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SAN MIGUEL WASTEWATER TREATMENT PLANT UPDGRADE/EXPANSION PROJECT

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Prepared for:

San Miguel Community Services District

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AB	Assembly Bill
amsl	above mean sea level
APN	Assessor's Parcel Number
BACT	Best Available Control Technology
BMP	best management practice
CBC	California Building Code
CCIC	Central Coast Information Center
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CHRIS	California Historical Resources Information System
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CPU	Community Plan Update
CRHR	California Register of Historical Resources
District	San Miguel Community Services District
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
GHG	greenhouse gas
GWP	global warming potential
HP	horsepower
IS	Initial Study
kBtu	kilo-British thermal units
kWh	kilowatt-hours
LID	Low Impact Development
MCV2	Manual of California Vegetation, Second Edition
MLD	most likely descendant
MM	Mitigation Measure
MND	mitigated negative declaration
MT	metric tons
NAHC	Native American Heritage Commission
NCL	California Natural Community List
Non-VHFHSZ	Non-Very High Fire Hazard Severity Zone
NRHP	National Register of Historic Places
$PM_{2.5}$	particulate matter less than or equal to 2.5 microns in diameter
PM_{10}	particulate matter less than or equal to 10 microns in diameter
PRC	California Public Resources Code
project	San Miguel Wastewater Treatment Plant Upgrade/Expansion Project
O_2	oxygen
PV	photovoltaic
ROG	reactive organic gas
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy

Acronym/Abbreviation	Definition
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SLF	Sacred Lands File
SLOAPCD	San Luis Obispo County Air Pollution Control District
SWPPP	Stormwater Pollution Prevention Plan
TAC	toxic air contaminant
TCR	tribal cultural resource
UV	ultraviolet
VMT	vehicle miles traveled
WDR	waste discharge requirement
WWTF	San Miguel Machado Wastewater Treatment Facility

1 Introduction

1.1 Project Overview

The community of San Miguel is located approximately 10 miles north of the City of Paso Robles in San Luis Obispo County, California, receives several municipal services from the San Miguel Community Services District (District). District services include lighting, solid waste collection, fire protection, water, and wastewater. Treatment of municipal wastewater occurs at the existing San Miguel Machado Wastewater Treatment Facility (WWTF), which is located near the northern limits of the District, adjacent to the west bank of the Salinas River.

The District has identified the need to enhance and expand the existing WWTF as further described herein to address regulatory requirements and to provide service to the growing San Miguel community through the year 2050. The proposed San Miguel Wastewater Treatment Plant Upgrade/Expansion Project (project) would increase the permitted daily capacity from 200,000 gallons per day to 500,000 gallons per day and enable treated effluent to be stored or conveyed to nearby agricultural operations for non-edible agricultural irrigation.

The existing WWTF is classified as an aerated facultative treatment pond system. Facultative pond systems are designed and operated to reduce concentrations of biochemical oxygen demand, total suspended solids, and coliform numbers (fecal or total) to meet water quality requirements. Facultative pond systems are designed to be operated in a manner in which an aerobic layer (oxygen rich) is present in the shallower depths and an anaerobic zone (oxygen poor) is present in the lower depths. Aerobic treatment processes in the upper layer provide odor control, nutrient, and biochemical oxygen demand removal. Anaerobic fermentation processes, such as sludge digestion, denitrification, and some biochemical oxygen demand removal, occur in the lower layer. The key to successful operation of this type of pond is oxygen (O_2) production by photosynthetic algae and/or re-aeration at the surface. The existing system is composed of four partially mixed aerated facultative ponds in series and three percolation ponds. Treated effluent is disposed of by infiltration into the subsurface in the percolation ponds. Biosolids (i.e., sludge) accumulate in each of the aerated treatment ponds and are periodically transferred to the existing sludge drying basin. After drying and stabilization, the biosolids are transported to a local landfill for disposal. The proposed project includes renovation of existing infrastructure, construction of new infrastructure, and implementation of modified treatment processes.

The District engaged Monsoon Consultants to prepare an engineering analysis to consider alternatives and to develop design recommendations for the WWTF. Monsoon Consultants prepared the Wastewater Treatment Facility Upgrade/Expansion Preliminary Engineering Report (Engineering Report) that is the foundation for the District's engineering design concept (Appendix A).

1.2 California Environmental Quality Act and National Environmental Policy Act Compliance

The District is a special district under Government Code 61000 et seq. and is the California Environmental Quality Act (CEQA) lead agency responsible for the review and approval of the proposed project. The U.S. Department of Agriculture Rural Development is the National Environmental Policy Act lead agency based on

the issuance of federal grant funding for the project under the Rural Development Water and Wastewater Disposal Loan and Grant Program.

1.2.1 California Environmental Quality Act Compliance

Based on the findings of this Initial Study (IS), the District has made the determination that a mitigated negative declaration (MND) is the appropriate environmental document to be prepared in compliance with CEQA (California Public Resources Code [PRC], Section 21000 et seq.). The 2016 County of San Luis Obispo San Miguel Community Plan Update Final Environmental Impact Report (Final EIR) (County of San Luis Obispo 2016a) provides environmental baseline conditions unless otherwise noted herein.

The Final EIR considered the potential environmental impacts, including growth-inducing impacts, of the San Miguel Community Plan Update (CPU) over the life of the CPU extending from 2016 through 2035. The CPU contemplated seven main components, including "Identification of infrastructure and utilities improvements needed to support anticipated buildout, and means of funding them. This includes construction of new water storage and conveyance facilities, new wastewater treatment facilities and transportation infrastructure improvements" (County of San Luis Obispo 2016b).

Furthermore, wastewater collection and treatment needs within San Miguel were evaluated in Section 4.14, Wastewater, of the Final EIR. The Final EIR noted that the District has a Master Sewer Plan, in which several system improvements are recommended to enhance facilities to serve the population forecast of 4,554 (as estimated by the District) by 2034, including additional ponds at the WWTF.

It was determined in the Final EIR that impacts to wastewater from implementation of the CPU, including the above projects outlined in the Master Sewer Plan, would be less than significant on a project-specific level and that cumulative impacts would be considered at the time the WWTF enhancements were contemplated. Growth-inducing impacts were evaluated in Section 5 of the Final EIR, and it was determined that infrastructure improvements could remove an obstacle to growth associated with buildout in the CPU. Significant unavoidable impacts were determined in the Final EIR to include agricultural resources and land use (conversion of agricultural land to non-agricultural use) to accommodate the forecasted community growth (County of San Luis Obispo 2016a).

This IS/MND has been prepared in conformance with Section 15070(a) of the CEQA Guidelines (14 CCR 15000 et seq.). The purpose of the MND and the IS checklist is to determine any potentially significant impacts associated with the project and to incorporate mitigation measures into the project design, as necessary, to reduce or eliminate the significant or potentially significant effects. As determined in this IS/MND, there is no substantial evidence, in light of the whole record before the agency, that the project would have a significant effect on the environment.

1.2.2 National Environmental Policy Act Compliance

The U.S. Department of Agriculture Rural Development is the National Environmental Policy Act lead agency based on the issuance of federal grant funding under the Rural Development Water and Wastewater Disposal Loan and Grant Program. Under Title 7 Code of Federal Regulations Section 1970.54(a), the U.S. Department of Agriculture Rural Development has established categorical exclusions with an environmental report applicable to certain types of actions. The proposed project falls within Title 7 Code of Federal Regulations Section 1970.54(a)(4) for small-scale site-specific development that includes infrastructure to support utility systems such as water or wastewater facilities that do not create a new or relocate an existing discharge to or a withdrawal from surface water or groundwaters, or

cause substantial increase in a withdrawal or discharge at an existing site. The proposed project would enable enhancements within an existing WWTF with minimal expansion to land already owned and maintained by the District. As further described herein, the proposed project would not relocate an existing discharge.

1.3 List of Discretionary Actions

The following discretionary actions are anticipated to implement the proposed project:

- Approval of the project by the District Board of Directors
- Regional Water Quality Control Board (RWQCB) Clean Water Act Section 402 and implementing regulation National Pollutant Discharge Elimination System municipal separate storm sewer system permit and Clean Water Act Section 401 Water Quality Certification
- California Department of Fish and Wildlife (CDFW) Lake and Streambed Alteration Agreement (California Fish and Game Code Section 1600 et seq.)
- Issuance of permits and Authority to Construct by the San Luis Obispo Air Pollution Control District

1.4 Other Agencies that May Use the Mitigated Negative Declaration/Categorical Exclusion with Report

This IS/MND is intended for use by responsible and trustee agencies that may have an interest in reviewing the project. All responsible and trustee agencies for the project, listed as follows, will be asked to review this document:

- U.S. Fish and Wildlife Service
- CDFW
- RWQCB
- San Luis Obispo Air Pollution Control District
- County of San Luis Obispo

1.5 Public Review Process

In accordance with CEQA, a good-faith effort has been made during the preparation of this IS/MND to contact affected agencies, organizations, and persons who may have an interest in this project.

In reviewing the IS/MND, affected public agencies and the interested public should focus on the sufficiency of the document in identifying and analyzing the project's possible impacts on the environment. A copy of the Draft IS/MND and related documents are available for review on the District's website (www.sanmiguelcsd.org).

Comments on the IS/MND may be made in writing before the end of the public review period. A 30-day review and comment period from May 27, 2022, to June 27, 2022 has been established in accordance with Section 15072(a) of the CEQA Guidelines. Following the close of the public comment period, the District will consider this IS/MND and comments thereto in determining whether to approve the proposed project.

Written comments on the IS/MND should be sent to the following address:

ATTN: Kelly Dodds, Director of Utilities
San Miguel Community Services District
P.O. Box 180/1150 Mission Street, San Miguel California 93451
Email: kelly.dodds@sanmiguelcsd.org

1.6 Organization of Document

This document is organized as follows:

Section 1 provides an introduction to the proposed project, CEQA compliance, anticipated discretionary actions, other agencies that may use the document, the public review process including how to provide comments, and the organization of the document.

Section 2 provides a description of the proposed project components and information about their construction and operation.

Section 3 consists of the CEQA IS checklist, which provides the assessment of potential environmental impacts and the applicability of mitigation measures to reduce potentially significant impacts to less than significant.

Section 4 provides a list of the lead agency staff and consultants involved in preparing the environmental review documents for the proposed project.

Section 5 contains references.

This document also includes appendices that contain technical resource reports including regarding engineering design (Appendix A), biological resources (Appendices B, C, and D), cultural resources (Appendix E), air quality and greenhouse gases (Appendix F), and hydrology (Appendix G).

2 Project Description

2.1 Project Overview

The District owns and operates the WWTF, located in the community of San Miguel, County of San Luis Obispo, California. The WWTF occupies approximately 38.4 acres comprising four separate parcels, including Assessor's Parcel Numbers (APNs) 021-051-013, -015, -016, and -017. The main plant occupies approximately 17.8 acres, while the remaining 20.6 acres are located within the channel of the Salinas River to the east of the plant and mapped as Federal Emergency Management Agency (FEMA) Special Flood Hazard Zone A. The existing WWTF utilizes four partially mixed aerated lagoons in series and three percolation ponds (Figure 1, Site Plan).

The most recent significant upgrades to the WWTF occurred in the 1990's and were completed in 2001, bringing its current and permitted capacity up to 200,000 gallons per day (0.2 million gallons per day). The District currently treats an average of approximately 170,000 gallons per day. As noted in the Final EIR, San Miguel is expected to grow to a population of 3,658 in the year 2035 (County of San Luis Obispo 2016a). The District acknowledges that the existing WWTF is nearing capacity and has therefore proposed the WWTF expansion and upgrade (proposed project) to meet population projections and to comply with regulatory requirements.

The District engaged Monsoon Consultants to prepare an engineering analysis that considered alternatives and developed design recommendations for the WWTF. Monsoon Consultants prepared the Engineering Report that is the foundation for the District's engineering design concept (Appendix A). The engineering design concept meets the Central Coast RWQCB existing and anticipated waste discharge requirements (WDR), provides sufficient treatment for effluent flows up to the 30-year projection average daily flow of 0.470 million gallons per day, and provides recycled effluent that meets the requirements for either agricultural irrigation or groundwater recharge purposes. The selected alternative is the Membrane Bioreactor, which is the proposed project.

1. Physical improvements that would occur as part of the proposed project include improvements to the collection system/reclaimed water system, pumping station, septic receiving station, office and laboratory facilities, and additional maintenance and equipment storage/shop facilities; upgrading and modernizing the electrical controls and supervisory control and data acquisition (SCADA) system; and upgrading the backup power generation facilities. With the exception of a new treatment processing pad and all-weather access road and associated grading as well as solar panels, all project components would be located within the main WWTF. The new treatment processing pad and grading would be located to the north of the main WWTF on land owned by the District that is routinely maintained and cleared.

2.2 Purpose, Need, and Objectives of Project

The District's primary purposes for the project are to provide adequate wastewater service for the community of San Miguel through 2050 and to meet regulatory requirements. The need for the project is driven by the Central Coast RWQCB's existing and anticipated WDRs (including WDR Order No. 99-046) and forecast population growth within San Miguel. Although there are differing projections for total community growth based on the CPU and Final EIR or by the District's own estimate, the contemplated growth in both cases is greater than the existing WWTF capacity. The objectives of the project include the following:

- Provide reliable wastewater services to the community of San Miguel

- Enhance and upgrade the WWTF to comply with RWQCB WDR Order No. 99-046
- Enable total dissolved solids, chloride, sodium, and nitrogen removal as part of the WWTF enhancements
- Offset groundwater withdrawal from the Paso Robles Groundwater Basin by increasing the use of reclaimed water
- Treat wastewater to a level sufficient for irrigation of non-edible agriculture
- Implement the membrane bioreactor alternative as outlined in the Engineering Report

2.3 Project Components

The primary actions associated with the proposed project include the upgrade of wastewater and solids treatment systems, expansion of WWTF treatment capacity, implementation of recycled water treatment systems, and improvement of ancillary support facilities (Figure 2, Proposed WWTF Layout). The proposed project includes utilizing existing WWTF facilities and renovating existing and installing new facilities as described in the following sections.

2.3.1 Existing Facilities

There are four existing aeration ponds and three percolation beds that will remain as a part of the project. Access roads on site would be improved. Existing trailers would be removed.

2.3.1.1 Aerated Treatment Ponds

Aerated Treatment Ponds 1 and 2*:* These are two 0.94-million-gallon Stage 1 aerated aerobic ponds, equipped with 25 and 20 horsepower pumps (HP), respectively. These are completely mixed aerated lagoons. The floating aerators keep all solids in suspension while maintaining dissolved oxygen levels. Solids do not appreciably deposit in Ponds 1 and 2, but instead settle out predominantly in Pond 3. Floatable plastics and debris must be raked out of these ponds by hand.

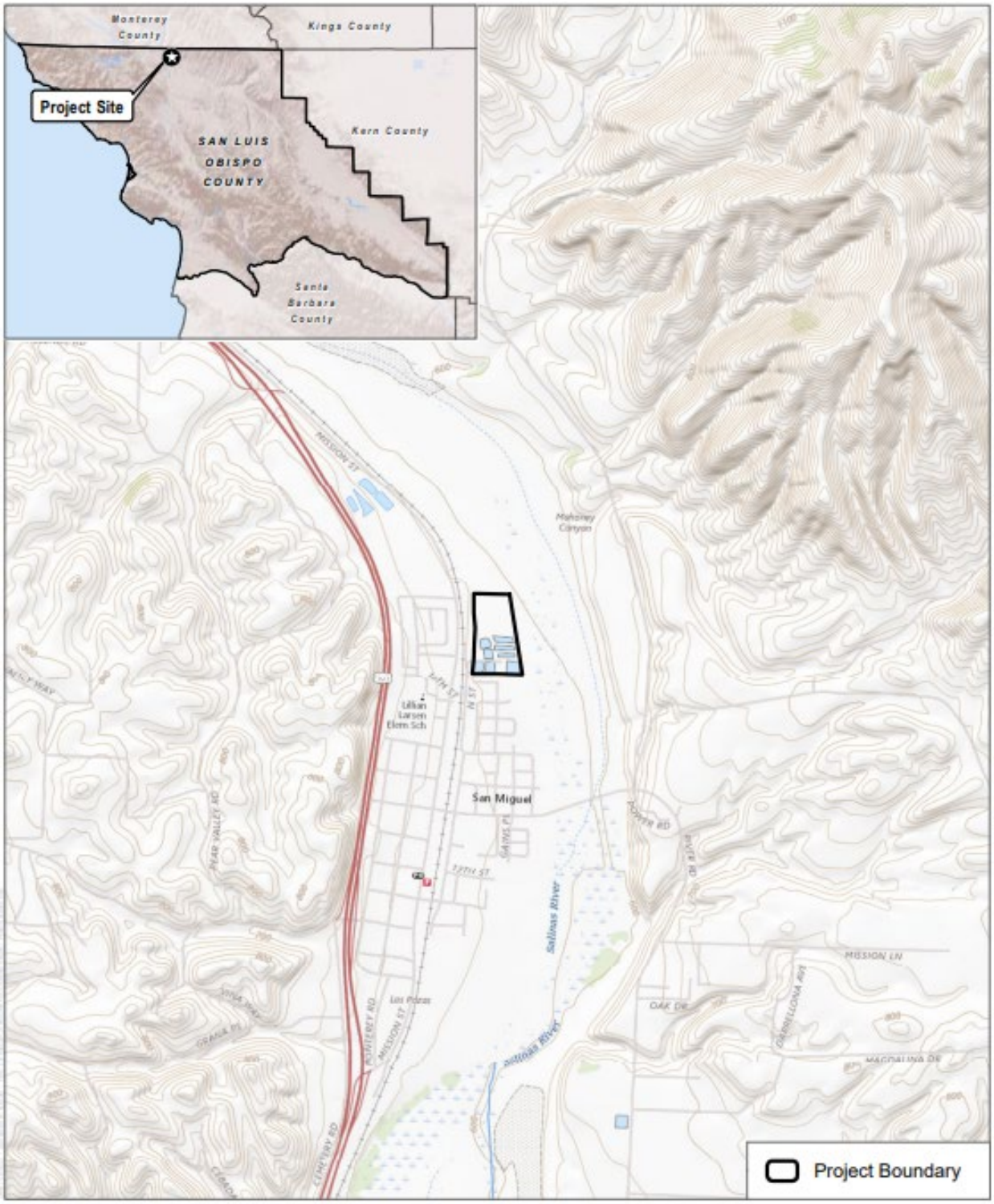
Aerated Treatment Pond 3*:* This is a single 0.87-million-gallon Stage 2 pond equipped with a 7.5 HP aerator. This pond and floating aerators maintain dissolved oxygen levels in the pond, while allowing solids to settle to the bottom. Organic matter in the sludge slowly decomposes anaerobically. This pond is generally referred to as a facultative pond, with an upper aerobic zone and lower anaerobic zone.

Aerated Treatment Pond 4*:* This is a single 0.87-million-gallon Stage 3 pond equipped with a 7.5 HP aerator. This is the final (fourth) pond that also maintains dissolved oxygen levels in the upper zone. Very little sludge settles in this pond, and this pond is considered a final polishing pond prior to discharge to the percolation ponds/beds.

2.3.1.2 Percolation Ponds

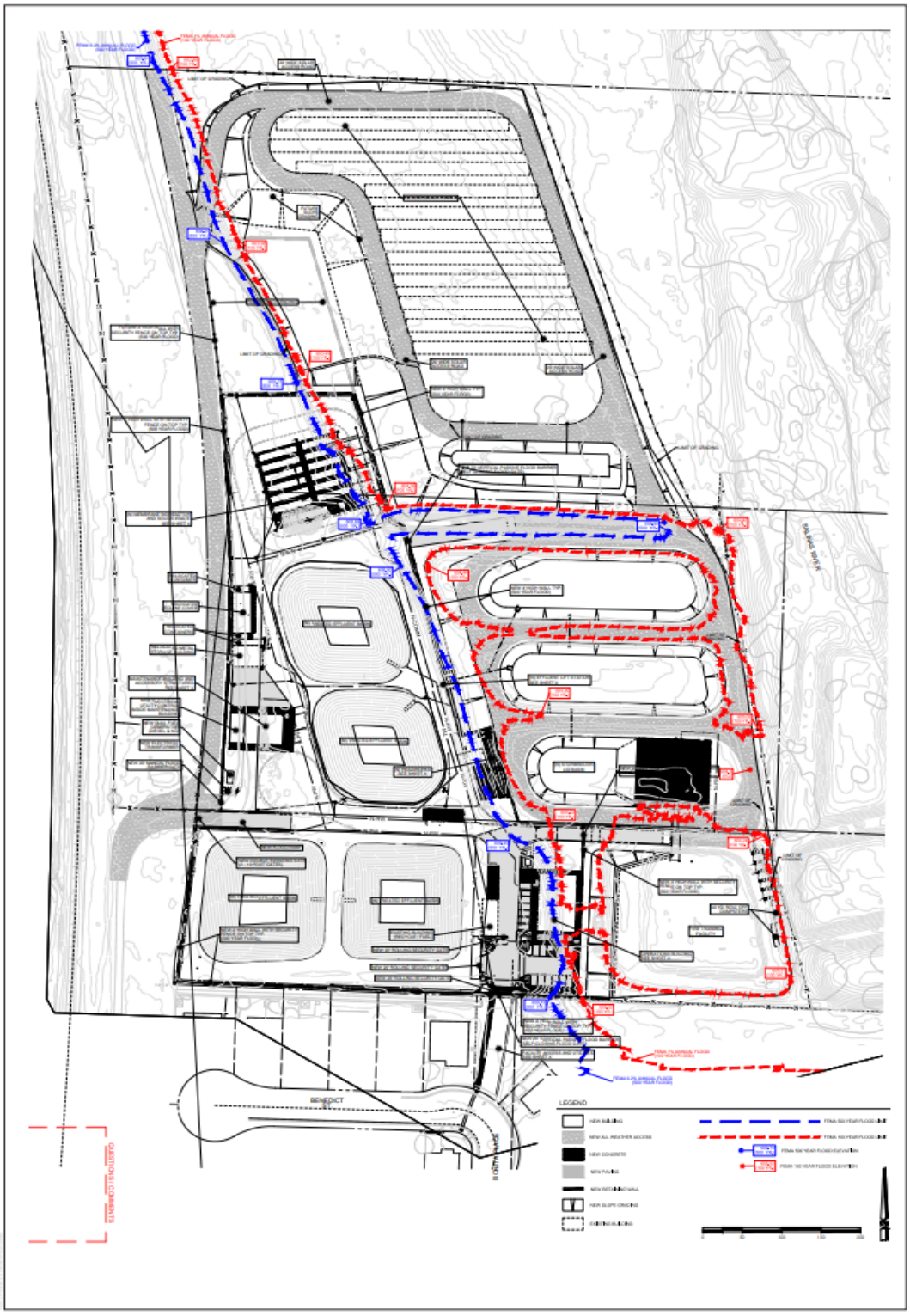
Percolation Ponds*:* There are three percolation ponds totaling 1.7 acres. The two northernmost ponds were re-conditioned in 2008. At that time, both ponds had silted up considerably and were not effectively percolating effluent. Both ponds were dried out and ripped, and the upper several feet of material were removed and replaced with clean sand. In addition, both percolation ponds were deep-ripped in several locations to allow for better connectivity to the underlying more permeable soils. The third and southernmost pond was not reconditioned at that time but continues to serve as a percolation pond.

Figure 1 Project Location



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Figure 2 Existing and Expansion of Wastewater Treatment Plant Areas



SOURCE: Monsoon 2022

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FIGURE 2
Site Plan with Flood Overlay
SAN MIGUEL WASTEWATER TREATMENT PLANT UPGRADE/EXPANSION INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

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2.3.1.3 Access Roads

Access to the WWTF is provided by a paved access driveway off of Bonita Place. Once on the District property, roads around the aerated treatment ponds and percolation ponds are unpaved.

2.3.2 Proposed Facilities

The following site improvements are proposed as part of the project regarding the upgrade of wastewater and solids treatment systems.

2.3.2.1 Headworks

The headworks will be a concrete vault structure which will contain process equipment described below. The headworks structure will be constructed of cast-in-place concrete and be primarily below grade. The footprint of the structure will be approximately 1600 square feet with the base of the structure approximately 15 feet below the ground surface. The headworks vault would be located within the existing WWTF between Pond 3 and Percolation Bed 3.

Flow Splitter: The flow splitter would send excess flow to an existing pond that would be retrofitted into an aerated flow equalization basin. Base flows would be directed into the influent pumping station.

Influent Pumping Station: A new influent pump station would replace the existing aging pumping station. The new influent pumping station would be constructed as a "wet well" type and equipped with multiple (minimum of two) submersible pumps. Wastewater would pass through the headworks then into the pump station to lift it to a higher elevation so that it can flow through the remainder of the plant by gravity. Odor control would be installed to minimize wet-well turbulence; that includes collection of odors in scrubbers or biofilters or the addition of odor control chemicals to the sewer upstream of the pump station. Chemicals typically used for odor control include chlorine, hydrogen peroxide, metal salts (ferrous chloride and ferric sulfate), oxygen, air, and potassium permanganate. The influent pump station would be approximately 300 square feet and located adjacent to and immediately downstream of the headworks. Like the headworks structure, the influent lift station will be primarily below ground, with the base being approximately 18 feet below the ground surface.

Microscreen: The microscreen removes additional suspended solids from wastewater. Solids removed by the microscreen would be stored in a dumpster for hauling to the Chicago Grade landfill (see Section 2.3.3).

2.3.2.2 Secondary Treatment Building

Once wastewater passes through the headworks and influent lift station and the primary treatment process is complete, the effluent would pass into the secondary treatment facility containing the membrane bioreactor (MBR) unit. Components of the MBR unit will include a new pre-engineered package MBR municipal wastewater treatment system, along with a new pre-engineered system for the disinfection of treated effluent which shall be accomplished by enclosed, low pressure, Ultraviolet (UV) unit(s), and a new pre-engineered package biosolids dewatering system. Facilities for chemical storage, as required for MBR operation and maintenance, will be incorporated into the MBR unit. Initially the MBR unit will be installed on a structural concrete slab with an approximate footprint of 15,000 square feet. The MBR unit will initially not be enclosed in a building and will be exposed to the atmosphere. The maximum height of the equipment will extend approximately 12-feet above the adjacent ground surface. In the

future, the District may consider enclosing the MBR unit in an environmentally controlled building which would have a similar footprint (i.e., 15,000 square feet) and have a maximum building height of approximately 25 feet. The building would be located within the existing WWTF.

