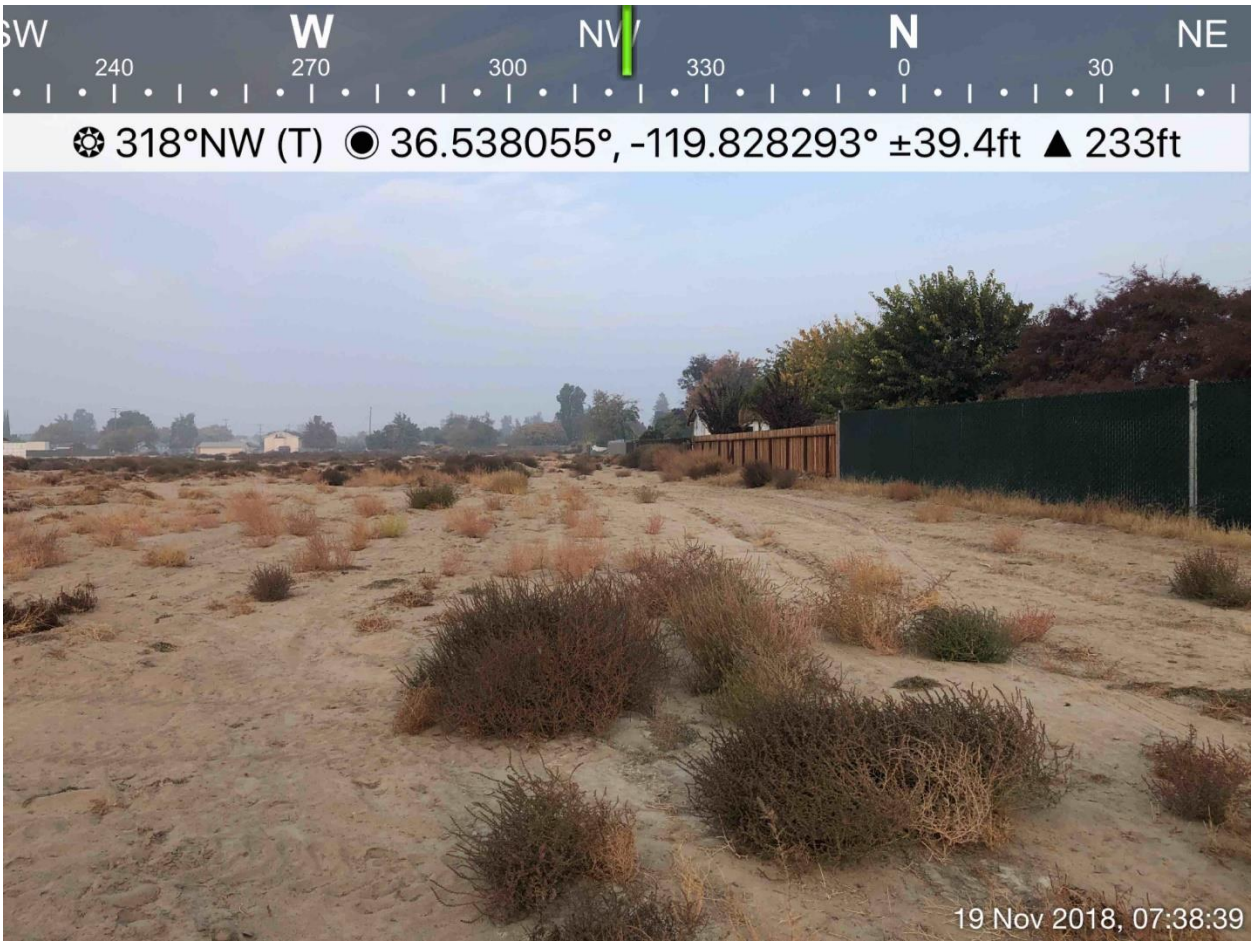
Photograph 13: Potential Pipeline No. 1 connection (Potential Connection No. 1) near the intersection of Henderson Road and West Superior Avenue, facing towards South West Avenue. Shown are a tire shop on the southwest corner and a PG&E yard on the northeast corner.