Membrane Bioreactor Unit: Membrane bioreactor technology provides simultaneous secondary and tertiary treatment. Separation of liquid and solids is accomplished by operating submerged membranes under vacuum with product water drawn through the membranes with permeate pumps or using a gravity-assist siphon system. The solids remaining on the surface of the membranes are returned to the head of the aeration basins. A portion of the solids are wasted just as with conventional activated sludge. Membrane bioreactors require finer screening (2-millimeter screens) than conventional activated sludge to remove fine materials that can wrap around and clog the membranes. Another added benefit of MBR technology is that the volume of air to be treated for odor control is smaller than conventional treatment. Solids removed from the MBR would be conveyed for sludge management, dewatering, and disposal (see Section 2.3.3).

Blowers*:* Blowers would create air flow to support the aeration process. Proper air supply is critical to various functions in wastewater treatment facility.

Internal Mixed Liquor Recycle: This equipment removes excess nitrogen from effluent.

Ultraviolet (UV) Disinfection System: UV disinfection uses UV radiation to destroy or inactivate disease-causing organisms. UV lamps would be contained within vessels and water would be pumped through the vessels at a set flow rate. The UV disinfection process enables the treated effluent to meet California Code of Regulations Title 22 standards for use of reclaimed water for non-edible irrigation.

Biosolids Dewatering System: The biosolids dewatering system will include a dewatering press, feed pump and polymer system, aeration system, and stainless-steel liquid storage tank. This operation and controls of the biosolids dewatering systems hall all be integrated into the MBR System control system and District SCADA system. The sludge dewatering equipment shall have the capacity to produce a dewatered sludge with a minimum 20% solids. Dewatered sludge will fall from the press by gravity into the District supplied roll-off dumpster or equivalent container for transport and landfill disposal.

Chemical Storage: The WWTF uses certain chemicals to maintain the treatment process. These chemicals would be housed on the MBR unit slab, with secondary containment, and managed in accordance with an approved hazardous materials business plan.

2.3.2.3 Other Pumping Facilities

As discussed in Appendix A, the proposed project includes several replacements for existing pumps. The proposed pumps are shown in Table 1.

Table 1. Proposed Pump Schedule

Purpose	QTY	Type	Size (HP)	Location	Power Required (KWH/day)
Lift Station	2	Submersible	20	Lift Station	358
Grit Classifier Pump	1	Centrifugal	5	Headworks	11

Table 1. Proposed Pump Schedule

Purpose	QTY	Type	Size (HP)	Location	Power Required (KWH/day)
Filtrate Pump	2	Centrifugal	5	MBR	120
RAS Pump	2	Centrifugal	7.5	MBR	187
IR Pump	2	Centrifugal	5	MBR	58
Dosing Pump	1	Centrifugal	0.25	MBR	9
Polymer Dosing Pump	1	Centrifugal	0.5	Sludge Management	3
Recycled Water Pump	2	Submersible	25	Treated Effluent/Recycled Water Pump Station	358

Source: Appendix A.
Notes: QTY = Quantity; HP = horsepower; KWH = kilowatt-hours; MBR = membrane bioreactor; RAS = return activated sludge;.

2.3.2.4 Support Facilities

Office and Laboratory Facilities*:* The proposed expansion/upgrade of the plant would require trained and certified staff with expertise in mechanical plant operations and laboratory testing to be on site. This increased operator presence and laboratory testing requirements would require that permanent environmentally-controlled office and laboratory facilities be constructed at the WWTF site. The office and lab building would be 2,000 square feet and located near the main entrance to the WWTF.

Additional Maintenance and Equipment Storage/Shop Facilities: At present, there exists a small shop/equipment storage building at the WWTF. The existing facility has approximately 1,000 square feet of usable space and is currently utilized primarily for the storage of small equipment, materials, and tools. The facility is plumbed and has electrical service. A single restroom is contained in the existing facility with a toilet, wash basin, and shower. The existing building does not have sufficient space to accommodate several of the larger pieces of equipment that the District currently owns, so at present these are stored outside and exposed to the weather. The proposed expansion/upgrade of the plant will require the acquisition of additional equipment that will require regular maintenance and repairs. To facilitate storage and repair of the required equipment, a new storage/shop facility would be constructed. The proposed structure would be approximately 2,400 square feet and 25 feet in height.

Environmentally Controlled Electrical and Controls Facilities*:* With the expansion and upgrade of the existing WWTF, the existing electrical service and controls infrastructure would be upgraded. Currently, the electrical and controls equipment is located outside, with only a shade structure for protection from the elements. It is anticipated that as part of the proposed project, there would be a significant increase in the number and sophistication of the electrical and controls devices and components required for the operation, monitoring, and control of the plant. To properly protect the required electrical and controls systems and to provide an environment where they can be properly serviced and maintained, the project includes a 15-foot-high building encompassing 600 square feet to house this equipment.

Upgrade and Modernization of the Electrical, Controls, and SCADA Systems*:* The proposed project would include an upgrade to the existing electrical service and controls infrastructure. The existing WWTF requires only basic electrical and controls infrastructure and minimal automation. The existing SCADA system is utilized primarily for alarm notification to off-site operators and for basic acquisition of operational data. With the increased sophistication and complexity of operations that would occur as a result of the WWTF expansion and upgrade, it would be necessary to upgrade and modernize the electrical, controls, and SCADA systems. It is imperative that the

planning and design of these system upgrades be accomplished with comprehensive input from the District's operations staff to ensure that the electrical, controls, and SCADA systems that are ultimately installed are compatible with the capabilities and expertise of the plant operators.

Backup Power Generation Facilities*:* The proposed project would include an on-site, automatically starting generator, capable of ensuring continuous operation of all critical wastewater treatment system units for a duration equal to the longest power outage on record.

Septage Receiving Station: A new septage receiving station is desired by the District for receiving septage unloaded from hauling vehicles. The receiving station can be a source of revenue for the District and would provide a service to the surrounding sphere of influence. Wastes received could include residential, portable toilet, septage tank, and/or pre-approved industrial wastes. Typically, liquid waste is pumped into a septage receiving station where rags and trash are removed and deposited into a dumpster. Following initial trash removal, grit is removed and deposited into a dumpster. The flow is then combined with the influent wastewater for treatment.

2.3.3 Solids Management and Hauling

The wastewater treatment process results in treated wastewater and solids. Solids are routinely extracted from equipment and ponds and, if no use is available, transported to the Chicago Grade Landfill, located at 2290 Homestead Road in Templeton, California. Materials are hauled using a roll-off container truck equipped with a 12-foot container at a frequency of 2 trips per month.

2.3.4 Optional Solar Photovoltaic Field

The District is continually looking to maximize treatment efficiency and minimize overall cost. Under this option, the Proposed Action would include the installation of ground-mounted solar panels in the northern portion of the Proposed Action site, approximately 500 feet north of the aeration ponds. Solar energy would be captured by an array of solar photovoltaic (PV) panels mounted to fixed racking or to a single-axis tracking system. The total number of panels used would depend on the final selection of the actual panels to be used. The panels would be arranged in series to effectively increase output voltage.

The panels would be aligned in rows to be spaced based on specific design criteria and would be mounted on the racking systems. The type of anchoring system and/or foundation supports for the racking structures would be determined based on a preliminary geotechnical assessment, but it is anticipated that the racks would be supported by screw or driven piles into the ground. A fixed racking system would be stationary, with panels mounted to tilt to the south. If used, the tracking system would rotate slowly throughout the day at a range of +/− 60 degrees facing east to west to stay perpendicular to the incoming solar rays so production can be optimized. The number of panels per tracker would depend on final configuration and, at its highest rotated edge, would have a maximum height which would be defined by the topography of the terrain and the dimensions of the chosen panels. The minimum clearance from the lower edge of the panel to ground level is approximately 18 to 24 inches but would be subject to change pending final design. Power from the solar PV system would be used to provide supplemental power to the WWTF.

2.4 Recycled Water Conveyance System

The proposed project contemplates new 8-inch high-density polyethylene pipe water transmission and distribution pipelines to convey wastewater to large vineyards to the east and west of the WWTF. The precise alignment of the purple pipe has not yet been finalized; however, the general alignment would be as described below. It should be noted that the recycled water conveyance system described herein is considered a potential future project by the District and will not be included with the initial phase (i.e., WWTF Upgrade) of the project.

New 8-inch high-density polyethylene pipe would exit the WWTF to the northwest and cross the Union Pacific Railroad (UPRR) tracks and turn south at Mission Street. The pipe would be installed within the existing paved street and run southward from 20th Street approximately 1.5 miles to the junction of Mission Street and 9th Street at the Mission San Miguel/Rios Caledonia turnout on the southern end of San Miguel. This pipeline has been divided into segments as described below.

2.4.1 Mission Street Alignment

Segment A: This segment is approximately 0.5 miles and extends from the WWTF to Mission Street southward to 16th Street. One pipeline offshoot would extend from Mission Street westward on 16th Street approximately 0.18 miles to U.S. Highway 101 to the proposed Lilian Larson Elementary School turnout.

Segment B: This segment is approximately 0.37 miles and extends within Mission Street from 16th Street south to 12th Street. One pipeline offshoot would extend from Mission Street westward on 12th Street approximately 0.16 miles to the San Miguel Park turnout.

Segment C: This segment is approximately 0.65 miles and extends within Mission Street from 12th Street to 9th Street to the Mission San Miguel/Rios Caledonia turnout.

Two additional turnouts would be provided: Vino Farms Vineyard Irrigation Turnout near 20th Street/Mission Street; and Mission Heights Homeowners Association Turnout at 19th Street/Mission Street.

2.4.2 N Street/14th Street Alignment and River Road Alignment

New 8-inch pipe would exit the WWTF to the southwest and turn south within N street before reaching the UPRR tracks. The pipeline would continue south until reaching 14th Street/River Road at which point the pipeline would turn east and cross the Salinas River. One offshoot would be installed at Cross Canyon Road, including the J Lohr East Vineyards turnout, and end at the proposed Airport Mixed Use Development turnout. Once past the offshoot, the pipeline would continue within River Road until reaching Magdalena Drive. This pipeline has been divided into segments as described below.

2.4.2.1 N Street/14th Street Alignment

Segment D: This segment extends approximately 0.25 miles from the WWTF southward within N Street, which is unpaved for approximately 0.25 miles, at which point the road transitions to asphalt paving.

Segment E: This segment includes the portion of the pipe within the paved right-of-way of N Street extending south until reaching 14th Street/River Road.

2.4.2.2 River Road Alignment

Segment F: This segment beings at N Street/River Road and extends eastward. The pipe would run approximately 0.53 miles until reaching Cross Canyons Road/Power Road. This segment crosses the Salinas River. Installation methodology is specified in Section 2.5.2. All activities would occur from the bridge deck and there would be no workers or equipment operating within the banks of the Salinas River.

Segment G: This segment extends approximately 0.2 miles southeast within River Road from Canyons Road/Power Road to Old Loop.

Segment H: This segment extends approximately 0.35 miles south within River Road from Old Loop to Mission Lane. This segment contains three ephemeral creeks that flow from east to west under River Road and into the Salinas River.

Segment I: This segment extends approximately 0.42 miles south within River Road from Mission Lane to Martinez Drive. This segment contains one ephemeral creek that flows from east to west under River Road and into the Salinas River.

Segment J: This segment extends approximately 0.10 miles south within River Road from Martinez Drive to Magdalena Drive.

2.4.3 Cross Canyons Alignment

Segment K: This segment extends north at Cross Canyons Road and Indian Valley Road approximately 0.24 miles and terminating at the Airport Mixed Use Development turnout.

2.5 Construction Activities

2.5.1 Wastewater Treatment Facility

Construction of the proposed project is anticipated to commence in January 2022 and would end in January 2023, for a total duration of 12 months months, subject to the regulatory approval process.

A temporary staging area would be required for construction activities and would be located on District property at the WWTF. The construction staging area would be approximately 100 feet by 200 feet. The construction staging area would be cleared of vegetation if necessary, and crushed rock would be used to stabilize soil to create a temporary entry road, temporary parking, and temporary fabrication areas. Soil excavated during construction may be stockpiled, if feasible, at the construction staging area until it has been determined that it would not be needed for structural fill or backfill. Equipment, material, temporary office space, and construction equipment would be staged in the temporary construction staging area.

Construction would occur between the hours of 7:00 a.m. and 6:00 p.m., Monday through Friday. The construction workforce is anticipated to average approximately 20 workers on a daily basis and at peak activities may be up to 50 workers.

Grading in the amount of approximately 20,000 cubic yards of cut which will be incorporated into site fill is anticipated for construction of the WWTF.

Construction activity, duration, equipment, and quantity, as well as workforce estimates for the WWTF upgrade, are shown in Table 2.

Table 2. WWTF Construction Information

Activity	Duration	Equipment	Quantity	Workers
Grading/Site Prep	4 months	Water Truck On site vehicles Grader Scraper Forklifts Dozer Loader Tractor Buster Utility Carts Roller/Vibrator/Padder Trencher Generator Truck cut fill hauling	2 2 1 2 3 1 1 1 2 1 1 2 2	50
Plant Installation	6 months	Water Truck Grader Dozer Loader Tractor Buster Tractor Disc Utility Carts Roller/Vibrator Scraper Water Pumps Screener	2 3 3 2 1 1 1 3 3 1 1	50
Demobilization	2 months	Grader Dozer Loader	—	20

2.5.2 Reclaimed Water Pipe System

The District has not established a timeline for the construction of the optional reclaimed (purple pipe) water system and is not a component of the WWTF upgrade project.

At such time in the future that the reclaimed (purple pipe) water system is constructed, construction/installation of the pipelines would occur between the hours of 7:00 a.m. and 6:00 p.m., Monday through Friday.

Grading in the amount of 2500 cubic yards of cut and 950 cubic yards of fill is anticipated for construction of the reclaimed water pipe system.

Construction activity, duration, equipment, quantity, and workforce estimates for the reclaimed water pipe system are shown in Table 3.

Table 3. Reclaimed Water Pipe System Information

Activity	Duration	Equipment	Quantity	Workers
Grading/Site Prep	4 months	Water Truck On site vehicles Grader Scraper Forklifts Dozer Loader Tractor Buster Utility Carts Roller/Vibrator/Padder Trencher Generator Truck cut fill hauling	2 2 1 2 3 1 1 1 5 1 1 5 2	50
Pipeline Installation	6 months	Water Truck Grader Dozer Loader Tractor Buster Tractor Disc Utility Carts Roller/Vibrator Scraper Water Pumps Screener	2 3 3 2 1 1 1 3 3 1 1	10
Demobilization	2 months	Grader Dozer Loader	—	20

A pipeline construction component looks much like a moving assembly line. A large Proposed Action typically is broken into manageable lengths called “spreads” and utilizes highly specialized and qualified workgroups. Each spread is composed of various crews, each with its own responsibilities. As one crew completes its work, the next crew would move into position to complete its piece of the construction process. In urban areas each spread may be up to 2 miles in length, with the front-end managing traffic, posting no-parking notices, and saw cutting roadways and the back end restoring the trench and conducting paving and restriping.

Prior to undertaking construction activities for the Proposed Action, the District would secure all required permits from agencies with jurisdiction over the rights-of-way along the proposed alignment. Private right-of-way would be secured from property owners. Construction-related permits required by local agencies would be approved and issued prior to the start of construction, including traffic control plan approval, excavation permits, third-party crossing permits, and others, as necessary.

Substructures along the proposed alignment would be identified and protected in place during construction activities. A thorough substructure review would be performed during the planning process for all known substructures and proposed future substructures from both private and public sources. Substructures identified would be accurately shown on the construction drawings from the substructure drawings and maps provided by each owner. The proposed pipelines would be designed to provide adequate horizontal and vertical separation for construction and future operation and maintenance of the existing substructure and new pipeline.

Installation would occur within existing asphalt roads using trenchless and open trench methods. A typical trench would be 24 inches to 30 inches wide and 48 inches deep. The total required construction width could be up to 25 feet within urbanized areas/paved roadways. The ditch would be excavated using backhoes, trenching machines, and excavators. An exception to the mechanical excavation would be hand digging to locate buried utilities, such as other pipelines, cables, water mains, and sewers.

Spoils from excavations, including those from street excavations, would typically be used as backfill materials at the site of origin. Where feasible, excess spoil material along unpaved right-of-way areas in open lands would be spread along the right-of-way. When used for backfill, spoils from the trenches within paved roadways would be hauled to previously disturbed sites for temporary storage and screening, if required, to remove any large rocks or debris and then returned to the trench for backfilling. Spoil material that is unsuitable for backfill use and economically unusable for other purposes would be disposed of in available landfills in accordance with local requirements. Any contaminated soil or waste encountered during trenching would be assessed and then removed and disposed of in the nearest available licensed landfills in accordance with applicable regulations.

Pipe-stringing trucks would be used to transport the pipe, mostly in 18-foot to 20-foot lengths from the shipment point or a pipe storage yard to the construction sites. Where sufficient room exists, trucks would carry the pipe along the right-of-way and side boom tractors would unload the joints of pipe from the stringing trucks and lay them end to end beside the ditch line for future line-up and (for HDPE and steel pipes) welding. Pipeline fittings would be used when pipe bends are not feasible.

2.5.3 Pipeline Crossings

Outlined below are the potential construction techniques that may be required in areas where the proposed alignment would extend over, under, or around riparian areas, culturally sensitive areas, or existing facilities (freeways, roads, railroad tracks, etc.) along the pipeline alignment. Table 4 provides information on the estimated number of crossings that would be required for installation of the pipeline.

Table 4. Known Pipeline Crossings

Crossing ID	Segment	Location	Type of Installation	Crossing Feature
1	A	UPRR Tracks near 20th Street	Casing Bore	UPRR Tracks
2	F	River Road at Salinas River	Bridge Crossing	Salinas River
3	H	North of driveway to Pretty-Smith Vineyards and Winery at River Road	Horizontal Directional Drilling	Ephemeral Creek

Table 4. Known Pipeline Crossings

Crossing ID	Segment	Location	Type of Installation	Crossing Feature
4	H	South of driveway to Pretty-Smith Vineyards and Winery at River Road	Horizontal Directional Drilling	Ephemeral Creek
5	H	North of Mission Lane at River Road	Horizontal Directional Drilling	Ephemeral Creek
6	I	Martinez Drive at River Road	Horizontal Directional Drilling	Ephemeral Creek

Note: UPRR = Union Pacific Railroad.

2.5.3.1 Directional Drilled Crossings

Horizontal directional drilling is a minimal impact trenchless method of installing underground pipelines using a surface based drilling rig. Horizontal directional drilling is generally accomplished in three phases.

(1). A small diameter pilot hole is drilled along the proposed pipe path from one surface point to another.

(2). The pilot hole is enlarged to a diameter suitable for the desired pipe.

(3). The pipe is pulled into the enlarged hole and is only exposed at the two endpoints. Depending on soil and pipe diameter, steps 2 and 3 can be combined into one operation.

Horizontal directional drilling can be used to cross any number of surface obstacles including roadways, railroads, wetlands, and water bodies of varying sizes/depths. Sufficient room is required to fabricate the full pipeline prior to pulling it into the enlarged hole. Drilling fluid is used to stabilize the borehole and lubricate passage of the pipe. The drilling fluid is used to provide the desired effects without spilling to the surface. Some drilling fluid will be captured at the entrance and exit locations, where it will be cleaned up and disposed of.

Horizontal directional drills typically require a shallow entry and exit pit for each bore. These pits are approximately 5 to 10 feet wide, up to 20 feet long, and 10 feet deep. The work area is usually about 200 feet by 100 feet for the entry pit and 50 feet by 100 feet for the exit pit. Spoils from the excavation would be placed alongside the pits. Spoils would be used as backfill, and handling or use of wet spoils would be in accordance with Stormwater Pollution Prevention Plan (SWPPP) and best management practices (BMPs) adopted to protect stormwater quality.

2.5.3.2 Bored Crossings

There would be bored crossings under railroad rights-of-way, drainages, and some roadways depending on final design and on county and state planning review. Either a cased bore or a slick bore technique may be used for the bored crossings. In both techniques, a pit is excavated on each side of the facility to be crossed. These pits are typically 10 to 15 feet wide and up to 50 feet long, and depth is dependent on alignment and can range from 5 to 20 feet. The work area typically required is approximately 100 feet by 50 feet for the entry pit and 50 feet by 50 feet for the exit pit. Depth of the pits would depend on final pipeline depth. The method of installation would involve a horizontal boring machine with augers placed within the casing pipe as it is pushed into the opening made by the boring machine. Casing sections would be welded and inspected in the pit prior to boring. The carrier pipe would be inserted into the casing pipe after the casing is completed. For a slick bore, the method of installation would involve use of the carrier pipe as temporary casing as it is pushed into the opening made by the boring machine.

2.5.3.3 Bridge Crossings

One bridge crossing is anticipated at the Salinas River. The bridge was designed to accommodate the weight of a new reclaimed pipeline, so no bridge upgrades or modifications are required to implement the project. The pipeline would be installed between the bridge girders and would typically be situated on rollers connected to steel braces that would be attached to the bridge girders. The rollers would be used to aid in the installation of the pipeline and would hold the pipeline in place after installation. Review of the original bridge drawings and preliminary engineering indicates that supporting the pipelines from the existing bridge and providing the necessary reinforcement to each bridge would be feasible. Plans for individual bridge crossings would take place in the detailed engineering and design phase of the proposed project.

2.5.3.4 Major Street Crossings

Major streets often contain belowground infrastructure. Thus, where the proposed pipeline would cross major streets, boring may be required to allow the pipeline to pass under or across the street. The use of boring for street crossings would be determined during final design and review with permitting agencies (see Section 2.5.3.2, Bored Crossings).

2.5.4 Staging Areas

Staging areas for equipment and grading spoils would be located outside of the 50-foot setback from any water features and within the paved road right-of-way to the extent feasible. Staging areas along both pipeline routes would be required for trench soil stockpiling and processing, equipment staging, and material transfer. An approximately 200-foot by 250-foot construction work area would be required for parking, laydown, and staging. The District has access to vacant property that will be used for this purpose.

2.5.5 Erosion and Sediment Control

Erosion and sediment control would be conducted in accordance with industry best management practices (BMPs) and a Stormwater Pollution Prevention Plan (SWPPP) that would be filed with the RWQCB. BMPs may include such measures as the following:

- Consider the degree to which pollutants may be exposed to and mobilized by contact with stormwater.
- Consider the direct and indirect pathways that pollutants may be exposed to stormwater.
- Confirm retention of visual observation/inspection records.
- Confirm effectiveness of existing BMPs to reduce or prevent pollutants in stormwater discharges.
- Preserve existing vegetation where required and when feasible.
- Apply temporary erosion control, straw rolls, and silt fences to active and non-active areas as described by the California Storm Water BMPs Handbook – Construction and Industry BMPs. Maintain as necessary to retain effectiveness.
- Implement temporary erosion control measures at regular intervals to achieve and maintain disturbed soil.
- Stabilize (e.g., by using hydroseeding, straw, mulch) non-active areas as soon as feasible after the cessation of construction activities.
- Control erosion in concentrated flow paths by applying erosion control blankets and lining swales.

- At the completion of construction, apply permanent erosion control to all remaining disturbed soil areas as needed.

2.6 Operations and Maintenance

Operation of the proposed project would occur 24 hours a day, 7 days a week, 365 days a year. Workers would be on-site in rotating 8-hour shifts. A total of 5 employees would be required to staff the plant. Only security lighting would be provided, otherwise all lighting would be interior to the buildings.

The pipelines associated with the proposed project would be inspected, maintained, and repaired following completion of construction in accordance with regulatory requirements and in a manner consistent with good maintenance and repair practices. This would involve both routine preventative maintenance and emergency procedures to maintain service continuity.

The WWTF and reclaimed water pipe system are designed with a 50-year operational life span; however, with routine maintenance, the operational life span may be longer.

3 Initial Study Checklist

1. **Project title:**

   San Miguel Wastewater Treatment Plan Upgrade and Expansion Project

2. **Lead agency name and address:**

   San Miguel Community Services District
   P.O. Box 180/1150 Mission Street
   San Miguel, California 93451

3. **Contact person and phone number:**

   Contact: Kelly Dodds, Director of Utilities
   Phone: 805.467.3388
   Email: kelly.dodds@sanmiguelcsd.org

4. **Project location:**

   The project site is located close to the northern limits of San Miguel, San Luis Obispo County, California; Township 25S, Range 12E, Section 16. The site is bordered by UPRR tracks to the west and the Salinas River to the east. The centroid of the project area is 35°45′37″ North, 120°41′35″ West.

5. **Project sponsor's name and address:**

   San Miguel Community Services District
   P.O. Box 180/1150 Mission Street
   San Miguel, California 93451

6. **General Plan Designation:**

   Public Facility/Residential Suburban

7. **Zoning:**

   Per the County of San Luis Obispo's Zoning Code, the property is zoned Public Facility (PF)/Agriculture (AG) The northerly property, which the District has purchased in conjunction with the WWTF upgrade is zoned Agriculture (AG)/Residential Suburban (RS).

8. **Description of project. (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary):**

   The District proposes to upgrade and expand its existing WWTF to meet the Central Coast RWQCB existing and anticipated WDRs, provide sufficient treatment for effluent flows up to the 30-year

projection average daily flow of 0.470 million gallons per day, and provide recycled effluent that meets the requirements for either agricultural irrigation or groundwater recharge purposes.

The primary components of the proposed upgrades would include the following:

- Upgrade of wastewater and solids treatment systems
- Expansion of the WWTF treatment capacity
- Implementation of recycled water treatment systems

Please refer to Section 2 for a detailed project description.

9. Surrounding land uses and setting (Briefly describe the project's surroundings):

Surrounding uses include residential areas to the west and south and open areas associated with the riparian corridor of the Salinas River to the north and east.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):

- County of San Luis Obispo for approval of grading/building permits
- Central Coast RWQCB
- San Luis Obispo County Air Pollution Control District
- CDFW

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

Yes. See Section 3.18, Tribal Cultural Resources, for further detail.

Environmental Factors Potentially Affected

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

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Energy
☐ Geology and Soils	☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials
☐ Hydrology and Water Quality	☐ Land Use and Planning	☐ Mineral Resources
☐ Noise	☐ Population and Housing	☐ Public Services
☐ Recreation	☐ Transportation	☐ Tribal Cultural Resources
☐ Utilities and Service Systems	☐ Wildfire	☐ 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 ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature Date

Evaluation of Environmental Impacts

A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an Environmental Impact Report (EIR) is required.

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

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

a. Earlier Analysis Used. Identify and state where they are available for review.
b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
c. Mitigation Measures. For effects that are "Less Than Significant With Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

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

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

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

The explanation of each issue should identify:

a. The significance criteria or threshold, if any, used to evaluate each question; and
b. The mitigation measure identified, if any, to reduce the impact to less than significance

3.1 Aesthetics

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS – Except as provided in Public Resources Code Section 21099, would the project**:**				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) 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?	☐	☒	☐	☐

Existing Environmental Setting

The unincorporated community of San Miguel is located along the Salinas River, approximately 10 miles north of the City of Paso Robles in rural northern San Luis Obispo County where there is active ranching and agriculture. While these are working lands, there are generally open vistas and unobstructed views. Geographically, the area is within the Salinas River Valley and bounded on the south by the City of Paso Robles, on the west and north by the Santa Lucia Mountain Range and Camp Roberts, and on the northeast by the Cholame Hills. The topography in the area is generally level to rolling, with low rising hills and shallow valleys. Larger hills and mountains form the backdrop. The common vegetative features of the region are the grass-covered valleys and hills with scattered oak trees. Oak woodlands are common, particularly in canyons and along streams on the west side of the community. Willows, sycamores, and cottonwoods can be seen in riparian corridors along the Salinas and Estrella rivers. U.S. Highway 101 is the primary north–south transportation route that traverses the region. Commercial and residential development is visible throughout San Miguel and the City of Paso Robles from U.S. Highway 101. North of Paso Robles, residential development is more scattered and commercial uses are largely concentrated

around the Wellsona Road intersection with U.S. Highway 101. The UPRR tracks run through the middle of San Miguel, equidistant from U.S. Highway 101 and the Salinas River (County of San Luis Obispo 2016b).

The current and expansion WWTF property is located close to the northern limits of San Miguel, San Luis Obispo County, California. The site is bordered by the UPRR to the west, the Salinas River to the east, residences on Benedict Street to the south, and open space to the north.

Environmental Thresholds

The assessment of aesthetic impacts involves qualitative analysis that is inherently subjective in nature. Different viewers will have varying opinions and reactions to changes in a viewshed or the appearance of new development. This evaluation compares the existing visual characteristics of the project study area against the potential changes in visual characteristics that could result from implementation of the project.

The community of San Miguel and the County both have adopted Guidelines for the Implementation of the California Environmental Quality Act of 1970, which provide criteria for determining the potential significance of visual impacts. Key factors in assessing the aesthetic resources of a project site include the physical attributes of the site, its relative visibility, and its relative uniqueness. A project is considered to have a significant effect on the environment if it would alter important visual resources, obstruct public views, remove significant amounts of vegetation, substantially alter the natural character of the landscape, or involve extensive grading visible from public areas.

Impact Analysis

a) Would the project have a substantial adverse effect on a scenic vista?

WWTF

Less Than Significant Impact. The WWTF upgrade will involve demolition of some existing structures to be replaced with new structures. However, the overall character of the WWTF will not be changed significantly and new structures will not block views from prominent locations. Views of the site are visible from U.S. Highway 101.

The project will not cause a long-term alteration or degradation of the existing visible character and quality of the site and its surroundings and will not result in a permanent adverse change to physical, vegetative, or scenic resources. The proposed project would not have a substantial adverse effect on a scenic vista, nor would it result in substantial degradation of the existing visual character and quality of the site and its surroundings.

Construction-related visual effects, including raw earthwork and the presence of heavy machinery, would be temporary and short-term. Potential visual impacts resulting from the project implementation would be **less than significant.**

Optional Solar Component

Less Than Significant Impact. A scenic vista is a viewpoint that provides expansive views of a highly valued landscape for the benefit of the public.

As mentioned in Section 2.3.4, the District is proposing to install ground-mounted solar panels in the northern portion of the project site, approximately 500 feet north of the aeration ponds. The installation of solar PV modules mounted on stationary fixed-tilt, ground-mounted racking or single axis trackers is being considered by the District for future installation and will not be included in the WWTF upgrade project. for the proposed project. The PV modules would be shorter than most single-story commercial buildings within the community. The project would not substantially affect a scenic vista. Therefore, impacts would be **less than significant**.

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

WWTF, Optional/Future Solar Component, and Reclaimed Water System

No Impact. According to the California Scenic Highway Mapping System, there are no officially designated scenic highways in San Miguel. As such, the proposed project is not located adjacent to a state scenic highway. Therefore, there is **no impact.**

c) In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from 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?

WWTF

Less Than Significant Impact. The project would not block or alter the existing views of the rural character of the project area. The existing viewscape would not be impeded or altered by structures or other project elements. The views of the project itself would be relatively limited as the project consists mostly of improvements to the existing WWTF, which will be generally shielded from the public viewshed. Temporary visual impacts related to construction include the removal of roadside vegetation, presence of heavy machinery, materials stockpiling and storage, and construction-related safety signage and safety dividers. Construction activities at the project site and at off-site staging areas would result in short-term temporary changes in the visual character of the project area during and immediately following construction but would be minimized and restored. As a result, there would be a **less than significant** impact.

Optional/Future Solar Component

Less Than Significant Impact. The solar site consists of a recently purchased parcel located adjacent to the existing WWTF. The solar component would not substantially degrade the existing visual character or quality of the site and its surroundings. As such, a **less than significant impact** would occur.

Optional/Future Reclaimed Water System

Less Than Significant Impact. Implementation of the proposed pipelines would result in temporary visual impacts during construction; however, these impacts would be temporary, and upon completion of construction, would not be visible (for the pipeline installation) or would not result in substantial visible changes (for the lift station conversion). Given that construction activities would be temporary, and the site

would be restored to its previous existing condition, the project would not significantly degrade the existing visual character or quality of the site or its surroundings. Impacts would be **less than significant**.

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

WWTF

Less Than Significant Impact with Mitigation. The existing WWTF facilities are a source of light and glare in the project area. The proposed project could contribute additional light and glare to the site with the development of additional facilities. Generation of new lighting would increase the potential for glare visible from U.S. Highway 101 and adjacent areas. The measures described in Mitigation Measure (MM) mit-1 should be used to reduce light and glare. Impacts would be reduced to **less than significant with the implementation of mitigation**.

Optional Solar Component

Less Than Significant Impact. The reflection of sunlight from glass and metallic surfaces of the proposed solar panels is the primary potential producer of glare. The reflection of light is an optical phenomenon governed by the law of reflection. This law states that the direction of incoming light (incident ray) and the direction of the outgoing light reflected (reflected ray) make the same angle with respect to the surface normal, thus the angle of incidence equals the angle of reflection. The law of reflection shows how light responds when it contacts a truly spectral surface, like a mirror.

A solar panel differs from a truly spectral surface in that it has a microscopically irregular surface designed to trap the incident rays of sunlight with the intention of generating additional photon collision and energy production. Any incidental radiation, if not absorbed or transmitted, will be reflected. With the current advancements in PV technology, a typical untreated silicon solar cell absorbs 2/3 of the sunlight reaching the panel's surface, meaning only 1/3 of the sunlight reaching the surface of the solar panel will be reflected. Recent improvements in PV technology have led to even greater light absorption efficiency through the use of nano-engineered anti-reflective materials applied directly to the solar cells that allow the cells to absorb light from virtually the entire solar spectrum. The intent of solar technology is to increase efficiency by absorbing as much light as possible (which further reduces reflection and glare). Most solar glass sheets (the glass layer that covers the PV panels) are typically tempered glass that is treated with an anti-reflective or diffusion coating that further diffuses (scatters) the intensity of glare produced. This type of diffused glare loses intensity as the distance from the reflection source increases.

The proposed project could potentially include the use of trackers. Trackers are devices that orient the solar array perpendicular (surface normal) to the incident solar radiation, thereby maximizing solar cell efficiency and potential energy output. Tracking devices are capable of positioning the array so that the incident rays would be at or very near a surface normal (perpendicular angle). In these optimal conditions, when the sun is high in the sky, the law of reflection indicates that the reflected ray would be at an equally low angle and reflected in a direction toward the light source or back into the atmosphere away from terrestrial-based receptors. This also means that the potential for glare is further reduced. However, when the sun is low on the horizon (near dawn or dusk), the sun's angle in the sky is low; because the trackers are tilted toward the light source, the potential for fugitive glare on terrestrial-based receptors increases.

There are no sensitive visual receptors in the vicinity. Therefore, there are no sensitive receptors that could be affected by the fugitive glare from the spectral surfaces of the solar panels, or from nighttime lighting sources. Glare or light impacts would be **less than significant.**

Optional/Future Reclaimed Water System

Less Than Significant Impact. The proposed pipelines would be placed below the ground surface within the WWTF and within existing street and would not result in a new source of lighting or glare. Therefore, no light or glare impacts would occur as a result of implementing the proposed pipelines. Impacts would be **less than significant**.

Mitigation Measure

Mitigation of the impact to aesthetics identified above will be mitigated through implementation of MM AES-1, below.

MM AES-1 Exterior building materials shall be of a non-glare and non-reflective finish. Windows shall be designed and oriented to minimize glare onto adjacent properties. Illumination from within buildings shall be controlled by window design, location, and tinting. Window glass shall be designed to control spillage of light from interior spaces.

3.2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FORESTRY RESOURCES – In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☒	☐	☐

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐

Existing Environmental Setting

The California Department of Conservation classifies and maps agricultural lands in the state in the Farmland Mapping and Monitoring Program. The Farmland Mapping and Monitoring Program identifies five farmland categories: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Farmland of Local Potential. The project site is designated as Urban and Built-Up Land by the Farmland Mapping and Monitoring Program (CDOC 2020).

The project site is not located within or immediately adjacent to land under an active Williamson Act contract. According to PRC Section 12220(g), forest land is defined as land that can support 10% native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. Timberland is defined as land, other than land owned by the federal government and land designated by the State Board of Forestry and Fire Protection as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees. The project site does not support any forest land or timberland.

The project site does not contain a combination of acreage and/or soils that render the site an important agricultural resource.

Impact Analysis

a) Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

WWTF

No Impact. The project site is currently occupied by the existing WWTF; no agricultural uses occur on site. Underlying soils include Hanford and Greenfield soils (2% to 9% slopes), Metz Loamy Sand, and Corducci-Typic Xerofluvents. The Natural Resources Conservation Service does not rate the project site as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, Farmland of Local Potential, or Grazing Land (CDOC 2016). The project site is designated as Urban and Built-Up Land and Farmland of Local Potential based on the Important Farmland Map for San Luis Obispo County (CDOC 2016). Therefore, **no impact** to important farmland would occur.

Optional/Future Solar Component

No Impact. As discussed in Section 3.1, the optional solar component is situated at northern portion of the project site, approximately 500 feet north of the aeration ponds. There are no agricultural uses occurring on site and based on farmland maps prepared by California Department of Conservation, the project site is not located in an area designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Therefore, **no impact** to important farmland would occur.

Optional/Future Reclaimed Water System

No Impact. The pipeline would be installed within the existing paved street and run southward from 20th Street approximately 1.5 miles to the junction of Mission Street and 9th street at the Mission San Miguel/Rios Caledonia turnout on the southern end of San Miguel. The pipeline area is designated as Urban and Built-Up Land. Therefore, there would be **no impact** to important farmland.

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

WWTF

Less Than Significant Impact with Mitigation. The Williamson Act, also known as the California Land Conversion Act of 1969 (California Government Code Section 51200 et seq.), preserves agricultural and open space lands from conversion to urban land uses by establishing a contract between local governments and private landowners to voluntarily restrict their land holdings to agricultural or open space use. The project site is not under a Williamson Act contract (CDOC 2010). A small portion of the project area on the northeast corner of the site is designated as agricultural use. The project requires obtaining a Conditional Use Permit, as described in Section 3.11, Land Use and Planning, MM-LU-01. Impacts would be reduced to **less than significant with the implementation of MM-LU-01.**

Optional/Future Solar Component

Less Than Significant Impact with Mitigation. As discussed above, the project site is not under a Williamson Act contract. A small portion where the optional solar component would be is designated as agricultural use. The project requires obtaining a Conditional Use Permit, as described in Section 3.11, MM-LU-01. **With implementation of MM-LU-01, impacts would be less than significant.**

Optional/Future Reclaimed Water System

Less Than Significant Impact with Mitigation. The reclaimed pipe system is not located on any lands with Williamson Act contracts. The pipeline would cross areas designated for agriculture, residential uses, commercial retail, recreation, and residential suburban uses. The project requires obtaining a Conditional Use Permit, as described in Section 3.11, MM-LU-01. **With the implementation of MM-LU-01, impacts would be less than significant.**

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220[g]), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104[g])?

WWTF

No Impact. The project site and surrounding areas are not zoned for forest land, timberland, or timberland zoned Timberland Production. Therefore, **no impacts** would occur.

Optional/Future Solar Component

No Impact. As discussed above, the project site and surrounding areas are not zoned for forest land, timberland, or timberland zoned Timberland Production. Therefore, **no impacts** would occur.

Optional/Future Reclaimed Water System

No Impact. As discussed above, the project site and surrounding areas are not zoned for forest land, timberland, or timberland zoned Timberland Production. Therefore, **no impacts** would occur.

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

WWTF

No Impact. There are no existing forest lands located on the project site or in the vicinity of the site. Therefore, **no impacts** would occur.

Optional/Future Solar Component

No Impact. As discussed above, there are no existing forest lands located on the project site or in the vicinity of the site. Therefore, **no impacts** would occur.

Optional/Future Reclaimed Water System

No Impact. As discussed above, there are no existing forest lands located on the project site or in the vicinity of the site. Therefore, **no impacts** would occur.

e) Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

WWTF

Less Than Significant Impact. The proposed project would not encroach upon or convert any active farmland or existing forest land on the project site or in the project vicinity. The proposed project would produce California Code of Regulations Title 22 quality recycled water. This water would be available for irrigation, thus potentially reducing the use of treated potable water and pumped groundwater for irrigation use. Therefore, impacts would be **less than significant.**

Optional/Future Solar Component

Less Than Significant Impact. As discussed above, the proposed project would not encroach upon or convert any active farmland or existing forest land on the project site or in the project vicinity. Therefore, impacts would be **less than significant.**

Optional/Future Reclaimed Water System

Less Than Significant Impact. The proposed reclaimed pipe system would not encroach upon or convert any active farmland or existing forest land on the project site or in the project vicinity.

The proposed project contemplates new 8-inch high-density polyethylene water transmission and distribution pipelines to convey California Code of Regulations Title 22 quality recycled water.to large vineyards to the east and west of the WWTF for irrigation. Therefore, impacts would be **less than significant.**

3.3 Air Quality

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
III. 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:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐

Environmental Setting

San Miguel is located within the South-Central Coast Air Basin, which also includes Santa Barbara and Ventura Counties. Air quality within the South-Central Coast Air Basin is regulated by several jurisdictions including the U.S. Environmental Protection Agency (EPA), the California Air Resources Board (CARB), and the San Luis Obispo County Air Pollution Control District (SLOAPCD). The County is currently designated as "nonattainment" for the state standards for ozone, partial nonattainment (in eastern San Luis Obispo County, outside of the project area) for federal ambient standards for ozone, and nonattainment for the state standards for particulate matter less than or equal to 10 microns in diameter (PM_{10}). The SLOAPCD has developed a CEQA Air Quality Handbook (most recently updated with a November 2017 Clarification Memorandum) to evaluate project-specific impacts and determine if potentially significant impacts could result from a project (SLOAPCD 2012, 2017). To evaluate long-term emissions, cumulative effects, and establish countywide programs to reach acceptable air quality levels, a Clean Air Plan has been adopted by the SLOAPCD (2001).

The emissions presented within this assessment are compared to the SLOAPCD construction and operational thresholds from SLOAPCD's CEQA Air Quality Handbook (2012). SLOAPCD has adopted emissions-based thresholds to address the significance of air quality impacts resulting from a project, which are discussed below.

Construction

SLOAPCD has developed specific daily and quarterly quantitative thresholds that apply to projects within the South-Central Coast Air Basin. The applicable thresholds from Table 2-1 of the SLOAPCD's CEQA Air Quality Handbook are described below (SLOAPCD 2012).

Reactive Organic Gases and Oxides of Nitrogen Emissions

- For all construction projects, exceedance of the 137 pounds per day shall implement Standard Mitigation Measures.
- Quarterly – Tier 1. For construction projects lasting more than one quarter, exceedance of the 2.5 tons per quarter threshold requires Standard Mitigation Measures and Best Available Control Technology (BACT) for

construction equipment. If implementation of the Standard Mitigation and BACT measures cannot bring the project below the threshold, off-site mitigation may be necessary.

- Quarterly – Tier 2. For construction projects lasting more than one quarter, exceedance of the 6.3 tons per quarter threshold requires Standard Mitigation Measures, BACT, implementation of a Construction Activity Management Plan, and off-site mitigation.

Diesel Particulate Matter Emissions

- For construction projects expected to be completed in less than one quarter, exceedance of the 7 pounds per day shall implement Standard Mitigation Measures.
- Quarterly – Tier 1. For construction projects lasting more than one quarter, exceedance of the 0.13 tons per quarter threshold requires Standard Mitigation Measures and BACT for construction equipment.
- Quarterly – Tier 2. For construction projects lasting more than one quarter, exceedance of the 0.32 ton per quarter threshold requires Standard Mitigation Measures, BACT, implementation of a Construction Activity Management Plan, and off-site mitigation.

Fugitive Particulate Matter (PM_{10}), Dust Emissions

- Quarterly: Exceedance of the 2.5 tons per quarter threshold requires fugitive PM_{10} mitigation measures and may require the implementation of a Construction Activity Management Plan.

Operation

The SLOAPCD's operational significance thresholds from Table 3-2 of the SLOAPCD Guidelines are shown in Table 5 (SLOAPCD 2012).

Table 5. Thresholds of Significance for Operational Emissions Impacts

Pollutant	Threshold	
	Daily (lbs/day)	*Annual (tons/year)*
Ozone Precursors (ROG + NO_x)	25	25
Diesel Particulate Matter	1.25	NA
Fugitive Particulate Matter (PM_{10}), Dust	25	25
Carbon Monoxide	550	NA

Source: SLOAPCD 2012.
Notes: lbs = pounds; NA = not applicable; ROG = reactive organic gases; NO_x = oxides of nitrogen; PM_{10} = particulate matter less than or equal to 10 microns in diameter.

Impact Analysis

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact. The SLOAPCD has developed the CEQA Air Quality Handbook to evaluate project-specific impacts and help determine if air quality mitigation measures are needed, or if potentially significant impacts could result (SLOAPCD 2012). As shown in detail in Threshold 3.3(b), the project would not exceed the SLOAPCD significance thresholds during construction or operation. Furthermore, the project

would not propose a change in land use and would be consistent with the general plan land use designation. Operation of the project would require two additional employees. The San Luis Obispo Council of Governments projects an increase of 18,207 jobs between 2015 and 2045, or 607 jobs per year (SLOCOG 2019). As such, the project would include growth that is anticipated within the San Luis Obispo Council of Governments' Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and 2050 Regional Growth Forecast. Additionally, the project would be consistent with the general level of development anticipated and projected in the Clean Air Plan and would therefore not conflict with or obstruct the implementation of the applicable air quality plan. Therefore, impacts related to conflict of an air quality plan would be **less than significant**.

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

Less Than Significant Impact.

Construction Emissions

Construction assumptions, including timing, phasing, equipment type and quantity, as well as worker and vendor truck trips, were based on California Emissions Estimator Model (CalEEMod) default assumptions. Default values provided by CalEEMod were used where detailed project information was not available. For purposes of estimating project criteria air pollutant emissions, it is assumed that construction of the project would commence in January 2022 and would end in January 2023. The analysis contained herein is based on the following assumptions; the duration of phases is approximate:

- Site preparation – 4 months
- Trenching – 3 months
- Plant installation – 5 months
- Demobilization – 1 week
- Pre-construction utility locations and potholing – 3 weeks
- Excavation of bore/receiving pits – 2 weeks
- Installation of pipe – 3 months
- Backfill – 2 weeks
- Installation of metered turnouts – 1 month
- Pavement repairs – 2 weeks

Estimated average workers and the construction equipment mix used for estimating the construction emissions of the project is based on CalEEMod defaults and is shown in Table 6. For worker and vendor trips, the default CalEEMod assumptions for one-way trips were rounded up to the nearest even number to account for whole round-trips. The project would result in 11 cubic yards of export during the excavation of bore/receiving pits phase and 27 cubic yards of import during the backfill phase. For this analysis, it was generally assumed that heavy construction equipment would operate 5 days a week (22 days per month) during project construction.

Table 6. Construction Scenario Assumptions

Construction Phase	One-Way Trips			Equipment	Quantity	Hours Per Day
	Daily Workers	*Daily Vendor Trucks*	*Total Haul Trucks*			
Site Preparation	50	2	0	Forklifts	3	8
				Generator Sets	5	8
				Graders	1	8
				Rollers	1	8
				Rubber Tired Dozers	1	8
				Rubber Tired Loaders	1	8
				Scrapers	1	8
				Tractors/Loaders/Backhoes	1	8
				Trenchers	1	8
Trenching	10	2	0	Pavers	1	8
				Rollers	1	8
				Tractors/Loaders/Backhoes	1	8
				Trenchers	1	8
Plant Installation	50	4	0	Crushing/Proc. Equipment	1	8
				Graders	3	8
				Pumps	1	8
				Rollers	3	8
				Rubber Tired Dozers	3	8
				Rubber Tired Loaders	2	8
				Scrapers	3	8
				Tractors/Loaders/Backhoes	1	8
Demobilization	20	4	0	NA	NA	NA
Pre-Construction Utility Locations and Potholing	4	0	0	NA	NA	NA
Excavation of Bore/ Receiving Pits	6	2	2	Tractors/Loaders/Backhoes	1	8
Installation of Pipe	6	4	0	Bore/Drill Rigs	1	8
Backfill	6	4	4	Crushing/Proc. Equipment	1	8
				Tractors/Loaders/Backhoes	1	8
Installation of Metered Turnouts	6	2	0	Tractors/Loaders/Backhoes	1	8
Pavement Repairs	6	4	0	Paving Equipment	1	8
				Rollers	1	8

Source: Appendix F
Note: NA = not applicable.

As explained previously, CalEEMod Version 2016.3.2 was used to estimate emissions from construction of the project. Construction emissions can vary substantially from day to day, depending on the level of activity; the specific type of operation; and, for particulate matter, the prevailing weather conditions. Therefore, estimates of such emission levels can only be approximate.

Proposed construction activities would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, minimal soil disturbance, and reactive organic gas [ROG] off-gassing from application of asphalt and paint) and off-site sources (i.e., on-road vendor trucks and worker vehicle trips). Internal combustion engines used by construction equipment, trucks, and worker vehicles would result in emissions of ROGs, oxides of nitrogen, carbon monoxide (CO), PM_{10}, and particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$). PM_{10} and $PM_{2.5}$ emissions would also be generated by entrained dust, which results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil. The project would be required to comply with SLOAPCD Rule 401 to control dust emissions generated during any dust-generating activities. Standard construction practices that would be employed to reduce fugitive dust emissions include watering of the active dust areas two times per day, with additional watering depending on weather conditions. The project would involve application of architectural coating (e.g., paint and other finishes) for painting the project. The contractor is required to procure architectural coatings from a supplier that complies with the requirements of SLOAPCD Rule 433 (Architectural Coatings). Table 7 presents the estimated maximum daily construction emissions generated during construction of the project. Details of the emission calculations are provided in Appendix F.

Table 7. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions

Year	ROG	NOx	CO	SOx	PM10	PM2.5
	Pounds per day					
2022	8.50	88.56	55.51	0.13	10.54	5.90
2023	0.64	5.08	6.89	0.01	0.35	0.26
Maximum ROG + NO_x	**93.64**		—	—	—	—
SLOAPCD Threshold	137		—	—	—	—
Threshold Exceeded?	No		—	—	—	—

Notes: ROG = reactive organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SLOAPCD = San Luis Obispo County Air Pollution Control District.
See Appendix F for complete results.

As shown in Table 7, the project's construction emissions would not exceed SLOAPCD's daily thresholds. Therefore, construction impacts associated with criteria air pollutant emissions would be less than significant. Table 8 presents the project's maximum quarterly emissions compared to the SLOAPCD's thresholds.

Table 8. Estimated Maximum Quarterly Construction Criteria Air Pollutant Emissions

Quarter	Start Date	End Date	ROG + NOx	DPM	Fugitive PM10
			Tons per Quarter		
1	1-3-2022	4-2-2022	1.81	0.08	0.05
2	4-3-2022	7-2-2022	0.86	0.08	0.05
3	7-3-2022	10-2-2022	2.17	0.08	0.05
4	10-3-2022	1-2-2023	2.82	0.08	0.05
5	1-3-2023	4-2-2023	0.07	0.00	0.00
6	4-3-2023	7-2-2023	0.07	0.00	0.00
		Maximum	**2.82**	**0.08**	**0.05**

Table 8. Estimated Maximum Quarterly Construction Criteria Air Pollutant Emissions

Quarter	Start Date	End Date	ROG + NOx	DPM	Fugitive PM10
			Tons per Quarter		
		SLOAPCD Tier 1 Threshold	2.5	0.13	2.5
		Threshold Exceeded?	**Yes**	No	No

Notes: ROG = reactive organic compound; NO_x = oxides of nitrogen; DPM = diesel particulate matter; PM_{10} = coarse particulate matter; SLOAPCD = San Luis Obispo County Air Pollution Control District.
See Appendix F for complete results.

As shown in Table 8, the project's construction emissions would not exceed the APCD's quarterly thresholds for DPM and fugitive PM_{10}. However, emissions of ROG and oxides of nitrogen would exceed the SLOACPD Tier 1 threshold. Therefore, the project requires the implementation of Standard Mitigation Measures and BACT for construction equipment in accordance with the SLOAPCD 2012 CEQA Handbook. In accordance with Section 2.3.2 of the SLOAPCD 2012 CEQA Handbook, the project would implement the use of Tier 3 off-road engines. Table 9 shows the maximum quarterly construction emissions with implementation of BACT.