Photograph 14: Potential Pipeline Alignment No. 1. Ruderal vacant lot on the northeast side of Henderson Road.

Photograph 15: Potential Pipeline Alignment No. 1. Ruderal storm drainage basin at the PG&E yard on the northeast corner of Henderson Road and West Superior Avenue.

Photograph 16: View from the site of Well No. 7 to Potential Pipeline Alignment No. 2. A recently placed wooden survey stake is visible in the foreground.

Photograph 17: View from Potential Pipeline Alignment No. 2 to the site of Well No. 7. This photograph also shows the five Eucalyptus trees planned for removal along Henderson Road.



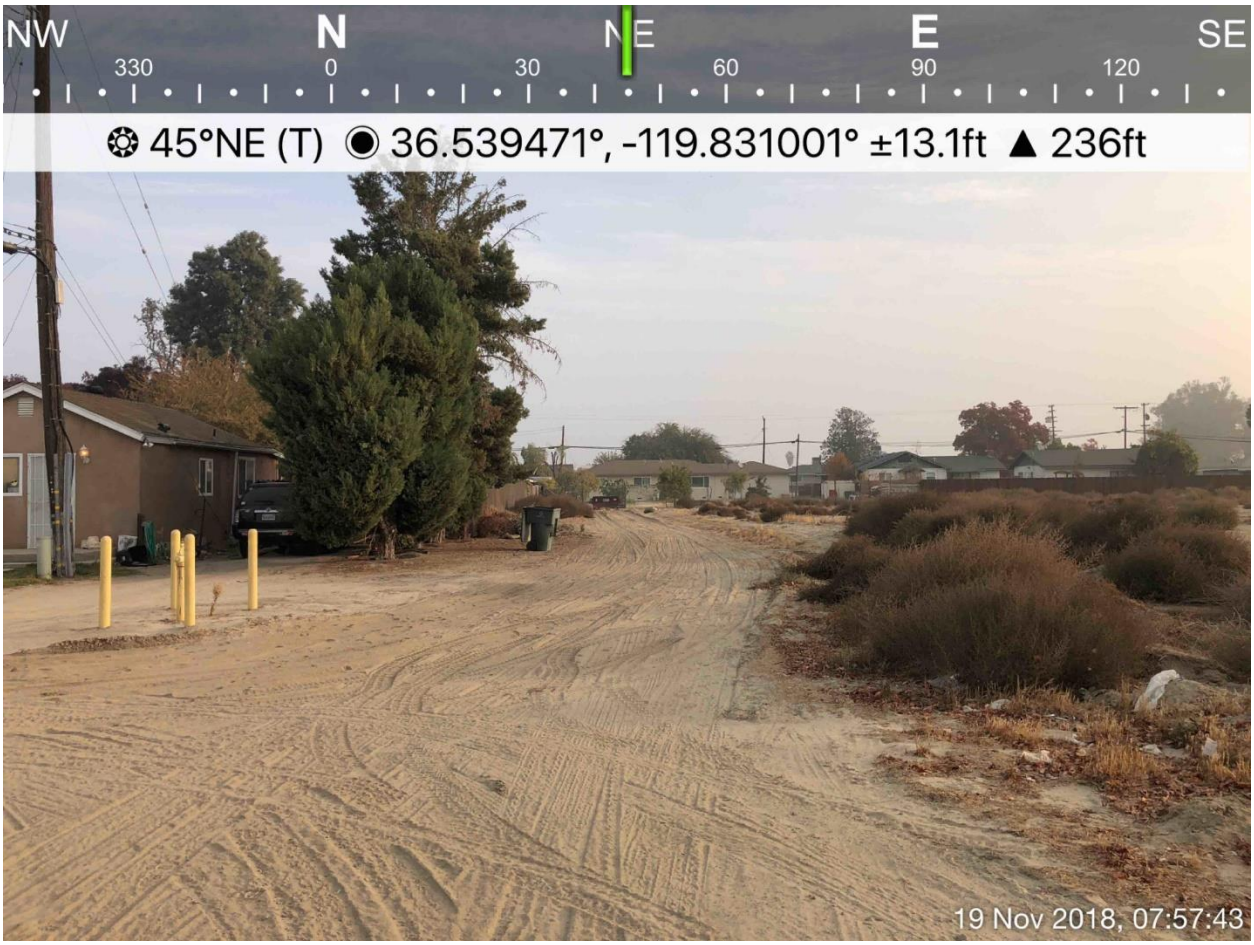
Photograph 18: Overview of Potential Pipeline Alignment No. 2, along the rear of Henderson Road residences.