Table 9. Estimated Maximum Quarterly Construction Criteria Air Pollutant Emissions with BACT

Quarter	Start Date	End Date	ROG + NOx	DPM	Fugitive PM10
			Tons per Quarter		
1	1-3-2022	4-2-2022	1.37	0.06	0.05
2	4-3-2022	7-2-2022	0.66	0.06	0.05
3	7-3-2022	10-2-2022	1.47	0.06	0.05
4	10-3-2022	1-2-2023	1.90	0.06	0.05
5	1-3-2023	4-2-2023	0.12	0.01	0.00
6	4-3-2023	7-2-2023	0.08	0.00	0.00
		Maximum	**1.90**	**0.06**	**0.05**
		SLOAPCD Tier 1 Threshold	2.5	0.13	2.5
		Threshold Exceeded?	No	No	No

Notes: BACT = best achievable control technology; ROG = reactive organic compound; NO_x = oxides of nitrogen; DPM = diesel particulate matter; PM_{10} = coarse particulate matter; SLOAPCD = San Luis Obispo County Air Pollution Control District.
See Appendix F for complete results.

As shown in Table 9, the project would not exceed the SLOAPCD Tier 1 thresholds with application of BACT. Impacts would be considered less than significant.

Operational Emissions

Emissions from the operational phase of the project were estimated using CalEEMod. Operational year 2023 was assumed as it would be the follow completion of construction of all phases.

Area Sources

CalEEMod was used to estimate operational emissions from area sources, including emissions from consumer product use, architectural coatings, and landscape maintenance equipment. Emissions associated with natural gas usage in space heating and water heating are calculated in the building energy use module of CalEEMod, as described in the following text.

Consumer products are chemically formulated products used by household and institutional consumers, including detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products. Other paint products, furniture coatings, or architectural coatings are not considered consumer products (CAPCOA 2017). Consumer product ROG emissions were estimated in CalEEMod based on the floor area of buildings and default factor of pounds of ROG per building square foot per day. The CalEEMod default values for consumer products were assumed.

ROG off-gassing emissions result from evaporation of solvents contained in surface coatings, such as in paints and primers used during building maintenance. CalEEMod calculates the ROG evaporative emissions from the application of surface coatings based on the ROG emission factor, the building square footage, the assumed fraction of surface area, and the reapplication rate.

Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chainsaws, and hedge trimmers. The emissions associated with landscape equipment use are estimated based on CalEEMod default values for emission factors (grams per square foot of building space per day) and number of summer days (when landscape maintenance would generally be performed) and winter days. Based on CalEEMod defaults for the County, the average annual number of summer days is estimated at 250 days (CAPCOA 2017).

Energy Sources

As represented in CalEEMod, energy sources include emissions associated with building electricity and natural gas usage (non-hearth). Electricity use would contribute indirectly to criteria air pollutant emissions; however, the emissions from electricity use are only quantified for greenhouse gases (GHGs) in CalEEMod, since criteria pollutant emissions occur at the site of the power plant, which is typically off site. CalEEMod default values for energy consumption for each land use were applied for the project analysis. The energy use from commercial land uses is calculated in CalEEMod based on the Commercial End-Use Survey (CAPCOA 2017).

Mobile Sources

The project would generate criteria pollutant emissions from mobile sources (vehicular traffic) as a result of the employees of the project. The project would include an additional two employees during operation. CalEEMod default data, trip modes, trip lengths, fleet mix, and emissions factors were used for the model inputs. CalEEMod default vehicle emission factors and vehicle fleet mix for 2023, as based on the CARB EMFAC2014 model, were used to estimate emissions associated with vehicular sources.

Stationary Sources

The project would include the addition of a 500-horsepower natural gas fired backup generator. The generator was assumed to operate up to 1 hour per day and 100 hours per year for maintenance and testing in accordance with SLOAPCD Rule 431. CalEEMod default emission factors for natural-gas engines were assumed. Table 10 presents the emissions during operation.

Table 10. Estimated Maximum Operational Criteria Air Pollutant Emissions

Source	ROG	NO_x	CO	DPM	Fugitive PM_{10}
	Pounds per day				
Area	0.57	0.00	0.00	0.00	0.00
Energy	0.01	0.10	0.08	0.00	0.00
Mobile	0.01	0.03	0.10	0.00	0.03
Stationary	4.40	0.33	11.46	0.00	0.00
Total	4.99	0.46	11.65	0.00	0.03
Total ROG + NO_x	5.45		—	—	—
SLOAPCD Threshold	25		550	1.25	25
Threshold Exceeded?	No		No	No	No
Tons per year					
Area	0.10	0.00	0.00	0.00	0.00
Energy	0.00	0.02	0.02	0.00	0.00
Mobile	0.00	0.01	0.02	0.00	0.01
Stationary	0.22	0.02	0.57	0.00	0.00
Total	0.32	0.05	0.61	0.00	0.01
Total ROG + NO_x	0.37		—	—	—
SLOAPCD Threshold	25		—	—	25
Threshold Exceeded?	No		—	—	No

Notes: ROG = reactive organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SLOAPCD = San Luis Obispo County Air Pollution Control District.
See Appendix F for complete results.

As shown in Table 10, the project would not exceed the SLOAPCD's daily or annual significance thresholds during operations. Impacts would be considered **less than significant.**

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

Less Than Significant Impact. The proposed project would not expose sensitive receptors to substantial pollutant concentrations as evaluated below.

Sensitive Receptors

Sensitive receptors are those individuals more susceptible to the effects of air pollution than the population at large. People most likely to be affected by air pollution include children, the elderly, and people with cardiovascular and chronic respiratory diseases. According to SLOAPCD, sensitive receptors are people that have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential

dwelling units (SLOAPCD 2012). There are existing single-family residences located along the southern boundary of the project site and to the west across Mission street from the project.

Carbon Monoxide Hotspots

Traffic-congested roadways and intersections have the potential to generate localized high levels of CO. Localized areas where ambient concentrations exceed federal and/or state standards for CO are termed "CO hotspots." The transport of CO is extremely limited, as it disperses rapidly with distance from the source. Under certain extreme meteorological conditions, however, CO concentrations near a congested roadway or intersection may reach unhealthy levels, affecting sensitive receptors. Typically, high CO concentrations are associated with severely congested intersections operating at an unacceptable level of service (level of service E or worse is unacceptable). Projects contributing to adverse traffic impacts may result in the formation of a CO hotspot. Additional analysis of CO hotspot impacts would be conducted if a project would result in a significant impact or contribute to an adverse traffic impact at a signalized intersection that would potentially subject sensitive receptors to CO hotspots.

Code of Federal Regulations Title 40, Section 93.123(c)(5), Procedures for Determining Localized CO, PM_{10}, and $PM_{2.5}$ Concentrations (Hot-Spot Analysis), states that "CO, PM_{10}, and $PM_{2.5}$ hot-spot analyses are not required to consider construction-related activities, which cause temporary increases in emissions. Each site that is affected by construction-related activities shall be considered separately, using established 'Guideline' methods. Temporary increases are defined as those which occur only during the construction phase and last 5 years or less at any individual site." Although project construction would involve on-road vehicle trips from trucks and workers during construction, construction activities would last approximately 18 months and would not require a project-level construction hotspot analysis. Furthermore, because the proposed project would not result in an increase in long-term operational vehicular trips, an operational CO hotspot evaluation also is not required.

Accordingly, the proposed project would not generate traffic that would contribute to potential adverse traffic impacts that may result in the formation of CO hotspots. In addition, because of continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the South Central Coast Air Basin is steadily decreasing. Based on these considerations, the proposed project would result in a **less than significant impact** to air quality from potential CO hotspots.

Toxic Air Contaminants

Toxic air contaminants (TACs) are defined as substances that may cause or contribute to an increase in deaths or in serious illness, or that may pose a present or potential hazard to human health. The project is located in close proximity to existing residential receptors. Health effects from carcinogenic air toxics are usually described in terms of cancer risk. SLOAPCD recommends an incremental cancer risk threshold of 10 in 1 million. "Incremental cancer risk" is the net increased likelihood that a person continuously exposed to concentrations of TACs resulting from a project over a 9-year, 30-year, and 70-year exposure period will contract cancer based on the use of standard California Office of Environmental Health Hazard Assessment risk-assessment methodology (OEHHA 2015). In addition, some TACs have non-carcinogenic effects. SCAQMD recommends a Hazard Index of 1 or more for acute (short-term) and chronic (long-term) non-

carcinogenic effects.[1] The TAC that would potentially be emitted during construction activities associated with development of the proposed project would be diesel particulate matter.

Diesel particulate matter emissions would be emitted from heavy equipment operations and heavy-duty trucks. Heavy-duty construction equipment is subject to a CARB Airborne Toxics Control Measure for diesel construction equipment to reduce diesel particulate emissions. According to the Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 30-year exposure period for the maximally exposed individual resident; however, such assessments should be limited to the period and duration of activities associated with the proposed project. The duration of the proposed construction activities would only constitute a small percentage of the total 30-year exposure period. The active construction period for the proposed project would be approximately 18 months, after which construction-related TAC emissions would cease. Also, since the pipeline construction would proceed along the alignment, the project would not require the extensive use of heavy-duty construction equipment or diesel trucks in any one location over the duration of development, which would limit the exposure of any proximate individual sensitive receptor to TACs. Due to the relatively short period of exposure at any individual sensitive receptor and minimal particulate emissions generated, TACs emitted during construction would not be expected to result in concentrations causing significant health risks, which would be a **less than significant** impact.

During operations the project would emit small quantities of TAC emissions during testing and maintenance of the natural-gas emergency generator. However, maintenance and testing would be limited to a maximum of 1 hour at a time and would only occur once per month. As such, emissions of TACs would have a **less than significant** impact during operation.

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

Less Than Significant Impact. Other emissions associated with the project are anticipated to be limited to odors, which are assessed herein. The occurrence and severity of potential odor impacts depend on numerous factors. The nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receiving location each contributes to the intensity of the impact. Although offensive odors seldom cause physical harm, they can be annoying, cause distress, and generate citizen complaints.

During project construction, exhaust from equipment may produce discernible odors typical of most construction sites. Potential odors produced during construction would be attributable to concentrations of unburned hydrocarbons from the tailpipes of construction equipment. However, such odors would disperse rapidly from the project site and generally occur at magnitudes that would not affect substantial numbers of people. Accordingly, impacts associated with odors during construction would be less than significant.

SLOAPCD provides a list of land uses associated with odor concerns, which include agricultural uses, wastewater treatment plants, food-processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding (SLOAPCD 2012). The project would include development of a recycled water pipeline and upgrades to the existing WWTF. Odor control would be installed to minimize wet-well turbulence, including

[1] Non-cancer adverse health risks are measured against a hazard index, which is defined as the ratio of the predicted incremental exposure concentrations of the various non-carcinogens from the proposed project to published reference exposure levels that can cause adverse health effects.

collection of odors in scrubbers or biofilters or the addition of odor control chemicals to the sewer upstream of the pump station. Chemicals typically used for odor control include chlorine, hydrogen peroxide, metal salts (ferrous chloride and ferric sulfate), oxygen, air, and potassium permanganate. Further, the project would not result in uncontrolled sources of odor during operations. Impacts would be **less than significant**.

3.4 Biological Resources

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

Environmental Setting

The project area is located in the unincorporated community of San Miguel in northern San Luis Obispo County, between the Salinas River and U.S. Highway 101. It includes the existing WWTF and an adjacent agricultural field subject to regular tilling, and is located in a relatively urbanized area of the community. Terrain is level within the existing plant and the proposed expansion area to the north, except for a short embankment (less than 10 feet high) along the western edge of the property north of the plant. No drainage features and no depressions supporting pooling occur within the project site, although the project parcels include a portion of the Salinas River and associated riparian vegetation.

Methods

Dudek conducted two biological surveys for the project. A reconnaissance-level survey was conducted of the WWTF on June 11, 2020; on the same date Dudek conducted a special-status plant species survey and a San Joaquin kit fox (*Vulpes macrotis mutica*) assessment, focusing on the expansion area north of the existing facility. Dudek conducted a reconnaissance survey of the proposed water pipeline alignment on November 18, 2020. During both surveys, Dudek biologists noted presence of potential aquatic resources, including wetlands and waters of the United States and state; noted habitat conditions for special-status plant and animal species; and recorded all plant and animal species encountered. Prior to conducting surveys, Dudek conducted a literature review, consulting sources such as the California Natural Diversity Database (CDFW 2021a), the California Native Plant Society's Inventory of Rare and Endangered Plants (CNPS 2021a), the National Wetlands Inventory (USFWS 2021), and the U.S. Fish and Wildlife Service's Information for Planning and Consulting website, to determine potentially occurring sensitive biological resources. The California Natural Diversity Database and California Native Plant Society queries included all species occurring in the following U.S. Geological Survey 7.5-minute topographic quadrangle maps: Adelaida, Bradley, Estrella, Paso Robles, Ranchito Canyon, San Miguel, Stockdale Mountain, Valleton, and Wunpost. Dudek also reviewed the San Miguel Community Plan (County of San Luis Obispo 2016b) for biological resources policies and additional information on special-status species considered to have the potential to occur in the area.

For the purpose of the analysis presented in this section, special-status plant species are those plants:

- Listed, proposed for listing, or candidates for listing as threatened or endangered by the U.S. Fish and Wildlife Service under the federal Endangered Species Act (ESA);
- Listed or proposed for listing as threatened or endangered by CDFW under the California Endangered Species Act (CESA);
- Occurring on CDFW's *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2021b);
- Or considered California Rare Plant Rank 1 or 2 in the Inventory of Rare and Endangered Plants of California (CNPS 2021a).

Special-status wildlife species are defined as those that are:

- Listed, proposed for listing, or candidates for listing as threatened or endangered by the U.S. Fish and Wildlife Service under the federal ESA;
- Listed or proposed for listing as threatened or endangered by CDFW under CESA;
- Are of expressed concern to resource/regulatory agencies or local jurisdictions. This includes wildlife that are considered a state Species of Special Concern or are on the CDFW Watch List.

Vegetation mapping of the project site was conducted based on the California Natural Community List (NCL) (CDFW 2020) and the web-based version of the Manual of California Vegetation (CNPS 2021b), which use the scientific name of the dominant species in that alliance as the alliance name. Both are based on the Manual of California Vegetation, Second Edition (MCV2) (Sawyer et al. 2009). The NCL and MCV2 focus on a quantified, hierarchical approach to vegetation classification that includes both floristic (plant species) and physiognomic (community structure and form) factors as currently observed (as opposed to predicting climax or successional stages). The California Native Plant Society launched the web-based version of MCV2 in 2015, which provides up-to-date rarity rankings and vegetation community descriptions (CNPS 2021a). Communities with a global rarity ranking of G1 to G3 or a state rarity ranking of S1 to S3 are considered sensitive.

Vegetation mapping was performed in the field during the rare plant survey, through interpretation of field maps with a high-quality aerial photographic base and/or delineation using a mobile field app supporting detailed aerial imagery and displayed on an iPhone. The GPS data was downloaded into GIS ArcView for placement onto an aerial figure. In combination with the GPS data, a geographic information system technician digitized the delineated vegetation boundaries from field maps using ArcView to create the vegetation community map.

Results

The proposed expansion area to the north is agricultural land that is regularly disced and had been disced within several months prior to the site visit in June 2020. The majority of the project site, including approximately half of the existing WWTF and the area nearer the Salinas River, is occupied by Metz loamy sand, 0% to 5% slopes, a relatively deep soil type suited to agricultural purposes (see Figure 3, Soils, in Attachment A to Appendix B). Nearly all of the remaining portion of the project site is occupied by Hanford and Greenfield soils, a fine sandy loam. Xerofluents, which are sandy flood plain areas, occupy a very limited area in the northeastern part of the project site.

The Salinas River floodplain and associated riparian vegetation are to the east, undeveloped land is to the north, and the UPRR is to the west. Residential development occurs both south of the WWTF and farther west of the UPRR. Development associated with the community of San Miguel extends for approximately 1.0 mile south of the WWTF and approximately 0.25 miles west of the UPRR, to U.S. Highway 101. The Salinas River and associated riparian vegetation partly encircle the central, urban portion of the community of San Miguel to the north, east, and south. Residential development is more scattered west of U.S. Highway 101, and an extensive area of vineyards extends for more than 1.0 mile east of the San Miguel Community Plan Area. This nearly continuous block of vineyards, with scattered residences, also extends southward along the east side of the river for more than 2.0 miles south of San Miguel. The lower slopes of the Cholame Hills extend into Monterey County to the north and northeast.

Vegetation Communities

The project site supports a minimal amount of natural vegetation associated with the Salinas River that overlaps the survey area and limited areas of maintained California annual grasslands, but otherwise supports only anthropogenic land covers, notably developed and agriculture. In all, the area supports five vegetation communities and land covers, including one sensitive riparian community occurring in a very limited area along the eastern boundary: Fremont cottonwood forest alliance. The existing WWTF is considered developed. Descriptions of land covers and vegetation communities occurring in the area are provided below. Table 11 does not include the proposed water pipeline alignment, which occurs entirely within existing roads and development.

Table 11. Summary of Vegetation Communities and Land Cover Types in the Biological Study Area

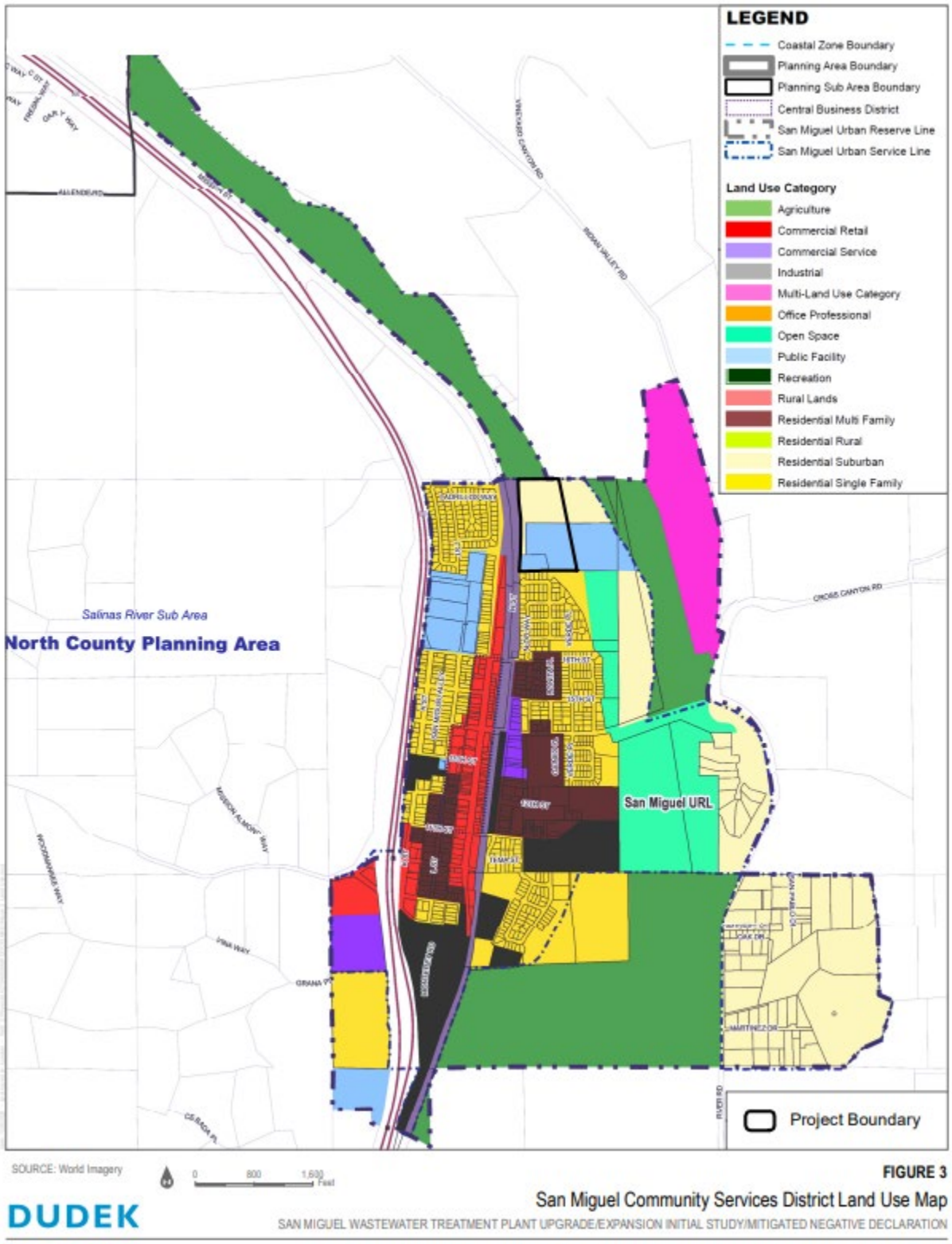
Physiognomic Category	General Habitat	Vegetation Communities	Rarity Ranking Global/State[1]	Acres within Project Site
Herbaceous Alliances and Stands (Upland)	Grassland	California Annual Grassland	N/A	0.91
		Herbaceous Alliances and Stands (Upland) Total		*0.91*
Forest and Woodland Alliances	Woodlands	Fremont Cottonwood Forest Alliance	G4/S3	0.04
		Forest and Woodland Alliances Total		*0.04*
Anthropogenic Land Covers0	N/A	Agriculture	N/A	7.54
		Disturbed	N/A	0.82
		Ornamental	N/A	0.03
		Developed	N/A	1.07
		Anthropogenic Land Covers Total		*9.50*
		Grand Total		**11.99**

California Annual Grasslands. California annual grasslands is described in Holland (1986). It does not have a global or state rarity ranking. Annual grassland is characterized by weedy, introduced annuals, primarily grasses, including wild oat (*Avena* spp.), bromes (*Bromus diandrus, B. madritensis, B. hordeaceus*), black mustard (*Brassica nigra*), filaree (*Erodium* spp.), and prickly Russian-thistle (*Salsola* tragus). It may occur where disturbance by maintenance (e.g., mowing, scraping, discing, spraying), grazing, repetitive fire, agriculture, or other mechanical disruption has altered soils and removed native seed sources from areas formerly supporting native vegetation. Based on historical aerial imagery, California annual grassland within the survey has been subject to maintenance (such as mowing) in the past. However, no recent sign of maintenance was observed during vegetation mapping. Dominant species in the survey area include ripgut brome (*Bromus diandrus*), wild oat, rescuegrass (*Bromus catharticus*), and black mustard. California annual grasslands occupy approximately 1.77 acres along the northern and western edges of the proposed expansion area including approximately 0.91 acres within the project site.

Fremont Cottonwood Forest. The Fremont cottonwood forest alliance is described in MCV2 and NCL and has a global rank of G4 and a state rank of S3 (CDFW 2019); it therefore is considered sensitive. It includes Fremont cottonwood (*Populus fremontii*) as the dominant or co-dominant species in the tree canopy and has a continuous to open canopy less than 25 meters (82 feet) in height with a variable herbaceous ground layer. Throughout California, the Fremont cottonwood forest alliance occurs on floodplains, along low-gradient rivers, along perennial or seasonally intermittent streams, at springs, in lower canyons in desert mountains, in alluvial fans, and in valleys (CNPS 2021b). Fremont cottonwood forest alliance within the survey area consists of Fremont cottonwood as a co-dominant species with red willow (*Salix laevigata*) and arroyo willow (*Salix lasiolepis*). It occupies areas adjacent to the eastern edge of the project site and approximately 0.04 acres within the proposed expansion area.

Agriculture. Agriculture is an anthropogenic land cover that is not included in MCV2 or NCL and does not have a global or state rarity ranking. It typically refers to cultivated croplands, but within the survey area refers to a land cover that is subject to regular tilling, but has not recently been under cultivation. Agriculture occupies approximately 7.54 acres within the project site, in the proposed expansion area.

Figure 3 San Miguel Community Services District Land Use Map



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Disturbed Habitat. Disturbed areas constitute an anthropogenic land cover that displays evidence of physical disturbance. Within the project area, these include regularly maintained areas along the fence line of the existing WWTF and a dirt road along the western edge of the survey area. Disturbed habitat occurs over 0.82 acres within the project site in the proposed expansion area.

Ornamental. Ornamental is an anthropogenic land cover that is not described in MCV2 or NCL and does not have a global or state rarity ranking. It includes areas of planted vegetation or landscaping. The ornamental land cover within the survey area refers to an area within the southwest corner supporting planted tree of heaven (*Ailanthus altissima*), with an understory of maintained non-native grasses. The ornamental land cover occurs within approximately 0.03 acres within the site boundary.

Developed. Developed is an anthropogenic land cover that is not described in MCV2 or NCL and does not have a global or state rarity ranking. On the project site, these are areas occupied by structures and paved or bare graded areas within the WWTF. The entire WWTF is considered developed for purposes of this analysis, although it includes the treatment ponds, which support areas of open water.

Rare Plants

The literature review identified six species considered potentially occurring on the project site based on the San Miguel Community Plan (County of San Luis Obispo 2016b):

- Dwarf calycadenia (*Calycadenia villosa*)
- Kellogg's horkelia (*Horkelia cuneata* var. *sericea*)
- Pale-yellow layia (*Layia heterotricha*)
- Round-leaved filaree (*California macrophylla*)
- Santa Cruz Mountain pussypaws (*Calyptridium parryi* var. *hesseae*)
- Santa Lucia purple amole (*Chlorogalum purpureum* var. *purpureum*)

The California Natural Diversity Database and California Native Plant Society queries identified an additional 25 species recorded in the region. Habitat requirements and potential occurrence of these species are discussed in detail in Appendix B.

No special-status plant species were identified during the special-status plant species survey. A total of 30 plant species were identified within the rare plant survey area (Attachment B to Appendix B). Of these, 12 species (40%) are native to the region and 18 (60%) are non-native. As noted above, most of the survey area had been disced in the recent past. However, several areas around the survey area fringes were not disced, either because they occurred along the fences (on the eastern and southern edges) or in steeper terrain (including a dirt berm in the southwestern corner and a low slope at the western edge). Many of the identified plant species occurred in these areas. However, many of them also occurred scattered throughout the tilled area. And much of the plant litter left from disking consisted of dead non-native, annual grasses, such as oats (*Avena* spp.) and bromes (*Bromus* spp.). In addition, because of regular site disturbance from tilling and from several established tracks, the site is poor habitat for special-status plant species and for native species in general. Most vegetation found along the proposed water pipeline consisted of ornamental non-native trees and shrubs with sparse non-native weeds on the road shoulders. Native trees, shrubs, and perennial plants are planted and maintained within the San Miguel community park boundary.