Photograph 19: An example of recent ground disturbance present within the area planned for Potential Pipeline Alignment No. 2.

Photograph 20: Fenced domestic dogs adjacent to Potential Pipeline Alignment No. 2.

Photograph 21: Potential Pipeline Alignment No. 2, from the rear of Sandy Avenue residences. 4-yard trash dumpster is visible in the foreground.

Photograph 22: Overview of Potential Pipeline Alignment No. 2 along the rear of the Sandy Avenue residences, facing towards the proposed connection (Potential Connection No. 2) and Well No. 5.



Photograph 23: Overview of Potential Pipeline Alignment No. 2 along the rear of the Sandy Avenue residences. The proposed connection (Potential Connection No. 2) at Oak Avenue is visible in the foreground.

Photograph 24: Well No. 5. An elementary school campus is visible in the background.

Photograph 25: View from Well No. 5 to the proposed connection (Potential Connection No. 2) at Oak Avenue. The fenced area visible in the background of this photo contains a dry and ruderal ponding basin.

Photograph 26: Dry and ruderal ponding basin, enclosed with a slatted fence, adjacent to the elementary school campus. This ponding basin lies between Well No. 5 and Potential Connection No. 2, and is therefore outside of the area expected to be impacted by construction.

Photograph 27: Heavy ground disturbance from recent construction activity within the ruderal lot adjacent to the elementary school campus.

Photograph 28: Oak Avenue (dirt) and Potential Connection No. 2, facing Sandy Avenue (paved).

Photograph 29: View from Potential Pipeline Alignment No. 2 to pre-compacted dirt alley (potential access road). Henderson Road (paved) is visible in the background.

Photograph 30: View from Potential Pipeline Alignment No. 2 to ruderal lot and 40-yard trash dumpster located 60-70 feet southwest.

Appendix B. CNDDB Query Results

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Caruthers (3611957) OR Malaga (3611966) OR Burrel (3611948) OR Conejo (3611956) OR Kearney Park (3611968) OR Riverdale (3611947) OR Raisin (3611958) OR Fresno South (3611967) OR Laton (3611946))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Candidate Endangered	G2G3	S1S2	SSC
Ambystoma californiense California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
Anniella pulchra northern California legless lizard	ARACC01020	None	None	G3	S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Arizona elegans occidentalis California glossy snake	ARADB01017	None	None	G5T2	S2	SSC
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Atriplex depressa brittlescale	PDCHE042L0	None	None	G2	S2	1B.2
Atriplex minuscula lesser saltscale	PDCHE042M0	None	None	G2	S2	1B.1
Bombus crotchii Crotch bumble bee	IIHYM24480	None	None	G3G4	S1S2	
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
Caulanthus californicus California jewelflower	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Desmocerus californicus dimorphus valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S2	
Dipodomys nitratoides exilis Fresno kangaroo rat	AMAFD03151	Endangered	Endangered	G3TH	SH	
Efferia antiochi Antioch efferian robberfly	IIDIP07010	None	None	G1G2	S1S2	
Eriastrum hooveri Hoover's eriastrum	PDPLM03070	Delisted	None	G3	S3	4.2
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G5T4	S3S4	SSC
Imperata brevifolia California satintail	PMPOA3D020	None	None	G4	S3	2B.1
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4	