Special-Status Wildlife Species

No special-status wildlife species were detected during the field surveys. The literature review determined that several non-listed special-status wildlife species have at least a moderate potential to occur on or adjacent to the project site, including northwestern pond turtle (*Actinemys marmorata*), California horned lark (*Eremophila alpestris actia*), and yellow warbler (*Setophaga petechia*). Three listed wildlife species have at least a low potential to occur within or adjacent to the project site. Least Bell's vireo (*Vireo bellii pusillus*), listed as endangered under the federal ESA and CESA, was observed along the Salinas River as recently as 2005 approximately 6.0 miles south of the project site, where a pair was present during the breeding season. Suitable habitat is present, but few observations have been recorded throughout the Salinas River Valley; therefore, the species has only a low potential to occur. California condor, which is listed as endangered under ESA and CESA and is considered a fully protected (FP) species in California, is released in locations south and north of the site and is known to breed in the inner and outer Coast Ranges of Monterey County to the north. It likely flies high above the project site on occasion, in transit between foraging and the core use areas nearer where they nest. It has a low potential to land on the project site because the species avoids heavily developed areas, areas that lack the large open spaces preferred when searching for food, and more level areas that do not often provide the suitable updrafts needed for flight, especially during takeoff. However, it is sometimes attracted to construction sites, where it is susceptible to ingesting small pieces of trash (microtrash). San Joaquin kit fox formerly occurred in the Salinas Valley in San Luis Obispo and Monterey Counties, and may still have potential to occur occasionally in the project vicinity, such as in the areas within or adjacent to the proposed expansion area north of the existing WWTF. In addition, the San Miguel Community Plan (County of San Luis Obispo 2016b) considers this species as potentially occurring in the plan area and provides information for determining mitigation ratios for loss of suitable habitats. All species from the region, as identified in the literature review, are included in Appendix C, Special-Status Wildlife Species with Potential to Occur in the Project Region.

Aquatic Resources

No aquatic resources delineation was conducted for the project site, but the reconnaissance surveys noted the location of potential aquatic resources within and adjacent to the project site and along the proposed water pipeline alignment. No potential aquatic resources occur within the existing WWTF, but riparian vegetation occurs adjacent to the WWTF and to the proposed expansion area. The proposed water pipeline crosses the Salinas River and associated riparian vegetation and also crosses several ephemeral streams east of the Salinas River, along River Road. All of these crossings occur along existing roads.

Wildlife Movement

The existing WWTF is enclosed within an existing fence that is relatively impermeable to medium-size and larger wildlife, although some smaller, resident species are likely to be able to move through the fence. Larger wildlife species likely use the adjacent Salinas River for movement through the vicinity of the community of San Miguel. Some wildlife using the river as both a movement corridor or to meet other habitat needs likely also use undeveloped areas on either side of the river, such as the agricultural and limited grassland habitat in the proposed expansion area. However, because this area is bordered by continuous development on the south and west sides, with scattered development to the north, it is likely not important for movement by larger and more mobile species such as those moving along the Salinas River.

Impact Analysis

a) Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less Than Significant Impact with Mitigation. The 30 plant species identified on the project site during the special-status plant surveys were all common species in the area. In addition, the potential for any special-status species to occur within the disturbed and agricultural land covers north of the existing WWTF is very low. Project activities along the proposed water line would occur in previously disturbed areas along existing roads, and these areas do not have potential to support special-status plants. The locations of impacts outside the existing WWTF for creation of new treatment processing pads and all-weather access roads are within previously disturbed or regularly tilled areas and would result in no impacts to special-status plants. However, the optional solar component could result in impacts to special-status plants, depending on the location of any future impacts from its installation, which would be a potentially significant impact. Implementation of MM BIO-1, however, would ensure that special-status plant surveys are conducted prior to disturbance of any natural communities, including non-native grassland and riparian communities, where special-status plants may have the potential to occur in the future. Impacts to special-status plants would be **less than significant with implementation of mitigation**.

Several non-listed wildlife species have the potential to occur either adjacent to or within the project site. Northwestern pond turtle may occur in adjacent parts of the Salinas River, if ponding suitable as aquatic habitat occurs there. Terrestrial movements are likely limited mostly to riparian habitat. Nesting and movement by northwestern pond turtle is not expected within the developed existing WWTF or its managed ponds, as the existing perimeter fence likely excludes this species. Northwestern pond turtles are also not expected to nest or seek temporary refuge within the agricultural or disturbed areas that dominate the proposed expansion area or in the disturbed or developed areas along the proposed water pipeline alignment. They also have a low potential to move through these areas. Therefore, potential impacts to northwestern pond turtle would be **less than significant**.

Two other potentially occurring, non-listed wildlife species are bird species that have the potential to nest either within the proposed expansion area (California horned lark) or adjacent to the existing WWTF, in the proposed expansion area, and in the proposed water pipeline, in riparian vegetation associated with the Salinas River (yellow warbler). Although the California horned lark has potential to nest in agricultural habitats in the proposed expansion area, including during construction of the optional solar component, loss of habitat due to the project would not be substantial. The project would not result in loss of habitat for yellow warbler, as it would not result in removal of riparian habitat associated with the Salinas River. However, initiation of project activities during the nesting season could result in direct or indirect disturbance of California horned larks in the proposed expansion area, and indirect impacts to yellow warblers nesting in the Salinas River riparian vegetation. Impacts resulting in destruction of native bird nest or in nest failure of native nesting birds would be a violation of the federal Migratory Bird Treaty Act and California Fish and Game Code Section 3503. However, with implementation of MM BIO-2, which would require a pre-construction survey for nesting birds and avoidance of any nests located during the survey, the project would avoid impacts to nesting birds. Therefore, impacts to California horned lark and yellow warbler would be **less than significant with mitigation incorporated**.

As noted above, Least Bell's vireo has a low potential to occur in riparian vegetation adjacent to the project site. The project would not result in loss of least Bell's vireo habitat. However, if this species occurs within riparian vegetation associated with the Salinas River when construction is initiated, construction of any of the project components could result in disturbance of nesting activities and nest failure of a species listed as endangered under both the federal ESA and CESA. If construction is initiated outside the nesting season and is ongoing at the beginning of the nesting season, project activities for all project components could result in indirect impacts to least Bell's vireo by excluding them from nesting in the area. This impact would be potentially significant. Although least Bell's vireo has only a low potential to nest along the Salinas River adjacent to project activities, establishment of the species absence would be necessary to ensure no impacts occur. Implementation of MM BIO-3, which would require protocol surveys for least Bell's vireo prior to initiation of construction activities, and consultation with the U.S. Fish and Wildlife Service and CDFW if any nesting or territorial least Bell's vireos are detected, would reduce this potential impact to **less than significant with mitigation incorporated**.

As the project vicinity is poor habitat for California condor, and this species likely occurs in the area only on occasion, in transit, and does not likely forage in the vicinity, the development of a small amount of agricultural lands in the expansion area would not result in a loss of habitat for this species. A small potential exists that California condor could be attracted to the site during construction. Any condors attracted by construction activities could potentially ingest microtrash (including small bits of plastic, bottle caps, pop-tops, PVC pipe fragments, and broken glass) that could be inadvertently fed to hatchlings, resulting in mortality to hatchlings. This impact would be potentially significant. Implementation of MM BIO-5, standardized measures for avoidance and minimization of impacts to San Joaquin kit fox, including regular removal of all trash items from the project site during construction, would reduce the potential impact to California condor from microtrash to **less than significant with mitigation incorporated**.

Potential impacts to San Joaquin kit foxes could include impacts from loss of habitat and direct and indirect impacts to kit foxes that may be present in the proposed expansion area at the time of construction. Indirect impacts to denning kit foxes could occur within the existing WWTF, in addition to the expansion area, if foxes are occupying dens adjacent to the WWTF at the time construction is initiated. Impacts to San Joaquin kit fox habitat and impacts to individual kit foxes would be potentially significant. Under the San Miguel Community Plan (County of San Luis Obispo 2016b), removal of suitable San Joaquin kit fox habitat requires mitigation at a ratio of up to 4:1, depending on the habitat being removed. In addition, the Community Plan includes a map of the Plan area coded by mitigation ratio, from 0:0 for developed-urban areas up to 4:1 for high-quality habitat (Figure 4-F in County of San Luis Obispo 2016b). Although the existing WWTF is designated as an area requiring no mitigation (0:0), the expansion area north of the existing WWTF and the narrow undeveloped strip between the WWTF and the UPRR are in an area where impacts require habitat mitigation at a 4:1 ratio.

Dudek completed an assessment of San Joaquin kit fox habitat in the expansion area (Appendix D), based on San Luis Obispo County San Joaquin Kit Fox Habitat Evaluation Form. The form includes a series of questions and ratings related to habitat value of a site; final determination of the mitigation ratio is based on a total score based on responses to the questions. The form must be filled out for any project within 10 miles of a San Joaquin kit fox occurrence. As the proposed expansion area occurs in an area where the species has at least a low potential to occur and the project site is within 10 miles of multiple San Joaquin kit fox occurrences (Appendix D), development of lands within the proposed expansion area would be

considered a significant impact due to loss of San Joaquin kit fox habitat, and would require compensatory habitat mitigation.

Although the Figure 4-F designates the expansion area as high-quality habitat, for which a 4:1 mitigation ratio would apply, Dudek's assessment assigned the site a score of 48 out of 100. The score is relatively low because the area proposed for development is small (much less than 40 acres), the site is not immediately adjacent to suitable San Joaquin kit fox habitat, and kit foxes have not been observed within 3 miles of the site within the past 10 years. Also, although the score on the form reflects that suitable habitat occurs on the site, only 0.9 acres out of 18.8 of the expansion area are suitable for denning. Dudek concluded, "Due to the absence of habitat suitable for occupancy by San Joaquin kit fox, the lack of San Joaquin kit fox sign on the Project site, and potential constraints to movement to the north, south, and west from development, vineyards, and U.S. Highway 101, and based on the score as determined on the Kit Fox Evaluation Form," mitigation at a ratio of 2:1 would be appropriate compensation for the loss of suitable San Joaquin kit fox habitat. Additional details of the assessment are included in Appendix D. MM BIO-4 requires that, prior to initiation of project activities within the proposed expansion area, including for the optional solar component, the District must coordinate with the County to determine a suitable mitigation ratio for habitat removed.

In addition to habitat impacts to San Joaquin kit foxes, the project could result in direct and indirect impacts to individuals. Any construction in suitable habitat in the proposed expansion area, including for the optional solar component, could result in destruction of an active kit fox den, including a natal den, and potentially in mortality to kit foxes, if they are present at the time of construction. If any kit fox dens are established adjacent to the WWTF, the proposed expansion area including the optional solar component, and the proposed water pipeline alignment at the time of construction, indirect impacts such as noise from construction, dust, and increased human presence could result in indirect impacts, resulting in abandonment of a den. In addition, construction could provide additional dangers to kit foxes, such as attracting them to the construction site because of the presence of food items, dangerous interactions with pets, entrapment in trenches and uncovered pipes, and other dangers. MM BIO-5, by requiring a pre-construction San Joaquin kit fox survey, avoidance of San Joaquin kit fox dens, and implementation of standardized avoidance and minimization measures, would result in avoidance of direct and indirect impacts to San Joaquin kit fox individuals. With implementation of MM BIO-4 and MM BIO-5, direct impacts to San Joaquin kit fox habitat and direct and indirect impacts to individual kit foxes would be reduced to **less than significant with incorporated mitigation**. Potential impacts would be further reduced through implementation of MM BIO-6, which would require periodic biological monitoring of project activities; MM BIO-7, which would require that a worker environmental awareness program be prepared and present to workers; and MM BIO-8, which requires additional construction measures, would further ensure no impact occurs.

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

Less Than Significant Impact with Mitigation. The existing WWTF consists of developed areas, including open water areas managed during the treatment process. The expansion area adjacent to the existing WWTF includes agriculture, disturbed habitats, and non-native grassland . Sensitive riparian vegetation occurs adjacent to the proposed expansion area and the existing WWTF, but no direct impacts would occur to this area. Any development within the proposed expansion area, including from the optional solar

component, would occur outside riparian vegetation associated with the Salinas River, and would allow for implementation of the Salinas River Trail, in accordance with the San Miguel Community Plan. Because of this, no impacts would occur to sensitive riparian vegetation from implementation of the project within the existing WWTF or the proposed expansion area. All work along the proposed water pipeline where it crosses the Salinas River would be conducted from above deck, and no impacts would occur within the Salinas River or associated riparian vegetation. All other work along the proposed water pipeline would occur within the road rights-of-way, where no sensitive vegetation communities occur. MM BIO-6, which would require periodic biological monitoring; MM BIO-7, which would require that a worker environmental awareness program be prepared and present to workers; and MM BIO-8, which includes additional construction measures, would further ensure that no impacts occur to riparian vegetation. Therefore, impacts would be **less than significant with mitigation incorporated**.

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

Less Than Significant Impact with Mitigation. No potential wetlands, waters of the United States, or waters of the state occur within the existing WWTF or the proposed expansion area. Riparian vegetation associated with the Salinas River occurs adjacent to the WWTF but impacts in this area will be confined to areas of existing development. Impacts in the proposed expansion area for creation of a treatment processing pad and all-weather access road will occur more than 50 feet from any potentially jurisdictional aquatic resources associated with the Salinas River. The optional/future solar component would be constructed west of the proposed Salinas River Trail and therefore would be more than 50 feet from the riparian vegetation.

The proposed water pipeline would cross the Salinas River along River Road, but all impacts would be above the bridge deck and no work would occur within the river or associated riparian vegetation. The proposed pipeline would also cross three ephemeral streams that are assumed to be under the jurisdictions of CDFW and the RWQCB as waters of the state. However, work will occur through direction drilling, through the existing road berm, to avoid impacts to aquatic resources.

Although no direct impacts would occur to wetlands or waters of the United States or state from any of the project components, some potential exists for indirect impacts through storm runoff, erosion, and other water quality impacts. These impacts could occur from construction within the existing WWTF, within the expansion area (including during construction of the optional solar component), and along the proposed water pipeline. However, as detailed in Section 2.5.5, the project will include BMPs and a SWPPP that would be filed with the RWQCB. SWPPPs are required for projects with ground disturbance of more than 1 acre, in compliance with the National Pollutant Discharge Elimination System Construction General Permit. The SWPPP must include erosion control measures such as covering exposed soil stockpiles and working slopes, lining the perimeter of the construction site with sediment barriers, and protecting storm drain inlets. BMPs would include such standard measures as application of temporary straw rolls and silt fences. In addition, the SWPPP would require visual observation and inspection records of BMPs and confirmation that BMPs are effective. In addition, several other measures would further ensure that no impacts occur to wetlands and waters. MM BIO-6 would require biological monitoring of construction and would further ensure that BMPs are maintained. MM BIO-7 would require that a worker environmental awareness program be prepared and presented to workers, and MM BIO-8 would include additional construction measures protecting biological resources, including the requirement that all refueling stations be located at least 100 feet from riparian vegetation.

Because the project would not result in direct impacts to wetlands, riparian vegetation, or waters of the United States or state; because of the requirement to prepare and implement a SWPPP; and because the project will implement MM BIO-6, MM BIO-7, and MM BIO-8, project impacts to state or federally protected wetlands would be **less than significant with mitigation incorporated**.

d) Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less Than Significant Impact with Mitigation. The project would occur entirely within upland land covers and would not affect the movement of any fish species. Also, as noted above, the existing WWTF is entirely fenced and does not currently support movement of wildlife species, except potentially for some smaller, resident species. The proposed expansion area is bordered by movement barriers on the south and west, and provides relatively poor habitat (mostly human-made land covers) for most species. The WWTF upgrade and expansion also would not substantially constrict use of the Salinas River as a movement corridor by larger and medium-sized species, because it would result in no new development that would result in a narrower movement corridor than already permitted by the existing plant. The proposed water pipeline would be installed entirely belowground. Construction activities along the proposed water pipeline may affect wildlife movement, such as within the three ephemeral streams along River Road, but these impacts would be temporary, Therefore, impacts to wildlife movement would be **less than significant** for all project components.

Significant wildlife nurseries may exist within the Salinas River. Aquatic habitats within the river are far from project activities, which are unlikely to affect use of these habitats by aquatic organisms, such as fish and amphibians. However, the project could result in impacts to nesting migratory birds within the riparian vegetation adjacent to the project site, as well as to native bird species nesting in other habitat within or near the project site. Destruction of bird nests, eggs, or nestlings from construction activities, as well as indirect impacts to birds nesting in the riparian and other habitats adjacent to the project site and the proposed water pipeline, causing failure of bird nesting, would be a significant impact. MM BIO-2, however, would reduce this impact by requiring pre-construction nesting bird surveys for all project components, should project activities be initiated in the nesting bird season (approximately February 1 to September 15). It would also require implementation of avoidance measures if any nests are found during the survey. Therefore, impacts to nesting birds, and to native wildlife nursery sites in general, would be **less than significant with mitigation incorporated**.

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

No Impact. The San Miguel Community Plan includes provisions for avoiding impacts to tree species protected by the County (County of San Luis Obispo 2016b). No direct impacts are expected to any tree species other than several smaller ornamental trees within and adjacent to the project site. The project will impact no trees within the Salinas River riparian habitat either adjacent to the project site or along the proposed water pipeline. Dudek observed several oak trees near the northwestern portion of the pipeline alignment but the project is not expected to result in impacts to these trees. The project therefore would result in **no impact** to a tree preservation policy.

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

No Impact. The project would not conflict with any known Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state conservation plan. Therefore, the project would have **no impact** on any such plan.

Mitigation Measures

Avoidance, minimization, and mitigation of the impacts to biological resources identified above will be mitigated through implementation of MM BIO-1 through MM BIO-8, below.

MM BIO-1 **Updated Special-Status Plant Surveys.** Prior to ground disturbances associated with the optional solar component, a qualified botanist shall conduct botanical surveys in accordance with U.S. Fish and Wildlife, California Department of Fish and Wildlife, and California Native Plant Society guidelines. Surveys shall be seasonally timed so that all potentially occurring plant species are in identifiable condition during at least one survey. Potentially occurring plant species shall be determined based on a review of information in the San Miguel Community Plan (County of San Luis Obispo 2016b) and updated queries of the California Natural Diversity Database (https://wildlife.ca.gov/Data/CNDDB) and the California Native Plant Society Rare Plant Inventory (https://www.cnps.org/rare-plants/cnps-inventory-of-rare-plants). In addition to the species mentioned in the San Miguel Community Plan, the surveys should target any potentially occurring species that are listed, candidates for listing, or proposed for listing under the California Endangered Species Act or the federal Endangered Species Act and any species with a California Rare Plant Rank of 1 or 2.

Any special-status plants identified during the survey shall be mapped onto a site-specific aerial photograph and topographic map. Survey results shall be submitted to the County Planning and Building Department for approval. If federally listed, state listed, or California Rare Plant Rank 1B species are found during special-status plant surveys then the project shall be re-designed to avoid impacting these plant species, if feasible. Rare plant occurrences that are not within the immediate disturbance footprint but are located within 50 feet of disturbance limits of construction shall have bright orange protective fencing installed at least 30 feet beyond their extent, or another distance as approved by a County-approved biologist, to protect them from direct and indirect impacts. A restoration plan shall be prepared and submitted to the County as well as other state or federal agencies as appropriate (for instance, if a state listed plant is involved). The restoration plan shall include, at a minimum, the following components:

- Description of the project/impact site (i.e., location, responsible parties, areas to be impacted by habitat type)
- Goal(s) of the compensatory mitigation project [type(s) and area(s) of habitat to be established, restored, enhanced, and/or preserved; specific functions and values of habitat type(s) to be established, restored, enhanced, and/or preserved]
- Description of the proposed compensatory mitigation site (location and size, ownership status, existing functions and values)

- Implementation plan for the compensatory mitigation site (rationale for expecting implementation success, responsible parties, schedule, site preparation, planting plan)
- Maintenance activities during the monitoring period, including weed removal as appropriate (activities, responsible parties, schedule)
- Monitoring plan for the compensatory mitigation site, including no less than quarterly monitoring for the first year (performance standards, target functions and values, target acreages to be established, restored, enhanced, and/or preserved, annual monitoring reports)
- Success criteria based on the goals and measurable objectives; said criteria to be, at a minimum, at least 80% survival of container plants and 30% relative cover by vegetation type
- An adaptive management program and remedial measures to address any shortcomings in meeting success criteria
- Notification of completion of compensatory mitigation and agency confirmation
- Contingency measures (initiating procedures, alternative locations for contingency compensatory mitigation, funding mechanism)

MM BIO-2 **Pre-Construction Nesting Bird Survey and Nest Avoidance.** For construction activities occurring during the nesting season (generally February 1 to September 15), surveys for nesting birds covered by the California Fish and Game Code and the Migratory Bird Treaty Act shall be conducted by a County-approved biologist no more than 14 days prior to vegetation removal. Prior to the surveys, the survey scope and the name, qualifications, and contact information for the surveying biologist must be submitted to the County Planning and Development Department. Surveys shall be conducted during the time when birds are active and shall be sufficient to reliably conclude presence/absence. The surveys shall include the entire project disturbance area plus a 500-foot buffer around the site. If active nests are located, all construction work shall be conducted outside a buffer zone from the nest to be determined by the qualified biologist. The buffer shall be a minimum of 50 feet for non-raptor bird species and at least 300 feet for raptor species. Larger buffers may be required depending upon the status of the nest and the construction activities occurring in the vicinity of the nest. The buffer area(s) shall be closed to all construction personnel and equipment until the adults and young are no longer reliant on the nest site. A County-approved biologist shall confirm that breeding/nesting is completed and young have fledged prior to removal of the buffer. The results of the pre-construction survey shall be submitted to the County prior to construction, and construction shall not commence without authorization from the County.

MM BIO-3 **Least Bell's Vireo Protocol Surveys.** Prior to issuance of a construction permit for any project component requiring construction activities within 800 feet of riparian vegetation associated with the Salinas River, a qualified ornithologist shall conduct surveys for least Bell's vireo in accordance with the Least Bell's Vireo Survey Guidelines (USFWS 2001). The surveys should be conducted during the appropriate season and in accordance with all requirements of the protocol. If through consultation with the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS), it is determined that protocol surveys are not required, said consultation shall be documented prior to issuance of any construction permits. If surveys are required, and least Bell's vireo are detected during the surveys, the applicant shall consult further with USFWS and CDFW to determine appropriate measures to avoid impacts to least Bell's vireo. Upon completion of the project, the biological monitor shall prepare a Final

Compliance Report documenting all compliance activities implemented for the project, including the pre-construction survey results. The report shall be submitted to the County within 30 days of completion of the project.

MM BIO-4 **San Joaquin Kit Fox Compensatory Habitat Mitigation.** The applicant shall mitigate for the loss of San Joaquin kit fox habitat in the proposed expansion area in accordance with the San Miguel Community Plan and in coordination with the County of San Luis Obispo. The applicant shall mitigate for the loss of any non-native grassland, agricultural, or disturbed lands in the proposed expansion area at a ratio agreed upon through County coordination.

MM BIO-5 **Pre-Construction San Joaquin Kit Fox Survey and Kit Fox Avoidance.** Prior to initiation of construction activities, a qualified biologist shall conduct a survey for San Joaquin kit fox dens and sign in suitable habitats within 200 feet of the expansion and the proposed water pipeline alignment. Suitable habitats include native and non-native grasslands and associated scrub, oak savannah adjacent to grasslands, lands that are dryland farmed, and ruderal lands associated with the above-described habitats. The pedestrian survey shall include parallel transects that provide full visual coverage of the survey area, with transects spaced between 30 and 100 feet, depending on vegetation height and density. Dens identified during the survey shall be avoided in accordance with the Standardized Recommendations and for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS 2011). If any potential San Joaquin kit fox dens are identified during the survey, a 50-foot no disturbance buffer shall be established and marked with flagged stakes. If a known den, one confirmed to be currently or previously occupied by a San Joaquin kit fox, is identified during surveys, a 100-foot no disturbance buffer shall be established and marked with flagged stakes. If a natal/pupping den is identified, the qualified biologist shall contact the U.S. Fish and Wildlife Service (USFWS). Definitions for "potential," "known," and "natal" dens are included in Appendix II of the San Joaquin Kit Fox Survey Protocol for the Northern Range (USFWS 1999). If it is not feasible to avoid a potential den, measures may be implemented to monitor the den to determine whether it is occupied. Dens must be monitored for a minimum of 3 days using tracking medium or motion-sensor camera to determine whether it is occupied. If kit fox is not detected, the den may be excavated using hand tools, and the no-disturbance buffer may be removed. If a den is determined to be occupied, kit fox may not be excluded, the den may not be excavated and backfilled, and a minimum 100-foot no disturbance buffer must remain in place.

Additional measures shall be implemented during construction, regardless of whether San Joaquin kit foxes are identified during surveys, to ensure impacts to San Joaquin kit foxes are minimized and avoided, as outlined in USFWS 2011:

- Project-related vehicles should observe a daytime speed limit of 20 mph throughout the site in all project areas, except on county roads and state and federal highways.
- To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2 feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen fill or wooden planks shall be installed. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals.

- All construction pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.
- All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in securely closed containers and removed at least once a week from a construction or project site.
- No firearms shall be allowed on the project site.
- No pets, such as dogs or cats, shall be permitted on the project site.
- Use of rodenticides and herbicides in project areas shall be restricted.
- A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured, or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to USFWS.
- An employee education program should be conducted for this project if subsequent to surveys there are anticipated impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and agency personnel involved in the project. The program should include the following: a description of the San Joaquin kit fox and its habitat needs, a report of the occurrence of kit fox in the project area, an explanation of the status of the species and its protection under the Endangered Species Act, and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.
- In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape or USFWS should be contacted for guidance.
- Any contractor, employee, or military or agency personnel who is responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the California Department of Fish and Wildlife immediately in the case of a dead, injured or entrapped kit fox.
- The Sacramento Fish and Wildlife Office and California Department of Fish and Wildlife shall be notified in writing within 3 working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information.
- New sightings of kit fox shall be reported to the California Natural Diversity Database. A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the USFWS at:

  Endangered Species Division

2800 Cottage Way, Suite W2605
Sacramento, California 95825-1846
916.414.6620 or 916. 414.6600

MM BIO-6 **Biological Monitoring.** Prior to initiation of any construction activities, the applicant shall contract with a qualified biologist to monitor construction activities. The biologists' qualifications shall be submitted to the County Planning and Building Department for approval. The biological monitor shall be present during initial ground disturbances within the existing WWTF, the proposed expansion area, or along the proposed water pipeline within 100 feet of the Salinas River crossing. After completion of initial ground disturbances, the biological monitor shall conduct site inspections at least once per week to ensure that all prescribed avoidance and minimization measures are being fully implemented.