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
Lepidium jaredii ssp. album Panoche pepper-grass	PDBRA1M0G2	None	None	G2G3T2T3	S2S3	1B.2
Leptosiphon serrulatus Madera leptosiphon	PDPLM09130	None	None	G3	S3	1B.2
Lytta molesta molestan blister beetle	IICOL4C030	None	None	G2	S2	
Metapogon hurdi Hurd's metapogon robberfly	IIDIP08010	None	None	G1G2	S1S2	
Perognathus inornatus San Joaquin Pocket Mouse	AMAFD01060	None	None	G2G3	S2S3	
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Puccinellia simplex California alkali grass	PMPOA53110	None	None	G3	S2	1B.2
Spea hammondii western spadefoot	AAABF02020	None	None	G3	S3	SSC
Thamnophis gigas giant gartersnake	ARADB36150	Threatened	Threatened	G2	S2	
Tropidocarpum capparideum caper-fruited tropidocarpum	PDBRA2R010	None	None	G1	S1	1B.1
Vulpes macrotis mutica San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S2	

Record Count: 30

Appendix C. USFWS Species List

United States Department of the Interior

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

In Reply Refer To:
Consultation Code: 08ESMF00-2019-SLI-0094
Event Code: 08ESMF00-2019-E-00269
Project Name: Caruthers CSD: Well No. 7

October 11, 2018

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

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). 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.

Attachment(s):

- Official Species List

Official Species List

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

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2019-SLI-0094

Event Code: 08ESMF00-2019-E-00269

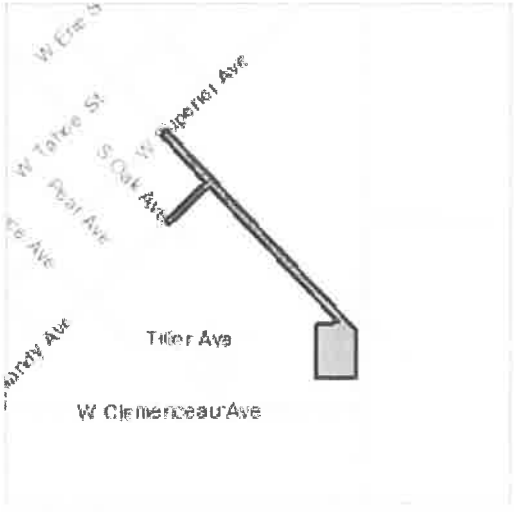
Project Name: Caruthers CSD: Well No. 7

Project Type: WATER SUPPLY / DELIVERY

Project Description: The Project proposes drilling and construction of a new production well (Well No. 7) and associated infrastructure. A transmission pipeline will be installed from Well No. 7 to the Well No.6 site.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/36.53930640310072N119.82883994043473W



Counties: Fresno, CA

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[1], 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
Fresno Kangaroo Rat *Dipodomys nitratoides exilis* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5150 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/37/office/11420.pdf	Endangered
San Joaquin Kit Fox *Vulpes macrotis mutica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered

Reptiles

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

Amphibians

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

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp *Lepidurus packardi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Critical habitats

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

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: November 16, 2018
Consultation Code: 08ESMF00-2019-SLI-0356
Event Code: 08ESMF00-2019-E-01081
Project Name: Caruthers CSD- Well No. 7 (two potential pipeline alignments)

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

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). 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.

Attachment(s):

- Official Species List

Official Species List

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

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2019-SLI-0356

Event Code: 08ESMF00-2019-E-01081

Project Name: Caruthers CSD- Well No. 7 (two potential pipeline alignments)

Project Type: WATER SUPPLY / DELIVERY

Project Description: The Project proposes drilling and construction of a new production well (Well No. 7) and associated infrastructure. The Project Description has been updated to include two potential pipeline alignments (as shown).

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/36.539307845499025N119.82884169348225W

Counties: Fresno, CA

Endangered Species Act Species

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

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Mammals

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Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp *Lepidurus packardi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Critical habitats

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

Appendix D. NOAA EFH Mapping Query Results

EFH Data Notice: Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional Fishery Management Councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

West Coast Regional Office
Alaska Regional Office

Query Results

Map Scale = 1:72,224
Degrees, Minutes, Seconds: Latitude = 36º32'27" N, Longitude = 119º49'31" E
Decimal Degrees: Latitude = 36.54, Longitude = -119.83

The query location intersects with spatial data representing EFH and/or HAPCs for the following species/management units.

HAPCs

No Habitat Areas of Particular Concern (HAPC) were identified at the report location.

EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data.
****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**

Pacific Coastal Pelagic Species,
Jack Mackerel,
Pacific (Chub) Mackerel,
Pacific Sardine,
Northern Anchovy - Central Subpopulation,
Northern Anchovy - Northern Subpopulation,
Pacific Highly Migratory Species,
Bigeye Thresher Shark - North Pacific,
Bluefin Tuna - Pacific,
Dolphinfish (Dorado or Mahimahi) - Pacific,

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data. ****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**
Pelagic Thresher Shark - North Pacific, Swordfish - North Pacific, **West Coast Salmon**, All species and stocks

NOAA HABITAT CONSERVATION | HABITAT PROTECTION
NATIONAL MARINE FISHERIES SERVICE

EFH View Tool | Data Query Tool

Activate Location Query

Print This Report

EFH Data Notice: Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional Fishery Management Councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

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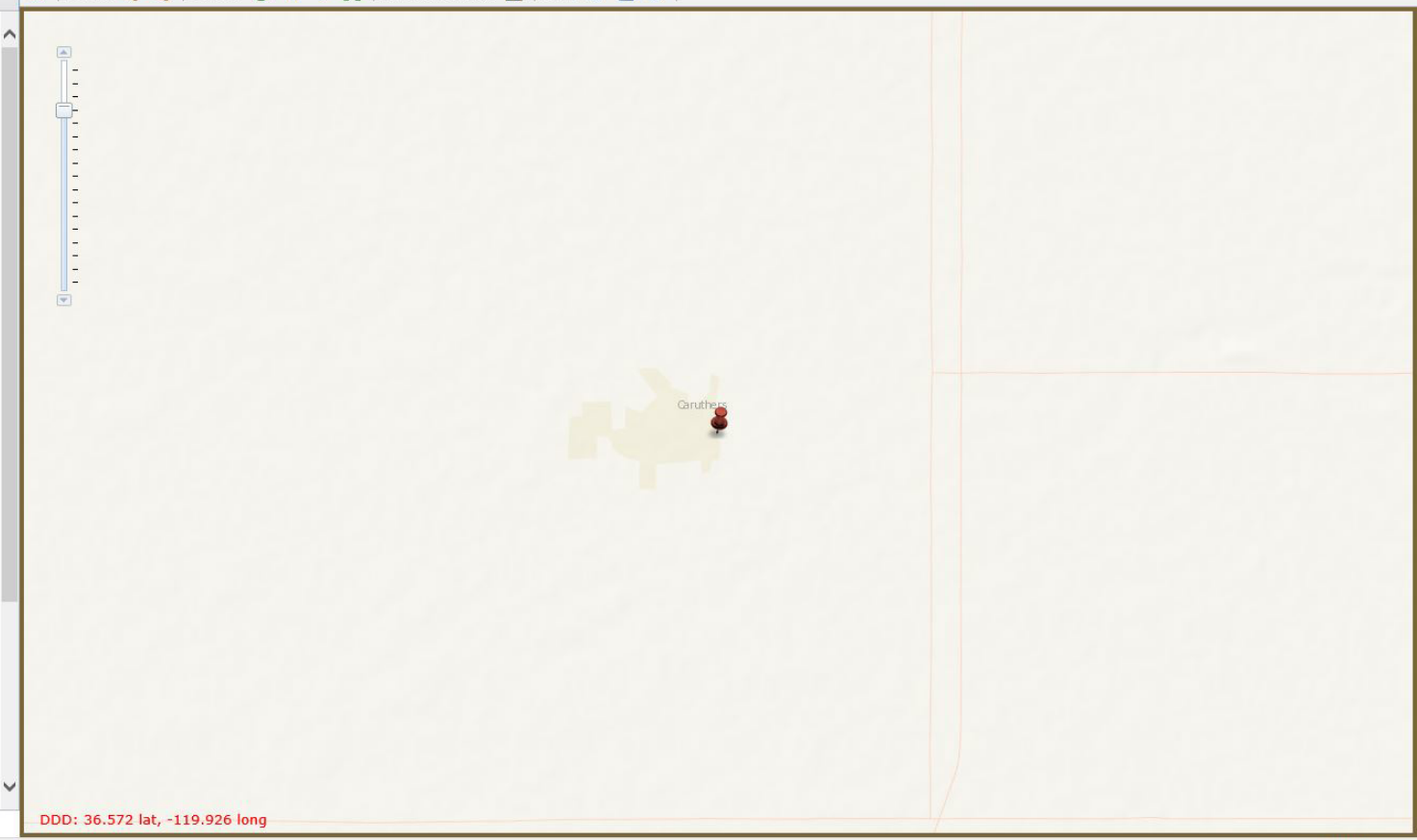
open data inventory -->