MM BIO-7 **Worker Environmental Awareness Program (WEAP)**. Prior to initiation of construction activities (including staging and mobilization), all personnel associated with project construction shall attend WEAP training, conducted by a County-approved biologist, to aid workers in recognizing special-status resources that may occur in the project area. The specifics of this program shall include identification of the sensitive species and 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 shall also be prepared for distribution to all contractors, their employers, and other personnel involved with construction of the project. All employees shall sign a form provided by the trainer indicating they have attended the WEAP and understand the information presented to them. The form shall be submitted to the County to document compliance.

MM BIO-8 **Additional Construction Measures**. The applicant shall implement several additional construction-related measures protecting biological resources, as outlined in the San Miguel Community Plan:

- All vehicle maintenance/fueling/staging shall occur not less than 100 feet from any riparian habitat or water body. Suitable containment procedures shall be implemented to prevent spills. A minimum of one spill kit shall be available at each work location near riparian habitat or water bodies.
- At the end of each work day, excavations shall be secured with a cover or a ramp provided to prevent wildlife entrapment.
- All trenches, pipes, culverts or similar structures shall be inspected for animals prior to burying, capping, moving, or filling.
- If at any time during construction of the project an Endangered/Threatened species enters the construction site or otherwise may be impacted by the project, all project activities shall cease. A California Department of Fish and Wildlife (CDFW)/U.S. Fish and Wildlife Service (USFWS) approved biologist shall document the occurrence and consult with the CDFW and/or USFWS as appropriate.

3.5 Cultural Resources

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

This section describes the existing cultural resources conditions of the project site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the project.

Existing Conditions

Dudek conducted a Phase 1 cultural resources investigation in support of the IS/MND for the proposed project. The archaeological resources investigation included a cultural resources site records and literature search at the Central Coast Information Center (CCIC), University of Santa Barbara, California, a review of the Native American Heritage Commission (NAHC) Sacred Land File (SLF), and an intensive surface survey covering the accessible portions of the project site. The project site includes APNs 021-051-013, -015, -016 and -017, including the general location of the potential recycled water conveyance system alignment.

Prehistoric Setting

Research on the prehistory of California's Central Coast and the Southern Coast Ranges began in the early 1900s, though most of the work has been conducted since the 1960s. On the basis of primary synthetic research (e.g., Pohorecky 1976; Bouey and Basgall 1991; Greenwood 1972; Bertrando and Levulett 2004; Betts and Foster 2001; Reinman 1961; Jones 1996), Terry Jones and colleagues (Jones et al. 2007) provide perhaps the most current overview of prehistoric adaptive change for a region that includes the coastal and interior areas from San Mateo County in the north to San Luis Obispo County in the south.

The temporal framework promoted by Jones et al. (2007) and others (Farquhar et al. 2011; Stevens et al. 2013) spans a period of approximately 10,000 to 12,000 years and is divided into six different periods. The periods track perceived changes in prehistoric settlement patterns, subsistence practices, and technological advances. These adaptive shifts are identified by changes in material culture found in the archaeological record.

Paleo-Indian Period (prior to 10,000 years ago)

The Paleo-Indian Period represents the initial occupation of the area and evidence of it is quite sparse across the region. On the mainland, artifacts dating to this time are mainly isolated artifacts or sparse lithic scatters. In the San Luis Obispo area, fluted points are documented near the towns of Nipomo and Santa Margarita. The traditional interpretation is that people living during this time were highly mobile hunters whose subsistence efforts focused on large terrestrial mammals.

Erlandson et al. (2007) captures an alternative to this perspective, known as the "kelp highway hypothesis" for the peopling of the Americas. Proponents of this (Dixon 1999; Fladmark 1979) argue that the earliest inhabitants of the region focused their economic pursuits on coastal resources. Archaeological sites that support this hypothesis are mainly from the Santa Barbara Channel Islands.

Millingstone Period (10,000–5500 years ago)

In contrast to sparse evidence for the Paleo-Indian Period, archaeologists report sites dating to the Millingstone Period at several locations throughout the Central Coast. David Banks Rogers first identified this pattern in Southern California as containing abundant handstones, millingstones, cores, and cobble tools, along with a sparse, simple flakedstone assemblage. Wallace further documented the pattern, and Greenwood recognized a Central Coast Millingstone component at CA-SLO-2. Since that time, archaeologists have documented sites with Millingstone components along the Central Coast, and possibly as far north as Tehama County in the Sacramento Valley (Fitzgerald and Jones 1999).

Millingstone assemblages are characterized by abundant millingstones and handstones, core and core-cobble tools, and the occasional projectile point, which, when present, can be lanceolate or large side-notched varieties (Jones et al. 2007). Eccentric crescents are also found in Millingstone components. Sites are often associated with shellfish remains and small mammal bone, which suggest a collecting-focused economy. Contrary to these findings, deer remains are abundant at some Millingstone sites (Jones et al. 2008), which suggests a flexible subsistence focus. People living during the Millingstone era appear to have been highly mobile.

Early Period (5500–2600 years ago)

The Early Period corresponds with the earliest portion of what Rogers (1929) called the "Hunting Culture" (Figure 9.4 in Jones et al. 2007). The Early Period is marked by a greater emphasis on formalized flaked stone tools, such as projectile points and bifaces, and the initial use of mortar and pestle technology. Early Period sites are located in more varied environmental contexts than Millingstone sites, suggesting more intensive use of the landscape of resources than in previous periods.

Early Period artifact assemblages are characterized by large Side-notched and Rossi Square-stemmed projectile points, and Spire-lopped (A), End-ground (B2b and B2c), Cap (B4), and Rectangular (L-series) Olivella beads. Other artifacts include less temporally diagnostic Contracting-stemmed and Año Nuevo Long-stemmed points, and bone gorges.

Archaeologists have long debated whether the shift in site locations and artifact assemblages during this time represent either population intrusion as a result of mid-Holocene warming trends, or an in-situ adaptive shift. The initial use of mortars and pestles during this time appears to reflect a more labor-intensive economy associated with the adoption of acorn processing.

Middle Period (2600 – 1000 years ago)

The Middle Period is marked by a strong trend towards greater investments in resource extraction, tool production, and social organization. During this time, high-cost plant foods come to dominate the subsistence base, people start to live in specific places for longer periods of time, and they start to travel out to acquire focal resources for transport back to their home bases. Artifacts common to this era include Contracting-stemmed projectile points, a variety of Olivella shell beads, and Haliotis (i.e., abalone) ornaments. Bone tools and ornaments are also common, especially in the richer coastal contexts, and circular shell fishhooks appear alongside the pre-existing bone gorge hooks. Grooved stone net sinkers are also found in coastal sites. For the first time mortars and pestles become more common than millingstones and handstones at some sites (Jones et al. 2007: 139).

Faunal remains highlight a shift toward prey species that require more effort to capture, which is interpreted as evidence of greater search and processing time or more labor-intensive technologies. These labor-intensive species include small schooling fishes, sea otters, rabbits, and plants such as acorn. Jones and Haney (2005) offer that Early and Middle Period sites are difficult to distinguish without chronologically anchored shell bead types due to the similarity of the artifact assemblages. Indeed, that both the Early and Middle Periods correspond to Rogers' (1929) "Hunting Culture" (see Jones et al. 2007) points to important cultural continuities, and that while economic behavior does seem to intensify through time (specifically with regards to resource acquisition, settlement patterns, and technological investment), assignation of a specific archaeological site or component on the basis of limited information is problematic.

Middle-Late Transition Period (1000–700 years ago)

The Middle-Late Transition marks the end of Rogers' "Hunting Culture," which seems to occur sometime during this period. Artifacts associated with the Middle-Late Transition include Contracting-stemmed, Double Side-notched, and small Leaf-shaped projectile points. The latter are thought to represent the introduction of bow and arrow technology to the region. A variety of Olivella shell bead types are found in these deposits, along with notched line sinkers, hopper mortars, and circular shell fishhooks (Jones et al. 2007).

The Middle-Late Transition is a time that appears to correspond with social reorganization across the region. This is also a period of marked environmental change as attributed to the Medieval Climatic Anomaly. Jones and colleagues suggest that the fluctuations between cool-wet and warm-dry conditions that characterize the Medieval Climatic Anomaly were an important cause of cultural change (Jones et al. 1999). Middle-Late Transition sites in San Luis Obispo County seem to represent population aggregations. Examples include CA-SLO-9, which is interpreted as a year-round coastal occupation site; CA-SLO-239 contains a large architectural feature; CA-SLO-536, located slightly inland, harbors an extensive bedrock mortar complex adjacent to Chorro Creek; and CA-SLO-1778 contains a substantial prepared house floor feature on a terrace above the Nacimiento River.

Late Period (from 700 years ago to A.D. 1769)

Late Period sites are found in a variety of environmental conditions and include newly occupied task sites and encampments, as well as previously occupied localities. Artifacts associated with this period include Cottonwood and Desert Side-notched arrow points, flaked stone drills, steatite and clamshell disc beads, Haliotis disc beads, Olivella bead types E1 and E2, and earlier used B2, B3, G1, G6, and K1 types. Millingstones, handstones, mortars, pestles, and circular shell fishhooks also continue to be used (Jones et al. 2007; Stevens et al. 2013).

Coastal sites dating to the Late Period tend to be more about resource acquisition or processing, while residential sites are more common inland (Jones et al. 2007: 140).

Historic Context

The historic occupation of the project vicinity can be divided into three settlement periods: the Mission Period (A.D. 1769–1830), the Rancho Period (ca. A.D. 1830–1865), and the American Period (ca. A.D. 1865–1915). Construction of Mission San Miguel in 1797 altered both the physical and cultural landscape of the region. The mission was the center of Spanish influence in the region and affected native patterns of settlement, culture, trade, industry, and agriculture. Following the secularization of the missions by the Mexican Government in 1821, California became part of the Republic of Mexico.

Secularization of lands and a focus on cattle raising marked the Rancho Period, where large land grants of mission lands were ceded to wealthy, prominent Spanish families. Native Americans continued to work as laborers on ranchos during this period. With California statehood in 1850 and the advent of the American Period, farming and more intensive land uses steadily replaced cattle stock raising. Cattle ranching was substantially curtailed by a prolonged drought in the 1860s.

Previous Research

California Historical Resources Information System Records Search

A California Historical Resources Information System (CHRIS) records search completed June 17, 2020, and January 4, 2021, at the CCIC indicates that one prehistoric cultural resource (CA-SLO-1271) has been previously recorded within the project site and one historic resource (CA-SLO-65) and one multi-component archaeological site consisting of both prehistoric and historic resources (CA-SLO-67 – transferred to supplemental loci of CA-SLO-65) are immediately adjacent to the project site. The remaining 15 cultural resources have been previously recorded within the 1-mile radius of the project site and include 3 historic archaeological sites, 4 historic built resources, 7 prehistoric sites, and 1 prehistoric isolate.

Previously Recorded Cultural Resources

CA-SLO-1271 is a prehistoric site measuring 240 meters north to south and 30 meters east to west (790 by 100 feet) at an elevation of 615 feet above mean sea level (amsl). It is located within the WWTF and is documented as consisting of burnt granite rock, chert debitage, and a Pismo clam shell and a cut animal bone of historic age. The site was originally formally recorded in 1989 and described as a low-density concentration of heat-treated granite and chert artifacts. Although not documented in the official site record, a review of previously conducted cultural resources studies revealed that a Phase II significance evaluation was conducted in 2004 (Stewart) that determined CA-SLO-1271 was not significant under CEQA and no further testing or avoidance was recommended.

CA-SLO-65 is a historic site that includes the San Miguel Mission and immediately surrounding area and is located approximately less than 25 meters (82 feet) southwest of the project site's potential conveyance system pipeline and Father Reginald Park/9th Street turn out. CA-SLO-65 is documented as consisting of the Mission adobe, the Mission cemetery, historic refuse, and artifacts related to the habitation of Native Americans at the San Miguel Mission. The site was originally formally recorded in 1949 and described as an "early Caucasian site in the Mission region." CA-SBA-65 was revisited in 1966 and resulted in the recordation of a shell midden containing animal bones

and chipped stone in the area directly north of the Mission cemetery. CA-SBA-65 was again formally recorded in 1999 and as a result of this recordation, the site boundary of resource site CA-SBA-65 was extended to the west beyond the railroad right-of-way. The San Miguel Mission Archangel was listed on the National Register of Historic Places (NRHP) in 1971; however, no formal record of evaluation for the shell midden containing animal bones and chipped stone identified in 1966 was provided within the CCIC records.

CA-SLO-67 is a multicomponent site, consisting of both prehistoric and historic period resources, measuring approximately 30 by 10 meters (100 by 35 feet) at an elevation of 550 feet amsl. It is located approximately 10 meters (32 feet) south of the project site's potential conveyance system pipeline and Father Reginald Park/9th Street turn out. CA-SLO-67 is described as a dark midden with medium marine shell content that has likely been minimized in size due to modern development, with the historic component of the site consisting of reportedly the former camp site of Lt. Col. John C. Fremont. The site was originally formally recorded in 1966 and described the site as consisting of dark midden with medium density shell, bone and teeth, food refuse, and stone flakes. No formal record of evaluation was provided within the CCIC records for this resource. Table 12 summarizes all previously recorded cultural resources within 1 mile of the project site.

Table 12. Previously Recorded Cultural Resources Within 1 Mile of Project Site

Designation	Resource Description	Recorded By	CRHP/NRHP Eligibility	Intersects Project Site	Approximate Distance from Proposed Project Site
CA-SLO-65 (P-40-000065 and P-40-040848)	Historic Mission San Miguel Arcangel.	1949 (Pilling); 1966 (D. S. Miller); 1970 (Louisiana Clayton Dart) 1999 (S. Waechter)	Listed	No	Immediately adjacent; 25 meters (82 feet) southwest
CA-SLO-67 (P-40-000067)	Transferred as a supplemental of CA-SLO-65; multicomponent site with midden, lithic scatter and historic monument as historic camp site of Fremont	1966 (D. S. Miller); 1968 (C. E. Dills)	Unknown	No	Immediately adjacent; 10 meters (32 feet) south
CA-SLO-505 (P-40-000505)	Prehistoric site consisting of a low-density lithic scatter, groundstone, and fire-affected rocks.	1969 (National Park Service)	Unknown	No	410 meters (1345 feet) northeast
CA-SLO-1058 (P-40-001058)	Prehistoric site consisting of a low-density lithic scatter.	1982 (Hampson, Loeffler, Wilfong)	Unknown	No	1280 meters (4199 feet) north
CA-SLO-1062 (P-40-001062)	Prehistoric site consisting of bedrock mortars.	1982 (Hampson)	Unknown	No	820 meters (2690 feet) southeast

Table 12. Previously Recorded Cultural Resources Within 1 Mile of Project Site

Designation	Resource Description	Recorded By	CRHP/NRHP Eligibility	Intersects Project Site	Approximate Distance from Proposed Project Site
CA-SLO-1271 (P-40-001271)	Prehistoric site consisting of a concentration of fire-affected rock and two chert artifacts.	1989 (R. O. Gibson)	Unknown	Yes	Overlapping
CA-SLO-1934H (P-40-001934)	Historic trash deposit consisting of historic and modern refuse. Historic refuse includes glass bottles, glass jars, tin cans, ceramic fragments, metal fragments, and car parts.	1999 (Christopher Ryan)	Unknown	No	25 meters (82 feet) north
CA-SLO-2004 (P-40-002004)	Prehistoric site consisting of a low-density lithic scatter.	1999 (K. Davis, A. Kelly)	Unknown	No	95 meters (312 feet) southeast
CA-SLO-2189H (P-40-002189)	Historic site including concrete foundations, refuse from a WWII era military barracks, and several in situ Mission Period features.	2002 (Clay A. Singer); 2004 (John M. Foster)	Unknown	No	<40 meters (131 feet) east
CA-SLO-2446 (P-40-002446)	Prehistoric site consisting of Monterey chert flakes and one flaked stone tool.	2006 (Clay A. Singer and Douglas A. Greenfield)	Unknown	No	1530 meters (5020 feet) north
CA-SLO-2458 (P-40-002458)	Prehistoric site consisting of low-density lithic scatter.	2006 (Clay A. Singer and Douglas A. Greenfield)	Not Evaluated	No	600 meters (1,970 feet) west
CA-SLO-2791 (P-40-002791)	Historic San Miguel Community Park, dated to 1950.	2014 (Todd Hannahs)	Ineligible	No	<25 meters (82 feet) north
(P-40-038193)	Prehistoric Isolate consisting of a chert biface	1998 (B. Polansky)	Unknown	No	1395 meters (4577 feet) south
(P-40-040762)	Historic Caledonia Adobe	1988 (Tim Gallagher)	Listed	No	855 meters (2805 feet) southeast
(P-40-041115)	Historic electrical utility substation, dated to 1948.	2002 (Kevin Palmer)	Ineligible	No	<25 meters (82 feet) west

Table 12. Previously Recorded Cultural Resources Within 1 Mile of Project Site

Designation	Resource Description	Recorded By	CRHP/NRHP Eligibility	Intersects Project Site	Approximate Distance from Proposed Project Site
(P-40-041116)	Historic Vernacular-style farm complex, main residence dated to 1912.	2002 (Kevin Palmer)	Ineligible	No	<50 meters (164 feet) south
(P-40-041117)	Historic Craftsman style home and associated outbuildings, dated to 1918.	2002 (Kevin Palmer)	Ineligible	No	<80 meters (262 feet) southwest
(P-40-041209)	Historic San Miguel Ranch Reservoir constructed between 1919 and 1937.	2007 (E. Timothy Jones)	Unknown	No	510 meters (1673 feet) west

Previous Cultural Resources Studies

Results of the CCIC records search also indicate that 68 previously conducted studies between 1982 and 2018 were identified within the 1-mile records search radius. Of these studies, 14 overlap the project site, addressing approximately 50% of the project site.

Report No. SL-02478 documents the results of a pedestrian field survey within the southern parcel of the WWTF section of the project site. The survey conducted identified building material and domestic trash associated with a house that once resided on the property, along with non-cultural Monterey chert, and recommended the project proceed without further archaeological inquiry, unless cultural resources were discovered during construction activities.

A review of Report No. SL-01622, which overlaps the WWTF portion of the project site, resulted in the identification of archaeological site CA-SLO-1271. The 1982 report recommended further archaeological investigation through subsurface testing to determine the resource boundaries and significance, as well as archaeological monitoring during all ground disturbing activities in accordance with CEQA.

Report No. SL-05211 documents the results of a Phase II investigation of prerecorded archaeological site CA-SLO-1271. The subsurface testing was conducted in the form of six backhoe trenches dug to a depth of approximately 1.2 meters (3.9 feet). The investigation determined the previously identified site could not be located due to the changes in the topography as a result of vehicular traffic, construction activities, and erosion and further indicated that most of the surface soil had been previously disturbed and no features were identified within the trenches that revealed mostly intact subsurface soils. Additionally, the study concluded that the Monterey chert stones identified during the pedestrian survey were determined to have been broken by mechanical, large vehicular actions and were otherwise unmodified material. As a result of these findings, Report No. SL-05211 determined that archaeological site CA-SLO-1271 is not significant under CEQA, and no further testing or avoidance was recommended. However, due to the discovery of intact soils in one testing location and potential evidence of

anthropic soils within the area of two of the trenches (these trenches were located less than 200 feet from the southern boundary of the current project site), archaeological monitoring was recommended.

Report No. SL-06451, which overlaps the entire northern parcel and the western boundary of the southern parcel of the WWTF section of the project site, resulted in the identification of an isolated chert flake and debris consisting of glass fragments, metal, and bricks during the pedestrian survey. The cultural materials identified during the field survey appeared to be ineligible for listing under the California Register of Historic Resources (CRHR) and were not determined significant under CEQA. However, the presence of the debris and isolated chert flake indicated a possibility for subsurface cultural materials to exist within the proposed WWTF expansion area; therefore, the study recommended archaeological testing where the debris deposit was located, including archaeological monitoring during ground disturbing activities.

All previous cultural resource studies within the 1-mile radius of the project site are summarized in Table 13.

Table 13. Previously Recorded Cultural Resource Studies Within 1 Mile of the Project Site

Year	Author	CCIC ID	Report Title	Addresses Project Site
1982	Hampson, R.; Breschini, G.; and Haversat, T.	SL-00370	Preliminary Cultural Resources Reconnaissance of a Proposed Natural Gas Pipeline and Electric Transmission Lines, Monterey, San Luis Obispo, and Kings Counties, California	No
1985	Hoover, R.	SL-00724	Letter Report: Proposed Phoenix Apartments Site in San Miguel	No
1988	Peak and Associates	SR-01082	Class I Inventory for a Proposed Fiber Optic Communication Route, San Francisco to Los Angeles.	Yes
1990	Dills, C.	SL-01621	Archaeological Potential of Riverbed Mining Project at San Miguel	No
1988	Peak and Associates	SR-01446	Class I Inventory for the Proposed American Telephone and Telegraph Salinas to Los Angeles Fiberoptics Communication Route	Yes
1989	Gibson, R.	SL-01622	Results of a Phase One Archaeological Surface Survey of Tract 1840, San Miguel, CA	Yes
1988	Gibson, Robert O.	SL-02192	Results of an Archaeological Surface Survey for Tract 1552, San Miguel, San Luis Obispo County, CA	No
1991	Breschini, Gary S. and Haversat, Trudy	SL-02286	Additional Cultural Resources Reconnaissance for the Amoco Seismic Program In and Around Camp Roberts, San Luis Obispo and Monterey Counties, California	No
1993	Dills, Charles E.	SL-02478	San Miguel Sewer District Project Parcel Number 21-051-13 Project Number 960	Yes
1993	Gibson, Robert O.	SL-02539	Results of Archaeological Surface Survey for the SLO County Waterworks District No. 1 Project in San Miguel	Yes
1994	Gibson, Robert O.	SL-02722	Results of Archaeological Monitoring for the San Miguel Water Improvements Project Near San Miguel Mission San Luis Obispo County, Ca	No

Table 13. Previously Recorded Cultural Resource Studies Within 1 Mile of the Project Site

Year	Author	CCIC ID	Report Title	Addresses Project Site
1996	Pruett, Catherine Lewis	SL-03030	An Archaeological Assessment of A Proposed 12 Mile, Four Inch Gas Pipeline From Niblick Road To Camp Roberts, Along North River Road, Highway 101, And Southern Pacific Railroad	Yes
1996	-	SL-03030A	Appendix I: Records Search; Appendix II: Qualifications of Project Personnel (removed)	No
1998	Gibson, Robert	SL-03444	Results of Phase One Archaeological Surface Survey for the San Miguel Fire Station Project at 1150 Mission Street	No
1998	Hoover, Robert	SL-03855	Archaeological Survey of the River Road Bridge Over the Salinas River at San Miguel, San Luis Obispo County, CA	Yes
1999	Ryan, Christopher	SL-03895	Cultural Resources Evaluation at the River Road Bridge, Salinas River Bridge Seismic Retrofit Project, San Miguel, CA	Yes
2000	Wendy J. Nelson; Maureen Carpenter; and Julia Costello	SL-04057	Cultural Resources Survey For The Level (3) Communications Long Haul Fiber Optics Project Segment WS05: San Jose to San Luis Obispo	Yes
2000	-	SL-04057A	Appendix A: Project Maps and Site Locations	No
2001	Singer, Clay A.	SL-04385	Cultural Resources Survey and Impact Assessment for a 9.9-acre Property in the Community of San Miguel, San Luis Obispo County, California [Tentative tract 2421]	No
2002	John Parker	SL-04652	Cultural Resource Investigation of the Proposed AT&T/Bechtel Wireless Site No. 12008	No
2002	Hutchinson, Mark	SL-04776	Historic Property Survey Report for the River Road Bridge Replacement Project on the Salinas River at San Miguel, San Luis Obispo County, CA	Yes
2002	Clift, Gregory and Farrell, Nancy	SL-04794	Phase 1 Archaeological Survey Of A Commercial Lot On The Northwest Corner Of 10th and K Streets, San Miguel, San Luis Obispo County, California	No
2002	Singer, Clay A.	SL-04830	Cultural Resources Survey and Impact Assessment for Mission Garden Estates, a 53-acre Residential Property in San Miguel, San Luis Obispo County, California	No
2003	Parker, John	SL-04914	Cultural Resources Investigation of the Fetyko Parcel APN 027-022-041, East End of Oak Drive, San Miguel, CA	No
2002	Hutchinson, M.	SL-04983	Historic Property Survey Report for the River Road Bridge Replacement Project on the Salinas River at San Miguel, San Luis Obispo County, California	Yes
2002	Ethan Bertrando	SL-05032	Cultural Resource Inventory of COAL 90-508; 22 Acre Parcel Northwest Corner of Mission Street and 19th Street San Miguel, CA	No

Table 13. Previously Recorded Cultural Resource Studies Within 1 Mile of the Project Site