Zoom: | Extent: | Location Query: | Help:



Appendix E. Soils Report

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Eastern Fresno Area, California

Caruthers CSD- Well No. 7

November 16, 2018

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:3,240 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 45 90 180 270

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Eastern Fresno Area, California
Survey Area Data: Version 11, Sep 12, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 24, 2016—Oct 23, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DhA	Delhi loamy sand, 0 to 3 percent slopes, MLRA 17	2.9	47.3%
DlA	Delhi loamy sand, moderately deep, 0 to 3 percent slopes	2.1	34.1%
Hc	Hanford sandy loam	0.5	7.4%
Hsm	Hesperia sandy loam, moderately deep	0.7	11.0%
Totals for Area of Interest		**6.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate

pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Eastern Fresno Area, California

DhA—Delhi loamy sand, 0 to 3 percent slopes, MLRA 17

Map Unit Setting

National map unit symbol: 2ss8r
Elevation: 30 to 430 feet
Mean annual precipitation: 9 to 16 inches
Mean annual air temperature: 59 to 64 degrees F
Frost-free period: 225 to 310 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Delhi and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Delhi

Setting

Landform: Dunes on fan remnants
Landform position (two-dimensional): Shoulder, toeslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits derived from sandy alluvium derived from granite

Typical profile

A - 0 to 7 inches: loamy sand
C1 - 7 to 25 inches: loamy sand
C2 - 25 to 60 inches: loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Hanford

Percent of map unit: 6 percent
Landform: Depressions on fan remnants

Hydric soil rating: No

Dello

Percent of map unit: 6 percent
Landform: Depressions on fan remnants
Hydric soil rating: Yes

Hilmar

Percent of map unit: 1 percent
Hydric soil rating: No

Dinuba

Percent of map unit: 1 percent
Hydric soil rating: No

Grangeville

Percent of map unit: 1 percent
Hydric soil rating: No

DIA—Delhi loamy sand, moderately deep, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: hl3j
Elevation: 230 to 400 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 225 to 250 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Delhi and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Delhi

Setting

Landform: Dunes on fan remnants
Landform position (two-dimensional): Footslope, shoulder
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits derived from alluvium derived from granite

Typical profile

A - 0 to 7 inches: loamy sand
C1 - 7 to 40 inches: loamy sand
2C2 - 40 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 24 to 48 inches to abrupt textural change

Natural drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.2 inches)

Interpretive groups
Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Unnamed
Percent of map unit: 10 percent
Landform: Fan remnants
Hydric soil rating: No

Unnamed, hardpan substratum
Percent of map unit: 5 percent
Landform: Dunes on fan remnants
Hydric soil rating: No

Hc—Hanford sandy loam

Map Unit Setting
National map unit symbol: hl5f
Elevation: 200 to 500 feet
Mean annual precipitation: 8 to 15 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 250 to 275 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition
Hanford and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hanford

Setting
Landform: Alluvial fans, flood plains
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

Ap - 0 to 16 inches: sandy loam
C - 16 to 72 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 10 percent
Landform: Alluvial fans, flood plains
Hydric soil rating: No

Unnamed, channeled

Percent of map unit: 5 percent
Landform: Channels on alluvial fans
Hydric soil rating: No

Hsm—Hesperia sandy loam, moderately deep

Map Unit Setting

National map unit symbol: hl5z
Elevation: 200 to 400 feet
Mean annual precipitation: 8 to 10 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 225 to 250 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Hesperia and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hesperia

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

Ap - 0 to 11 inches: sandy loam
C - 11 to 32 inches: sandy loam
Ck - 32 to 43 inches: sandy loam
2Ck - 43 to 60 inches: silt

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Unnamed, coarse sandy loam surface