Year	Author	CCIC ID	Report Title	Addresses Project Site
2003	Jennifer Yogakumar	SL-05049	Section 106 Review of the Proposed Bechtel Corporation, on behalf of AT&T Wireless Services, Site Number 950012008, "Wolf Water Tank", 13550 River Road, San Miguel, San Luis Obispo County, California.	No
2002	Jennifer Yogakumar	SL-05049A	Attachment A: Maps Showing the Proposed Site Location and the Area of Potential Effect for the Site Attachment B: Site Plans Attachment C: Site Photographs Attachment D: Photo simulations	No
2002	John Parker	SL-05049B	Attachment E: Cultural Resource Investigation of the Proposed AT&T/Bechtel Wireless Site No. 12008. (removed by CCIC Staff, see SL-04652) and Records Search Results Letter	No
2002	Jennifer Yogakumar	SL-05049C	Attachment F: Response from the Native American Heritage Commission	No
2002	Jennifer Darcangelo	SL-05049D	Email Correspondence Between Jennifer Darcangelo (OHP) and Holly Moore (ATC) Re: Wolf Water Tank Site in SLO County; Additional Historical Information	No
2002	Knox Mellon	SL-05049E	SHPO Response Letter Re: Proposed AT&T Wireless Services Site "Wolf Water Tank", 13550 River Road, San Miguel, San Luis Obispo County, California	No
2002	Stephen Bryne	SL-05060	Historic Property Survey Report for the River Road Bridge Replacement Project on the Salinas River at San Miguel, San Luis Obispo County, California 05-SLO-0-CR Federal Project No. BRLSZD-5949(060) Bridge No. 49C0045	Yes
2002	Stephen Bryne	SL-05060A	Attachment A: List of Preparers Attachment B: Project, Location, and APE Maps	No
2002	Kevin Lex Palmer	SL-05060B	Attachment C: Historical Resources Evaluation Report	No
2002	Stephen Bryne	SL-05060C	Attachment D: Archaeological Survey Report	No
1999	Christopher Ryan	SL-05060D	Attachment E: Cultural Resources Evaluation at the River Road Bridge, Salinas River Bridge Seismic Retrofit Project, San Miguel, California	No
2002	Stephen Bryne	SL-05060E	Attachment G: Correspondence	No
2003	Nathan Stevens	SL-05080	Phase I Archaeological Survey of a Lot on the Northwest Corner of 15th and Mission Streets, San Miguel, San Luis Obispo County, California (APN: 021-131-011)	No
2004	Susan Stewart	SL-05211	Phase II Archaeological Investigations at CA-SLO-1271: Subsurface Testing at the Proposed Mission Meadows Housing Development in San Miguel, San Luis Obispo County, California	No

Table 13. Previously Recorded Cultural Resource Studies Within 1 Mile of the Project Site

Year	Author	CCIC ID	Report Title	Addresses Project Site
2004	Clay A. Singer	SL-05212	Cultural Resource Survey and Impact Assessment for a Commercial Property at 1300 "N" Street in San Miguel, San Luis Obispo County, California [APN 021-231-025/026/027]	No
2004	Clay A. Singer	SL-05213	Cultural Resources Survey and Impact Assessment for a 7.8 Acre Property Near the Town of San Miguel, San Luis Obispo County, California [APN 027-271-008]	No
2004	John Parker	SL-05220	Cultural Resource Investigation of the Midland Pacific Parcel Cemetery Road, San Miguel, CA	No
2003	Roberta S. Greenwood, John M. Foster, Dana N. Slawson, and Judith Porcasi	SL-05244	Reconnaissance of Historic Properties in San Miguel California	No
2005	Brian Glenn, Sherri Gust, and Kim Scott	SL-05307	Archaeological and Paleontological Assessment Report for the San Lawrence Terrace Project, San Miguel, San Luis Obispo County, California	No
2004	Nancy Farrell	SL-05320	Phase I Archaeological Survey of a Parcel at 10th and L Streets, San Miguel, San Luis Obispo County, California	No
2004	Nancy Farrell	SL-05321	Phase I Archaeological Survey of 988 River Road, San Miguel, San Luis Obispo County, California (APN 021-241-015)	No
2005	Hoover, Robert L.	SL-05530	Archaeological Evaluation For a Multi-Purpose Hall and Classrooms, San Miguel, California	No
2004	Robert S. Greenwood and John M. Foster	SL-05334	Environmental Impact Report: Mission Garden Estates Project, Archaeological Element	No
2004	Clay A. Singer	SL-05379	Cultural Resources Survey and Impact Assessment for a 15 Acre Property Located on River Road East of the Town of San Miguel, San Luis Obispo County, California [APN 027-271-030].	No
2004	Clay A. Singer	SL-05388	Cultural Resources Survey and Impact Assessment for an 0.3 Acre Property Located on L Street in the Town of San Miguel, San Luis Obispo County, California [APN 021-322-008].	No
2005	Thor Conway	SL-05446	An Archaeological Surface Survey of 720 16th Street, San Miguel, San Luis Obispo County, California	No
2005	Hoover, Robert L.	SL-05530	Archaeological Evaluation For a Multi-Purpose Hall and Classrooms, San Miguel, California	No
2005	Singer, Clay A. and Melissa Chatfield	SL-05538	Cultural Resources Survey and Impact Assessment For a Property at 1520 L Street in the Town of San Miguel, San Luis Obispo County, California (APN 021-131-019).	No

Table 13. Previously Recorded Cultural Resource Studies Within 1 Mile of the Project Site

Year	Author	CCIC ID	Report Title	Addresses Project Site
2005	Singer, Clay A.	SL-05540	Cultural Resources Survey and Impact Assessment For a Residential Property at 965 L Street in the Town of San Miguel, San Luis Obispo County, California	No
2005	Conway, Thor	SL-05588	An Archaeological Surface Survey at 12th Street, San Miguel, San Luis Obispo County, California	No
2005	Laurie, Leroy	SL-05596	Phase I Archaeological Survey of 5 Acres at the Southwest Corner of 11th and N Streets in San Miguel, San Luis Obispo County, California (Tentative Tract Number 2610).	No
2005	Hoover, R.L.	SL-05698	Archaeological Evaluation for a Multi-Purpose Hall and Classrooms, San Miguel, California – Filed Under E-5530	No
1997	U.S. Army Corps of Engineers and Jones and Stokes Associates Inc.	SL-05701	Draft: Camp Roberts Built Environment Evaluation	No
2006	Hoover, R.L.	SL-05710	Archaeological Report on Two Observation Trenches, North Wing Espadana, Mission San Miguel Archangel	No
2006	Singer, C.	SL-05740	Cultural Resources Survey and Impact Assessment for the Indian Valley Sand and Gravel Project at the Salinas River Near San Miguel in San Luis Obispo County, California [APN 027-420-001/002/003/005/009/010/016]; with information on archaeological sites CA-SLO-2446 and CA-SLO-2458	No
2006	Singer, C.	SL-05759	Phase III Archaeological Monitoring at Tract 2605, Mission Meadows III, in the Town of San Miguel, San Luis Obispo County: with Information about Site CA-SLO-1271	No
2006	Singer, C.	SL-05761	Cultural Resources Survey and Impact Assessment for a Property at 1222 N Street in San Miguel, San Luis Obispo County, California [APN 021-231-017/024/041	No
2004	Hoover, R.L.	SL-05795	Archaeological Report on Initial Stabilization Project, Mission San Miguel Arcangel, California	No
2006	Farrell, Nancy	SL-05837	Historical Evaluation of the Kingery House Parcel at 10th and L Streets, San Miguel, California [APN: 021-301-008]	No
2005	Robert O. Gibson	SL-05926	Results of Phase One Archaeological Surface Survey for the Cisneros Parcel (APN 021-271-002) 1155 K Street, san Miguel, san Luis Obispo, CA	No
2005	Robert O. Gibson	SL-05927	Results of Archival Records Search and Phase One Archaeological Surface Survey for the San Miguel Ranch Development West of Highway 101, San Miguel, San Luis Obispo County, CA	No

Table 13. Previously Recorded Cultural Resource Studies Within 1 Mile of the Project Site

Year	Author	CCIC ID	Report Title	Addresses Project Site
2007	Farrell, Nancy	SL-06057	Archaeological Survey at 1215 Mission Street, San Miguel, San Luis Obispo County, California [APN 021-261-020]	No
2007	Parker, John	SL-06080	Cultural Resources Investigation of the Bohner Parcel Corner of 10th and "L" streets, San Miguel, CA	No
2007	Singer, Clay	SL-06118	Phase II Archaeological Testing at a Property on L Street in the Town of San Miguel, San Luis Obispo County, California [APN021-322-008]: Information for the Todd minor Use Permit DRC 2006-00168	No
2008	Hoover, Robert L., David N. Hoover, and James T. Larson	SL-06169	Archaeological Component of the Soil Testing and Basal Erosion Activities, Nave and Sacristy, Mission San Miguel, California (CA-SLO-67)	No
2008	Lee, Sean A.	SL-06230	Archaeological Resources Survey and Impact Assessment for 1111 Mission Street in Town of San Miguel, San Luis Obispo County, California.	No
2007	Hannahs, Todd.	SL-06284	Phase I Archaeological Survey and Historic Structure Assessment of an Abandoned Swimming Pool San Miguel, California [APN 021-195-007]	No
2008	Bartrando, Ethan	SL-06352	Cultural Resource Inventory of the Garcia Properties, APN: 027-121-005 and 027-171-011 8790 North Barnes Road San Miguel, CA.	No
2009	Hoover, Robert L., Hoover, David N., Larson, James T., Dishman, Doreen, and Ayala, Yvonne	SL-06397	Archaeological Monitoring Report, Parish Hall Complex. Mission San Miguel, California	No
2008	Jones, E.T.	SL-06451	A Cultural and Paleontological Resources Study for the San Miguel Ranch Project	Yes
2010	Hoover, Robert	SL-06505	Archaeological Investigations, Church Drainage Project, Mission San Miguel, California	No
2011	Hoover, Robert; Hoover, David; and Larson, James	SL-06649	Archaeological Investigations, West Wing (Phase IVB), Mission San Miguel, California	No
2014	Allison Lober and Todd Hannahs	SL-06850	Phase I Archaeological Survey of the San Miguel Community Park at 12th and K Streets, San Miguel, San Luis Obispo County, California [APN: 021-251-003, 021-252-002, 004, and 011]	No
2018	Thor Conway	SL-07314	An Archaeological Surface Survey at 13340 River Road, San Miguel, San Luis Obispo County, California	No
N/A	Robert L. Hoover and Dave Hoover	SL-07518	Phase 1 Cultural Resources Study 968 L Street, San Miguel, California	No

Note: Shading indicates the report addresses the project site.

Historic Aerials

Aerial images were compared to better understand prior landform alteration and land use. Historic aerials are available for the years 1937, 1939, 1949, 1963, 1969, 1978, 1987, 1994, and 2002 (UCSB 2020).

Review of historic aerials show the surface of the project site, where the WWTF is located, has been repeatedly disturbed by agriculture, grading, and construction since at least 1937. The parcel north of the WWTF has only been subject to grading and agricultural disturbance. The earliest known development of the southern parcels first occurred in the early 20th century with residential structures located in the southwest portion; these parcels were subject to varied development until commencement of the wastewater treatment facility in the early 1970s. Review of the historic aerials also show the potential recycled water conveyance system pipeline route west of the Salinas River and the bridge crossing the Salinas River was developed since at least 1937. The section of River Road east of the Salinas River was developed as early as 1978.

Field Investigations

Dudek conducted an intensive archaeological survey of the project site containing the WWTF (APNs 021-051-013, 021-051-015, and 021-051-017) on June 24, 2020, and the route of the potential recycled water conveyance system pipeline, which includes Mission Street between Monterey Road and 20th Street, N Street between 14th Street and 20th Street, 12th Street, 14th Street, 16th Street, Indian Valley Road, and North River Road between N Street and Estrella Road on December 16, 2020.

The survey within the WWTF was divided into two parcels during the survey: a northern parcel (APN 021-051-017) that is void of development and two southern parcels (APN 021-051-013 and APN 021-051-015) that are currently occupied by four aerated lagoons, three percolation ponds, and one drying bed. While the survey in the northern parcel identified items potentially historic in nature, including a pull-tab can, a piece of ceramic, and a horseshoe, the items did not include makers' markings or evidence for typology and were intermixed with modern debris. As a result, the debris scatter was not identified or recorded as an archaeological site or loci of a nearby previously recorded archaeological site. The southern parcel of the WWTF also resulted in the identification of potentially historic debris along the proposed project boundary at the intersection of APN 021-051-017 and APN 021-051-015. The debris is consistent with the results of a previously conducted pedestrian survey (Dills 1993) and with the location of an early 20th century structure depicted on historic aerials. However, the debris concentration was highly disturbed and intermixed with modern materials and is partially interrupted and truncated by the facility's entrance road. These observations are consistent with Dills' (1993) account and therefore, the observed resources within the southern parcel were determined by Dills (1993) and this study to not warrant recordation as an archaeological site or be significant under CEQA. Attempts were made to locate the previously identified prehistoric archaeological site (CA-SLO-1271) within the southern parcel. However, the recorded boundary of the northern portion of the archaeological site is consistent with the current location of an access road and an aerated lagoon obscuring ground surface visibility. The level of disturbance and lack of cultural material is consistent with findings of previous surface and subsurface archaeological investigations (Gibson 1993; Stewart 2004); Stewart (2004) determined that archaeological site CA-SLO-1271 is not significant under CEQA, and no further testing or avoidance was recommended. No prehistoric cultural resources were observed within or near the reported boundary of CA-SLO-1271 or within the entirety of both southern parcels.

The survey of the potential recycled water conveyance system pipeline, which would primarily extend approximately 75% through the downtown area of San Miguel through residential, commercial, and developed areas and

approximately 25% through the more rural surrounding community to the east of the downtown area, did not result in the identification of cultural resources. The potential recycled water conveyance system pipeline through the town of San Miguel was completely obscured by pavement along the entire extent of the proposed pipeline, providing no ground surface visibility. However, landscaped areas present between the street and adjacent sidewalk were sporadically planted with ornamental vegetation and trees, resulting in very good to excellent (70% to 100%) ground surface visibility. No cultural resources were observed within the potential pipeline route under generally reliable conditions.

Relevant Plans, Policies, and Ordinances

Federal

Although there is no federal nexus for this project, the trail proposal was evaluated in consideration of NRHP designation criteria and integrity requirements.

National Register of Historic Places

The NRHP is the United States' official list of districts, sites, buildings, structures, and objects worthy of preservation. Overseen by the National Park Service, under the U.S. Department of the Interior, the NRHP was authorized under the National Historic Preservation Act, as amended. Its listings encompass all National Historic Landmarks and historic areas administered by the National Park Service.

NRHP guidelines for the evaluation of historic significance were developed to be flexible and to recognize the accomplishments of all who have made significant contributions to the nation's history and heritage. Its criteria are designed to guide federal agencies, state and local governments, and others in evaluating potential entries in the NRHP. For a property to be listed in or determined eligible for listing, it must be demonstrated to possess integrity and to meet at least one of the following criteria:

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
>
> A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
> B. That are associated with the lives of persons significant in our past; or
> C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
> D. That have yielded, or may be likely to yield, information important in prehistory or history.

Integrity is defined in NRHP guidance, How to Apply the National Register Criteria for Evaluation, as "the ability of a property to convey its significance. To be listed in the NRHP, a property must not only be shown to be significant under the NRHP criteria, but it also must have integrity (NPS 1990)." In assessing historic integrity, the NRHP recognizes seven aspects or qualities that, in various combinations, define integrity. In order to retain historic integrity "a property will always possess several, and usually most, of the aspects" (NPS 1990). The seven aspects of integrity are: location, design, setting, workmanship, materials, feeling, and association. NRHP guidance further

asserts that properties be completed at least 50 years ago to be considered for eligibility. Properties completed fewer than 50 years before evaluation must be proven to be "exceptionally important" (criteria consideration G) to be considered for listing.

State

California Register of Historical Resources

In California, the term "historical resource" includes "any object, building, structure, 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]). In 1992, the California legislature established the CRHR "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1[a]). The criteria for listing resources on the CRHR, enumerated as follows, were developed to be in accordance with previously established criteria developed for listing in the NRHP, enumerated as follows. According to PRC Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains "substantial integrity" and (ii) meets at least one of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
(2) Is associated with the lives of persons important in our past.
(3) 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.
(4) Has yielded, or may be likely to yield, information important in prehistory or history.

To understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource less than 50 years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (see 14 CCR 4852[d][2]).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are the state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

California Environmental Quality Act

The following CEQA statute (PRC Section 21000 et seq.) and Guidelines (14 CCR 15000 et seq.) are of relevance to the analysis of archaeological, historic, and tribal cultural resources:

- PRC Section 21083.2(g) defines "unique archaeological resource" as 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 (PRC Section 21083.2[g]):

(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 21084.1 and CEQA Guidelines Section 15064.5(a) defines "historical resources." In addition, CEQA Guidelines Section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource"; it also defines the circumstances when a project would materially impair the significance of a historical resource.
- PRC Section 21074(a) defines "tribal cultural resources."
- PRC Section 5097.98 and CEQA Guidelines Section 15064.5(e) set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.
- PRC Sections 21083.2(b) and 21083.2(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures. Preservation in place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context and may help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

Under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (PRC Section 21084.1; 14 CCR 15064.5[b]). If a site is listed or eligible for listing in the CRHR, included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1(c)), it is an "historical resource" and is presumed to be historically or culturally significant for purposes of CEQA (PRC Section 21084.1; 14 CCR 15064.5[a]). The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption (PRC Section 21084.1; 14 CCR 15064.5[a]).

A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (14 CCR 15064.5[b][1]; PRC Section 5020.1[q]). In turn, the significance of an historical resource is materially impaired when a project does any of the following (14 CCR 15064.5[b][2]):

(A) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or

(B) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(C) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA.

Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project site contains any historical resources, then evaluates whether that project will cause a substantial adverse change in the significance of a historical resource such that the resource's historical significance would be materially impaired.

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (PRC Sections 21083.2[a]–[c]). Impacts on non-unique archaeological resources are generally not considered significant environmental impacts (PRC Section 21083.2[a]; 14 CCR 15064.5[c][4]). However, if a non-unique archaeological resource qualifies as a tribal cultural resource (PRC Sections 21074[c] and 21083.2[h]), further consideration of significant impacts is required.

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are detailed in PRC Section 5097.98.

California Health and Safety Code Section 7050.5

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. California Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains can occur until the county coroner has examined the remains (Health and Safety Code Section 7050.5[b]). PRC Section 5097.98 also outlines the process to be followed in the event that remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the NAHC within 24 hours (Health and Safety Code Section 7050.5[c]). The NAHC will notify the most likely descendant (MLD). With the permission of the landowner, the most likely descendant may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the MLD by the NAHC. The MLD may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

Thresholds of Significance

The significance criteria used to evaluate the project impacts to cultural resources are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to cultural resources would occur if the project would:

(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.

Impact Analysis

a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

Less Than Significant Impact With Mitigation. As previously discussed above, a CHRIS records search was completed for the project site and 1-mile radius. Results of the CHRIS search indicate that 68 previously conducted cultural resource studies have been conducted within 1 mile of the project site and potential recycled water conveyance system alignment, 14 of which overlap and address approximately 50% of the project site. Information collected from a review of the previously conducted studies and the findings of the Phase I cultural resources investigation establish that the project site and potential recycled water conveyance system alignment have been subject to extensive disturbance since at least 1937 and are unlikely to possess intact historical cultural deposits. However, a portion of the potential recycled water conveyance system pipeline along Mission Street between 9th and 10th streets, as well as the Father Reginald Park/9th Street turn out, are immediately adjacent to cultural resources associated with the historical San Miguel Mission (CA-SLO-65 and CA-SLO-67). As such, there is potential for unknown intact subsurface historical cultural resources to exist within this portion of the project site.

Therefore, due to the cultural sensitivity of the general project area, specifically the portion of the potential recycled water conveyance system pipeline immediately adjacent the historical San Miguel Mission (CA-SLO-65 and CA-SLO-67), it is possible that unknown cultural material and features could be encountered during proposed project construction. Therefore, the proposed project could have potentially significant impacts to cultural resources. Implementation of MM-CUL-1 through MM-CUL-4 would reduce impacts to historical resources, including both archaeological and built environment resources, to **less than significant with mitigation**.

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

Less Than Significant Impact With Mitigation. Results of the CHRIS search indicate that 68 previously conducted cultural resource studies have been conducted within 1 mile of the project site and potential recycled water conveyance system alignment, 14 of which overlap and address approximately 50% of the project site. Information collected from a review of the previously conducted studies and the findings of the Phase I cultural resources investigation establish that the project site and potential recycled water conveyance system alignment have been subject to extensive disturbance since at least 1937 and are unlikely to possess intact cultural deposits. However, there are two areas within the project site and potential recycled water conveyance system alignment that suggest general archaeological sensitivity. One previously recorded cultural resource (CA-SLO-1271) has been identified within the southern portion of the project site parcel, APN 021-051-015, and was previously subjected to subsurface testing. As a result, CA-SLO-1271 was found not significant pursuant to CEQA criteria and ineligible for listing on NRHP and CRHP; further, no surface or subface cultural reposits were identified, suggesting that the site had been completely destroyed by earlier construction. Additionally, a portion of the potential recycled water conveyance system pipeline along Mission Street between 9th and 10th streets, as well as the Father Reginald Park/9th Street turn out, is immediately adjacent to cultural resources associated with the historic period San Miguel Mission (CA-SLO-65 and CA-SLO-67). As such, there is potential for unknown prehistoric and historic cultural resources to exist within this portion of the project site.

Therefore, due to the archaeological sensitivity of the general project area, specifically along the southern boundary of APN 021-051-015, the Mission Street Purple Pipeline between 9th and 10th streets and the Father Reginald Park/9th Street turn out, it is possible that unknown cultural material and features could be encountered during proposed project construction. Therefore, the proposed project could have potentially significant impacts to cultural resources. Implementation of MM-CUL-1 through MM-CUL-4 would reduce impacts to prehistoric and historic period archaeological resources to **less than significant with mitigation**.

c) Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Less Than Significant Impact with Mitigation. No burial areas have been previously identified or were observed during the pedestrian survey within the project site. However, CCIC records indicate that one previously recorded historic-period resource (CA-SLO-65), which consists of the San Miguel Mission Arcángel, is less than 25 meters (approximately 82 feet) from the general alignment of the potential recycled water conveyance system pipeline. According to the 1949 CCIC record, the resource includes the Mission cemetery. The site was revisited in 1966, just north of the cemetery; however, no details pertaining to the cemetery were documented at that time. In 1999, the site was revisited and formally recorded, and within that record the site boundary for CA-SLO-65 was extended to the west, beyond the railroad right-of-way; however, no details of the limits of the cemetery were included in the record. As currently proposed, the general alignment of the potential recycled water conveyance system pipeline is within the existing paved street. Additionally, the multi-component site CA-SLO-67, which is documented as consisting of the former camp site of Lt. Col. John C. Fremont and dark midden with medium marine shell content, bone and teeth, food refuse, and stone flakes, is approximately 10 meters (32 feet) south of the project site conveyance system pipeline and the Father Reginald Park/9th Street turn out.

Although no human remains have been identified within the proposed project footprint or within the associated archaeological site CA-SLO-65 as a result of previous or current archaeological investigations, the information within the CCIC record for the site indicates that the likelihood of encountering human remains within the subsurface of the project site is low within the general location of the potential recycled water conveyance system pipeline and low to moderate outside of previously disturbed areas. In the event human remains are inadvertently encountered during construction activities, impacts would be potentially significant. The discovery of human remains would require handling in accordance with PRC Section 5097.98, which states that in the event that human remains are discovered during construction, construction activity shall be halted, and the area shall be protected until consultation and treatment can occur as prescribed by law. As such, with the implementation of MM-CUL-5, which provides direction in the event of discovery of human remains per Section 7050.5 of the California Health and Safety Code, **impacts would be less than significant with mitigation incorporated**.

Mitigation Measures

The potential exists for significant cultural resources impacts. The project would require the implementation of MM-CUL-1 through MM-CUL-5 to reduce such impacts.

MM-CUL-1 **Cultural Resource Monitoring and Inadvertent Discovery Plan.** Impacts to cultural resources should be minimized through implementation of pre- and post- construction tasks. Tasks pertaining to cultural resources include the development of a cultural resource inadvertent discovery plan (Plan). The purpose of the Plan is to outline a program of treatment and mitigation in the case of an inadvertent discovery of cultural resources during ground-disturbing phases (including but not limited to preconstruction site mobilization, grubbing, construction ground disturbance,

construction grading, trenching, and landscaping) and to provide for the proper identification, evaluation, treatment, and protection of any cultural resources during the construction of the Project. This Plan should define the process to be followed for the identification and management of cultural resources in the Project area during construction. Existence of and importance of adherence to this Plan should be stated on all construction plans.

MM-CUL-2 **Workers Environmental Awareness Program (WEAP) Training.** All construction personnel and monitors who are not trained archaeologists should be briefed regarding unanticipated discoveries prior to the start of construction activities. A basic presentation shall be prepared and presented by a qualified archaeologist to inform all personnel working on the Project about the archaeological sensitivity of the area. The purpose of the WEAP training is to provide specific details on the kinds of archaeological materials that may be identified during construction of the Project and explain the importance of and legal basis for the protection of significant archaeological resources. Each worker should also learn the proper procedures to follow in the event that cultural resources or human remains are uncovered during ground-disturbing activities. These procedures include work curtailment or redirection, and the immediate contact of the on-call archaeologist and if appropriate, Tribal representative. Necessity of training attendance should be stated on all construction plans.

MM-CUL-3 **Archaeological Construction Monitoring.** In consideration of the general sensitivity of the project site for cultural resources, a qualified archaeologist should be retained to conduct spot monitoring as well as on call response in the case of an inadvertent discovery of archaeological resources. A qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, should oversee and adjust monitoring efforts as needed (increase, decrease, or discontinue spot monitoring frequency) based on the observed potential for construction activities to encounter cultural deposits. The archaeologist should be responsible for maintaining monitoring logs. Following the completion of construction, the qualified archaeologist should provide an archaeological monitoring report to the San Miguel Community Services District and the Central Coast Information Center with the results of the cultural monitoring program.

MM-CUL-4 **Inadvertent Discovery of Archaeological Resources.** In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities for the project, all construction work occurring within 100 feet of the find should immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, can evaluate the significance of the find and determine whether or not additional study is warranted. Depending upon the significance of the find under the California Environmental Quality Act (14 CCR 15064.5[f]; California Public Resources Code, Section 21082), the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under the California Environmental Quality Act, additional work, such as preparation of an archaeological treatment plan, testing, or data recovery, may be warranted. If the discovery is Native American in nature, consultation with and/or monitoring by a Tribal representative may be necessary.