Percent of map unit: 12 percent
Landform: Knolls on alluvial fans
Hydric soil rating: No

Unnamed, swale

Percent of map unit: 3 percent
Landform: Swales on alluvial fans
Hydric soil rating: Yes

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Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin

MLRA Explorer Custom Report

C - California Subtropical Fruit, Truck, and Specialty Crop Region
17 - Sacramento and San Joaquin Valleys

MLRA 17 - Sacramento and San Joaquin Valleys

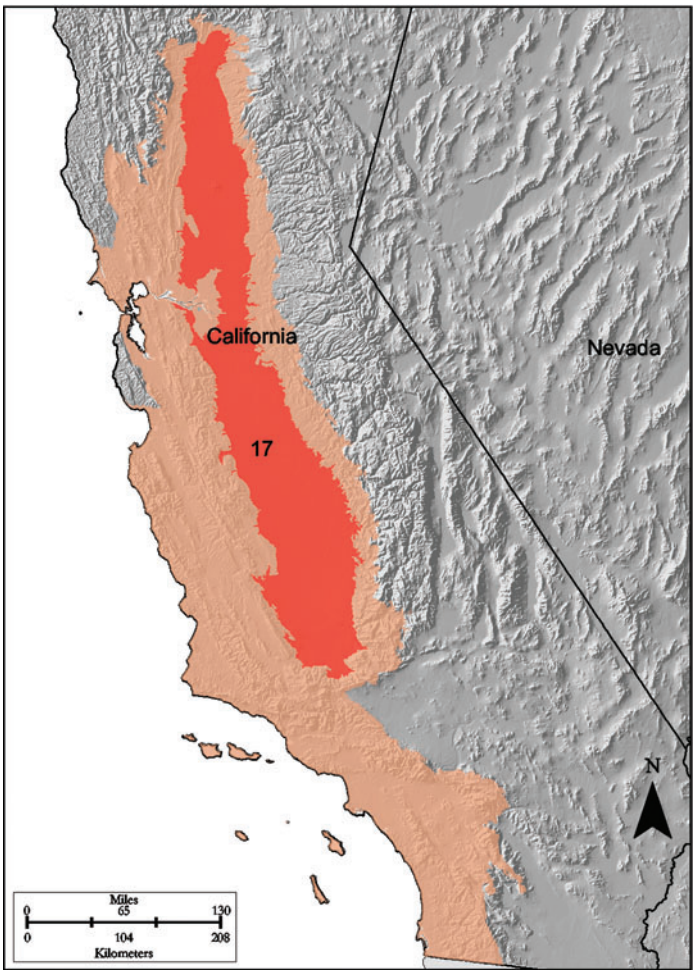

Figure 17-1: Location of MLRA 17 in Land Resource Region C

Introduction

This area is entirely in California (fig. 17-1). It makes up about 18,650 square miles (48,330 square kilometers). From north to south, the major towns or cities in this area are Redding, Red Bluff, Chico, Yuba City, Marysville, Woodland, Davis, Vacaville, Fairfield, Sacramento, Stockton, Modesto, Merced, Madera, Firebaugh, Fresno, Hanford, Visalia, and Bakersfield. Interstate 5 and California State Highway 99 both traverse the entire length of the area. Interstate 80 crosses the midpoint of the area in Sacramento. The MLRA includes Beale, McClellan, Mather, Travis, and Castle Air Force Bases; the Sacramento Army Depot, Lemoore Naval Air Station, and Naval Petroleum Reserves #1 and #2; and numerous national wildlife refuges. The area is locally known as the Central Valley and is part of the Pacific migratory waterfowl flyway.

Biology

This area supports naturalized annuals and scattered trees. Wild barley, wild oats, soft chess, ripgut brome, red brome, foxtail fescue, burclover, and filaree are the dominant species.

Scattered oaks on terraces and oak, willow, and cottonwood grow along the rivers and streams and in overflow areas. Saltgrass, along with such shrubs as iodinebush and Australian saltbush, grow on saline-sodic soils on terraces and in basins.

The major wildlife species include jackrabbit, coyote, fox, ground squirrel, pocket gopher, and various songbirds. The species of fish include salmon, striped bass, steelhead, shad, sturgeon, largemouth bass, smallmouth bass, bluegill, and catfish. Portions of the area are extremely important for wintering waterfowl and seasonally neotropical migrants.

Appendix C

Cultural and Historical Resources Evaluation Report

Confidential

Appendix D

NRCS Soil Resource Report

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Eastern Fresno Area, California

Caruthers CSD- Well No. 7

November 16, 2018

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:3,240 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 45 90 180 270

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Eastern Fresno Area, California
Survey Area Data: Version 11, Sep 12, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 24, 2016—Oct 23, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DhA	Delhi loamy sand, 0 to 3 percent slopes, MLRA 17	2.9	47.3%
DlA	Delhi loamy sand, moderately deep, 0 to 3 percent slopes	2.1	34.1%
Hc	Hanford sandy loam	0.5	7.4%
Hsm	Hesperia sandy loam, moderately deep	0.7	11.0%
Totals for Area of Interest		**6.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate

pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Eastern Fresno Area, California

DhA—Delhi loamy sand, 0 to 3 percent slopes, MLRA 17

Map Unit Setting

National map unit symbol: 2ss8r
Elevation: 30 to 430 feet
Mean annual precipitation: 9 to 16 inches
Mean annual air temperature: 59 to 64 degrees F
Frost-free period: 225 to 310 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Delhi and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Delhi

Setting

Landform: Dunes on fan remnants
Landform position (two-dimensional): Shoulder, toeslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits derived from sandy alluvium derived from granite

Typical profile

A - 0 to 7 inches: loamy sand
C1 - 7 to 25 inches: loamy sand
C2 - 25 to 60 inches: loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Hanford

Percent of map unit: 6 percent
Landform: Depressions on fan remnants

Hydric soil rating: No

Dello

Percent of map unit: 6 percent
Landform: Depressions on fan remnants
Hydric soil rating: Yes

Hilmar

Percent of map unit: 1 percent
Hydric soil rating: No

Dinuba

Percent of map unit: 1 percent
Hydric soil rating: No

Grangeville

Percent of map unit: 1 percent
Hydric soil rating: No

DIA—Delhi loamy sand, moderately deep, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: hl3j
Elevation: 230 to 400 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 225 to 250 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Delhi and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Delhi

Setting

Landform: Dunes on fan remnants
Landform position (two-dimensional): Footslope, shoulder
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits derived from alluvium derived from granite

Typical profile

A - 0 to 7 inches: loamy sand
C1 - 7 to 40 inches: loamy sand
2C2 - 40 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 24 to 48 inches to abrupt textural change

Natural drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.2 inches)

Interpretive groups
Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Unnamed
Percent of map unit: 10 percent
Landform: Fan remnants
Hydric soil rating: No

Unnamed, hardpan substratum
Percent of map unit: 5 percent
Landform: Dunes on fan remnants
Hydric soil rating: No

Hc—Hanford sandy loam

Map Unit Setting
National map unit symbol: hl5f
Elevation: 200 to 500 feet
Mean annual precipitation: 8 to 15 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 250 to 275 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition
Hanford and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hanford

Setting
Landform: Alluvial fans, flood plains
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

Ap - 0 to 16 inches: sandy loam
C - 16 to 72 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 10 percent
Landform: Alluvial fans, flood plains
Hydric soil rating: No

Unnamed, channeled

Percent of map unit: 5 percent
Landform: Channels on alluvial fans
Hydric soil rating: No

Hsm—Hesperia sandy loam, moderately deep

Map Unit Setting

National map unit symbol: hl5z
Elevation: 200 to 400 feet
Mean annual precipitation: 8 to 10 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 225 to 250 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Hesperia and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hesperia

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

Ap - 0 to 11 inches: sandy loam
C - 11 to 32 inches: sandy loam
Ck - 32 to 43 inches: sandy loam
2Ck - 43 to 60 inches: silt

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Unnamed, coarse sandy loam surface

Percent of map unit: 12 percent
Landform: Knolls on alluvial fans
Hydric soil rating: No

Unnamed, swale

Percent of map unit: 3 percent
Landform: Swales on alluvial fans
Hydric soil rating: Yes

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