If a discovery consists of possible human remains, the San Luis Obispo County Coroner shall be contacted immediately as well as the San Miguel Community Services District project representative. If the Coroner determines that the remains are Native American, the Coroner shall contact the California Native American Heritage Commission (NAHC), who will provide the name and contact information for the most likely descendant (MLD). Treatment of the discovery shall be decided in consultation with the MLD provided by the NAHC. Additionally, a Tribal representative shall be retained to monitor all further subsurface disturbance in the area of the find. Work in the area may only proceed after the San Miguel Community Services District project representative grants authorization.

MM-CUL-5 **Inadvertent Discovery of Human Remains.** In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the County Coroner shall be immediately notified of the discovery. No further excavation or disturbance of the Project site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County Coroner has determined, within two working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the County Coroner determines that the remains are, or are believed to be, Native American, he or she shall notify the Native American Heritage Commission (NAHC) in Sacramento within 24 hours. In accordance with California Public Resources Code, Section 5097.98, the NAHC must immediately notify those persons it believes to be the most likely descendant from the deceased Native American. The most likely descendant shall complete their inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the property owner, the disposition of the human remains.

3.6 Energy

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. Energy – Would the project:				
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?	☐	☐	☒	☐

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?

Less Than Significant Impact.

Short-Term Construction

CalEEMod Version 2016.3.2 was used to estimate potential project-generated GHG emissions during construction, which were then used to estimate energy consumption. Construction of the project would result in GHG emissions primarily associated with use of off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles. All details for construction criteria air pollutants discussed in Section 3.3, Air Quality, and Appendix F of this Draft MND are also applicable for the estimation of construction-related GHG emissions. The estimated GHGs were back-calculated based on carbon content (i.e., kilograms of carbon dioxide [CO_2] per gallon) in order to estimate fuel usage during project construction. The conversion factor for gasoline is 8.78 kilograms per metric ton CO_2 per gallon, and the conversion factor for diesel is 10.21 kilograms per metric ton CO_2 per gallon (The Climate Registry 2020). Energy use calculations for construction are provided in Appendix F.

Electricity

Temporary electric power for as-necessary lighting and electronic equipment such as computers inside temporary construction trailers would be provided by Pacific Gas and Electric. The electricity used for such activities would be temporary and would be substantially less than that required for project operation and would have a negligible contribution to the project's overall energy consumption.

Natural Gas

Natural gas is not anticipated to be required during construction of the project. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed below under the "petroleum" subsection. Any minor amounts of natural gas that may be consumed as a result of project construction would be substantially less than that required for project operation and would have a negligible contribution to the project's overall energy consumption.

Petroleum

Heavy-duty construction equipment associated with construction activities would rely on diesel fuel, as would haul and vendor trucks involved in delivery of materials to the project site. Construction workers would travel to and from the project site throughout the duration of construction. It is assumed in this analysis that construction workers would travel to and from the site in gasoline-powered vehicles.

Heavy-duty construction equipment of various types would be used during each phase of project construction. Appendix F lists the assumed equipment usage for each phase of construction. The project's construction equipment is estimated to operate a total combined 27,160 hours. The estimated diesel fuel usage from construction equipment is shown in Table 14. Fuel estimates for total worker vehicles, vendors, and haul truck fuel consumption are provided in Table 15.

Table 14. Construction Equipment Diesel Demand

Phase	Pieces of Equipment	Equipment CO_2 (MT)	Kg CO_2/Gallon	Gallons
Site Preparation	15	318.76	10.21	31,220.67
Trenching	4	40.04	10.21	3,921.88
Plant Installation	17	561.47	10.21	54,992.05
Demobilization	0	0.00	10.21	0.00
Pre-Construction Utility Locations and Potholing	0	0.00	10.21	0.00
Excavation of Bore/Receiving Pits	1	1.09	10.21	107.18
Installation of Pipe	1	22.01	10.21	2,155.41
Backfill	2	3.51	10.21	343.37
Installation of Metered Turnouts	1	3.01	10.21	294.75
Pavement Repairs	2	1.77	10.21	172.88
			Total	**93,208.18**

Sources: Pieces of equipment and equipment CO_2 (Appendix F); kg CO_2/Gallon (The Climate Registry 2020).
Notes: CO_2 = carbon dioxide; MT = metric ton; kg = kilogram.

Table 15. Construction Worker, Vendor, and Haul Truck Petroleum Demand

Phase	Trips	Vehicle MT CO_2	Kg CO_2/ Gallon	Gallons
Worker Vehicles (Gasoline)				
Site Preparation	4,400	16.50	8.78	1,879.65
Trenching	660	2.48	8.78	281.95
Plant Installation	5,000	18.75	8.78	2,135.97
Demobilization	100	0.38	8.78	42.72
Pre-Construction Utility Locations and Potholing	56	0.20	8.78	23.03
Excavation of Bore/Receiving Pits	48	0.17	8.78	19.74
Installation of Pipe	318	1.15	8.78	130.75
Backfill	48	0.17	8.78	19.74
Installation of Metered Turnouts	132	0.48	8.78	54.27
Pavement Repairs	36	0.13	8.78	14.81
			Total	**4,602.62**
Vendor Trucks (Diesel)				
Site Preparation	176	3.69	10.21	361.78
Trenching	132	2.77	10.21	271.34
Plant Installation	400	8.40	10.21	822.23
Demobilization	20	0.42	10.21	41.12
Pre-Construction Utility Locations and Potholing	0	0.00	10.21	0.00
Excavation of Bore/Receiving Pits	16	0.33	10.21	32.26
Installation of Pipe	212	4.36	10.21	427.51
Backfill	32	0.66	10.21	64.53
Installation of Metered Turnouts	44	0.91	10.21	88.73
Pavement Repairs	24	0.49	10.21	48.39
			Total	**2,157.90**

Table 15. Construction Worker, Vendor, and Haul Truck Petroleum Demand

Phase	Trips	Vehicle MT CO_2	Kg CO_2/ Gallon	Gallons
Haul Trucks (Diesel)				
Site Preparation	0	0.00	10.21	0.00
Trenching	0	0.00	10.21	0.00
Plant Installation	0	0.00	10.21	0.00
Demobilization	0	0.00	10.21	0.00
Pre-Construction Utility Locations and Potholing	0	0.00	10.21	0.00
Excavation of Bore/Receiving Pits	2	0.08	10.21	7.48
Installation of Pipe	0	0.00	10.21	0.00
Backfill	4	0.15	10.21	14.96
Installation of Metered Turnouts	0	0.00	10.21	0.00
Pavement Repairs	0	0.00	10.21	0.00
			Total	22.44

Sources: Trips and vehicle CO_2 (Appendix F); kg CO_2/Gallon (The Climate Registry 2020).
Notes: MT = metric ton; CO_2 = carbon dioxide; kg = kilogram.

In summary, construction of the project is conservatively anticipated to consume a total of 99,991 gallons of petroleum over a period of approximately 12 months. For disclosure, by comparison, approximately 31.1 billion gallons of petroleum would be consumed in California over the course of the project's construction phase, based on the California daily petroleum consumption estimate of approximately 78.6 million gallons per day (EIA 2020). Overall, because petroleum use during construction would be temporary, and would not be wasteful or inefficient, impacts would be less than significant.

The project will be subject to CARB's In-Use Off-Road Diesel Vehicle Regulation that applies to certain off-road diesel engines, vehicles, or equipment greater than 25 horsepower. The regulation (1) imposes limits on idling, requires a written idling policy, and requires a disclosure when selling vehicles; (2) requires all vehicles to be reported to CARB (using the Diesel Off-Road Online Reporting System) and labeled; (3) restricts the adding of older vehicles into fleets starting on January 1, 2014; and 4) requires fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (i.e., exhaust retrofits). The fleet must either show that its fleet average index was less than or equal to the calculated fleet average target rate, or that the fleet has met the BACT requirements. The project is also located in an urban area and worker, vendor, and haul truck trip lengths would be shorter compared to a suburban project location, resulting in less energy use. Finally, as described in Section 3.3, the project has committed to construction equipment that meets or exceeds the EPA Tier 3 standard as part of the BACT requirement.

Long-Term Operational Impacts

During project operations, activities that would consume energy would include electricity and natural gas use for building operations, natural gas for the emergency generator, electricity for water and wastewater conveyance, electricity for pumps, and petroleum consumption from employees, customers, and delivery vehicle trips. Additional assumptions for these sources are described below and energy use calculations for operations are provided in Appendix F.

Electricity

The operation of the project buildout would require electricity for multiple purposes, including cooling, lighting, appliances, and various equipment. Additionally, the supply, conveyance, treatment, and distribution of water would indirectly result in electricity usage. Electricity consumption associated with project operation is based on the CalEEMod outputs presented in Appendix F.

CalEEMod default values for energy consumption for each land use were applied for the project analysis. The energy use from non-residential land uses is calculated in CalEEMod based on the California Commercial End-Use Survey database. Energy use in buildings (both natural gas and electricity) is divided by the program into end use categories subject to California Code of Regulations Title 24 requirements (end uses associated with the building envelope, such as the heating, ventilation, and air conditioning system; water heating system; and integrated lighting) and those not subject to Title 24 requirements (such as appliances, electronics, and miscellaneous "plug-in" uses).

Title 24 of the California Code of Regulations serves to enhance and regulate California's building standards. The most recent amendments to Title 24, Part 6, referred to as the 2019 standards, became effective on January 1, 2020. According to these estimations, the project would consume approximately 463,645 kilowatt-hours (kWh) per year during operation (Appendix F). The project would consume approximately 12,805 kWh per year from water and wastewater sources, resulting in a total use of 476,450 kWh per year. The non-residential electricity demand in 2019 was 1,060,088,072 kWh (1,060 gigawatt-hours) for San Luis Obispo County (CEC 2021a). As such, the project would have a negligible impact on demand for the County and Pacific Gas and Electric.

Natural Gas

The operation would require natural gas for various purposes, including water heating and natural gas appliances and the emergency generator. Natural gas consumption associated with operation is based on the CalEEMod outputs in Appendix F.

CalEEMod default values for energy consumption for each land use were applied for the project analysis. According to these estimations, the project would consume approximately 376,220 kilo-British thermal units (kBtu) per year. The emergency generator would consume approximately 240,264 kBtu per year, resulting in a total use of 616,484 kBtu per year. The non-residential natural gas consumption in 2019 was 5,098,918,000 kBtu for San Luis Obispo County (CEC 2021b).

Petroleum

During operations, the majority of fuel consumption resulting from the project would involve the use of motor vehicles traveling to and from the project site, off-road equipment (yard trucks), and emergency generator testing.

Petroleum fuel consumption associated with motor vehicles traveling to and from the project site is a function of the vehicle miles traveled (VMT) as a result of project operation. As shown in Appendix F and as discussed in Section 3.3 and Section 3.8, Greenhouse Gas Emissions, the annual new VMT attributable to the project is expected to be 16,235 VMT. Similar to the construction worker and vendor trips, fuel

consumption from worker and truck trips is estimated by converting the total CO_2 emissions from operation of the project to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. Mobile source emissions were estimated using the CalEEMod.

Calculations for annual mobile source fuel consumption are provided in Table 16.

Table 16. Annual Mobile Source Petroleum Demand

Fuel	Vehicle MT CO_2	kg/CO_2/Gallon	Gallons
Gasoline	5.29	8.78	602.29
Diesel	0.43	10.21	42.11
		Total	**644.39**

Sources: Trips and vehicle CO_2 (Appendix F); kg/CO_2/Gallon (The Climate Registry 2020).
Notes: MT = metric ton; CO_2 = carbon dioxide; kg = kilogram

Annual mobile source petroleum demand for the project is anticipated to be approximately 644 gallons per year. By comparison, California as a whole consumes approximately 28.6 billion gallons of petroleum per year (EIA 2017). Countywide total petroleum use by vehicles is expected to be 158 million gallons per year by 2023 (CARB 2021).

Summary

Statewide emission reduction measures proposed in the CARB-adopted amendments to the Pavley regulations include measures aimed at reducing GHG emissions associated with transportation. These amendments are part of California's commitment to a nationwide program to reduce new passenger vehicle GHGs from 2012 through 2016. Pavley regulations reduced GHG emissions from California passenger vehicles by about 22% in 2012 and by about 30% in 2016, all the while improving fuel efficiency and reducing motorists' costs. As such, vehicle trips associated with the project are expected to use less petroleum due to advances in fuel economy over time.

CARB has adopted a new approach to passenger vehicles—cars and light trucks—by combining the control of smog-causing pollutants and GHG emissions into a single coordinated package of standards. The new approach also includes efforts to support and accelerate the numbers of plug-in hybrids and zero-emission vehicles in California (CARB 2017).

The project would create additional electricity and natural gas demand by adding recreational and commercial facilities. New facilities associated with the project would be subject to the State Building Energy Efficiency Standards, embodied in Title 24 of the California Code of Regulations. The efficiency standards apply to new construction of nonresidential buildings and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting.

In summary, although natural gas and electricity usage would increase due to the implementation of the project, the project's energy efficiency would go beyond code compliance. Although the project would see an increase in petroleum use during construction and operation, vehicles would use less petroleum due to advances in fuel economy and potential reduction in VMT over time. Therefore, impacts to energy resources during operation would be **less than significant.**

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

Less Than Significant Impact. The project would be subject to and would comply with, at a minimum, the 2019 California Building Code (CBC) (24 CCR Part 6). The project would not conflict with existing energy standards and regulations. The electricity and natural gas used for construction of the project would be temporary and would be substantially less than that required for project operation and would have a negligible contribution to the project's overall energy consumption.

Construction

The electricity and natural gas used for construction of the project would be temporary and would be substantially less than that required for project operation and would have a negligible contribution to the project's overall energy consumption. Construction is anticipated to consume 4,603 gallons of gasoline and 95,389 gallons of diesel. This would be a fraction of the petroleum that would be consumed in California and countywide over the course of the construction period. Therefore, construction would have a **less than significant impact** with regards to regional energy supplies.

Operation

As discussed under the previous thresholds, the project would result in an increased demand for electricity, natural gas, and petroleum. Design features would reduce the project's energy consumption by what is required by the 2019 CBC standards. The efficiency standards apply to new construction of both residential and nonresidential buildings and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting.

In addition, Pavley regulations reduced GHG emissions from California passenger vehicles by about 22% in 2012 and by about 30% in 2016, all while improving fuel efficiency. By 2025, when the Advanced Clean Cars rules are fully implemented, one in seven new cars sold in California (1.4 million) will be non-polluting or nearly so, including plug-in hybrids, fully electric battery-powered cars, and hydrogen-powered fuel cell vehicles (CARB 2012). Meanwhile, gasoline- and diesel-powered passenger vehicles would grow ever cleaner and more efficient. A variety of new technologies, from direct fuel injection to lower rolling resistance tires, will also cut pollution and create more energy-efficient vehicles (CARB 2012). As such, petroleum usage associated with operation of the project is anticipated to decrease over time due to a reduction in VMT in the region and advances in fuel economy. Therefore, impacts related to regional energy supplies and capacity during project operation would be **less than significant**.

3.7 Geology and Soils

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS – Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

Environmental Setting

Geology

The project area is underlain by floodplain and river channel deposits consisting of interbedded sand, gravel, silt, and clay sediments, which are no more than 50 feet to 100 feet thick. These sediments are in turn underlain by the Paso Robles Formation, which is approximately 700 feet to 2,000 feet thick. The Paso Robles Formation is a Plio-Pleistocene, predominantly non-marine geologic unit comprising relatively thin, often discontinuous sand and gravel layers interbedded with thicker layers of silt and clay. The formation was deposited in alluvial fan, flood plain, and lake depositional environments. The formation is typically unconsolidated and generally poorly sorted (i.e., mixed sediment sizes). The sand and gravel beds in the Paso Robles Formation have a high percentage of Monterey shale gravel and have lower permeability compared to the overlying alluvial unit. The formation also contains minor amounts of gypsum and woody coal (City of Paso Robles 2011; Paso Robles Subbasin Groundwater Sustainability Agencies 2020; Appendix A).

There are three known active to potentially active faults in proximity to the WWTF site. The potentially active Rinconada Fault is situated approximately 5 miles southwest of San Miguel and is classified as Quaternary (age undifferentiated). The active San Andreas Fault is approximately 25 miles northeast of the District and is classified as Historic (displacement has occurred in the last 200 years). The active Hosgri-San Simeon Fault is approximately 25 miles southwest of the District and is classified as Holocene-active (displacement during past 11,700 years) (CDOC 2010).

Soil

Surficial soil types within the project area include Hanford and Greenfield soils, on 0% to 2% slopes; Hanford and Greenfield soils, on 2% to 9% slopes; and Metz loamy sand, on 0% to 5% slopes. The primary soil type within the Salinas River area is Corducci-Typic Xerofluvents, on 0% to 5% slopes and occasionally flooded (Appendix A).

Impact Analysis

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

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

WWTF

No Impact. The Alquist-Priolo Earthquake Fault Zoning Act, PRC Sections 2621 et seq., regulates development near active faults to reduce hazards associated with surface fault rupture. The act prohibits most structures for human occupancy from being built across the trace of active faults and establishes special study zones called Alquist-Priolo Zones, which extend 500 feet from faults. These zones are delineated and defined by the State Geologist and identify areas where potential surface rupture along a fault could prove hazardous. No Alquist-Priolo Earthquake Fault Zones lie within District limits. The closest such zones are associated with the San Andreas and Hosgri-San Simeon Fault Zones, located approximately 25 miles northeast and southwest of the project area, respectively (CGS 2021). Therefore, **no impacts** associated with known earthquake faults would occur.

Optional Solar Component

No Impact. As discussed above, no Alquist-Priolo Earthquake Fault Zones lie within District limits. Therefore, **no impacts** associated with known earthquake faults would occur.

Reclaimed Water System

No Impact. The pipeline would be installed within the existing paved streets and run southward from 20th Street approximately 1.5 miles to the junction of Mission Street and Monterey Road, at the Mission San Miguel/Rios Caledonia turnout on the southern end of San Miguel. As discussed above, no Alquist-Priolo Earthquake Fault Zones lie within District limits. Therefore, **no impacts** associated with known earthquake faults would occur (CGS 2021).

ii) Strong seismic ground shaking?

WWTF

Less Than Significant Impact. The project area is located within an area that could be subject to seismic ground shaking from regional faulting, including the San Andreas and Hosgri-San Simeon Fault Zones. These faults are capable of generating future earthquakes that could result in moderate to strong ground shaking in the project area. Proposed WWTF upgrades would not increase or exacerbate the potential for earthquakes to occur and therefore would not directly or indirectly cause potential substantial adverse effects involving seismically induced ground shaking. In addition, the project would be constructed in compliance with provisions of the CBC, which require completion of a site-specific geotechnical to ascertain the potential for ground shaking and provide recommendations for construction to withstand anticipated ground shaking. As a result, impacts associated with seismically induced ground shaking would be **less than significant**.

Optional Solar Component

Less Than Significant Impact. As discussed above, construction of the proposed solar array would not increase or exacerbate the potential for earthquakes to occur and therefore would not directly or indirectly cause potential substantial adverse effects involving seismically induced ground shaking. In addition, the project would be constructed in compliance with provisions of the CBC, which require completion of a site-specific geotechnical to ascertain the potential for ground shaking and provide recommendations for construction to withstand anticipated ground shaking. As a result, impacts associated with seismically induced ground shaking would be **less than significant**.

Reclaimed Water System

Less Than Significant Impact. As discussed above, the proposed water pipeline would not increase or exacerbate the potential for earthquakes to occur and therefore would not directly or indirectly cause potential substantial adverse effects involving seismically induced ground shaking. In addition, the project would be constructed in compliance with provisions of the CBC, which require completion of a site-specific geotechnical to ascertain the potential for ground shaking and provide recommendations for construction to withstand anticipated ground shaking. As a result, impacts associated with seismically induced ground shaking would be **less than significant**.

iii) Seismic-related ground failure, including liquefaction?

WWTF

Less Than Significant Impact. Liquefaction is a phenomenon in which the strength and stiffness of a soil is reduced by earthquake shaking. Soils transform from a solid to a liquid state as a result of rapid loss of sheer strength and increased pore water pressure induced by earthquake vibrations. The project site is underlain by unconsolidated sand and gravel layers, interbedded with thicker layers of silt and clay, of the Paso Robles Formation. This area has a moderate to high liquefaction potential (County of San Luis Obispo 2021).

The proposed WWTF improvements would be constructed to current CBC codes and in compliance with recommendations of a site-specific geotechnical investigation. Impacts resulting from ground shaking and liquefaction hazards would be mitigated to less than significant through compliance with existing codes, including engineered site preparation and adequate structural design. Any proposed construction would require the adoption of appropriate engineering design in conformance with geotechnical standards for construction. In addition, construction of the proposed WWTF improvements would not increase or exacerbate the potential for liquefaction to occur and therefore would not directly or indirectly cause potential substantial adverse effects involving liquefaction. Therefore, impacts associated with liquefaction would be **less than significant.**

Optional Solar Component

Less Than Significant Impact. As discussed above, the proposed solar component would be designed in accordance with the seismic parameters of the CBC and other regulatory requirements, which would minimize potential effects of seismic-related ground failure, including liquefaction. In addition, construction of the solar component would not increase or exacerbate the potential for liquefaction to occur and therefore would not directly or indirectly cause potential substantial adverse effects involving liquefaction. Therefore, impacts associated with liquefaction would be **less than significant**.

Reclaimed Water System

Less Than Significant Impact. As discussed above, the proposed water pipeline would be designed in accordance with the seismic parameters of the CBC and other regulatory requirement, which would minimize potential effects of seismic-related ground failure, including liquefaction. In addition, construction of the pipeline would not increase or exacerbate the potential for liquefaction to occur and therefore would not directly or indirectly cause potential substantial adverse effects involving liquefaction. Therefore, impacts associated with liquefaction would be **less than significant.**

iv) Landslides?

WWTF

Less Than Significant Impact. Slope instability may result from natural processes, such as the erosion of the toe of a slope by a stream or by ground shaking caused by an earthquake. Slopes can also be modified artificially by grading or by the addition of water or structures to a slope. Areas that are generally prone to landslide hazards include previous landslide locations, the bases of steep slopes, the bases of drainage

channels, and developed hillsides where leach-field septic systems are used. The project site is located on relatively flat-lying ground, within an area of low landslide hazard potential (County of San Luis Obispo 2021). Any cut and/or fill slopes constructed in association with grading for WWTF improvements would be completed in compliance with the CBC and a site-specific geotechnical investigation, such that slope failure would be prevented during construction and operations. As a result, impacts associated with landslides would be **less than significant**.

Optional Solar Component

Less Than Significant Impact. As discussed above, the proposed solar array site is located within an area of low landslide hazard potential. This proposed project component would be designed and built in accordance with the most recent CBC and a site-specific geotechnical investigation, such that slope failure would be prevented during construction and operations. As a result, impacts associated with landslides would be **less than significant**.

Reclaimed Water System

Less Than Significant Impact. As discussed above, the proposed water pipeline is located within an area of low landslide hazard potential. This proposed project component would be designed and built in accordance with the most recent CBC and a site-specific geotechnical investigation, such that slope failure would be prevented during construction and operations. As a result, impacts associated with landslides would be **less than significant**.

b) Would the project result in substantial soil erosion or the loss of topsoil?

WWTF, Optional Solar Component, and Reclaimed Water System

Less Than Significant Impact. On-site soils are moderately erodible (NRCS 2019). Soil erosion or loss of topsoil typically occurs when ground disturbance causes soils to be exposed and the soils are washed away during a storm or wind event. Surface structures, such as paved roads and buildings, decrease the potential for erosion. Once covered, soil is no longer exposed to wind or water erosion. Grading and construction for the proposed project would cause ground disturbance, which could result in temporary erosion, particularly during a rain or wind event. As detailed in Section 2.5.5, erosion and sediment control would be conducted in accordance with industry BMPs and a SWPPP that would be filed with the RWQCB. SWPPPs are required for projects with ground disturbance of more than 1 acre, in compliance with the National Pollutant Discharge Elimination System Construction General Permit. The SWPPP must include erosion control measures such as covering exposed soil stockpiles and working slopes, lining the perimeter of the construction site with sediment barriers, and protecting storm drain inlets. Preparation and implementation of the required SWPPP would reduce construction-related erosion to the extent practicable. As a result, erosion-related impacts would be **less than significant**.

c) Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

WWTF, Optional Solar Component, and Reclaimed Water System

Less Than Significant Impact. As previously discussed, the proposed project improvements would be constructed to current CBC codes and in compliance with recommendations of a site-specific geotechnical investigation, which would address potentially unstable ground, including landslides, lateral spreading, subsidence, liquefaction, and collapse. Any proposed construction would require the adoption of appropriate engineering design in conformance with geotechnical standards for construction. In addition, construction of the proposed project improvements would not increase or exacerbate the potential for these geologic hazards to occur. Therefore, impacts associated with potentially unstable geologic units or soil would be **less than significant.**

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

WWTF, Optional Solar Component, and Reclaimed Water System

Less Than Significant Impact. Expansive soils are characterized by the ability to undergo significant volume change (shrink and swell) as a result of variation in soil moisture content. Soil moisture content can change due to many factors, including perched groundwater, landscape irrigation, rainfall, and utility leakage. Expansive soils are commonly very fine-grained with a high to very high percentage of clay. As previously discussed, compliance with CBC codes and recommendations of a site-specific geotechnical investigation would address potentially expansive soils such that substantial direct or indirect risks to life or property would not occur. As a result, impacts associated with expansive soils would be **less than significant.**

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

WWTF, Optional Solar Component, and Reclaimed Water System

No Impact. The proposed project would not involve new septic tanks or alternative wastewater disposal systems. Therefore, **no impacts** would occur.

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

Less Than Significant Impact With Mitigation Incorporated. The proposed project is mapped as being underlain by Holocene (less than approximately 11,700 years old) surficial Quaternary alluvium (map unit Qa), according to published geological mapping at a 1:24,000 scale (Dibblee and Minch 2006; Cohen et al. 2020). Pleistocene (approximately 2.58 million to 11,700 years old) alluvial deposits (map unit Qoa) are mapped at the surface west of the project area (Dibblee and Minch 2006; Cohen et al. 2020). The younger alluvial deposits have a low paleontological resource sensitivity at the surface and at shallow depths (at least below 5 feet); however, older, Pleistocene or "Ice Age" alluvial deposits, as well as Pliocene (approximately 5.33 to 2.58 million years old) and Pleistocene age Paso Robles Formation, which is

mapped in the higher elevations nearby, have produced scientifically significant vertebrates in the region and have a high paleontological sensitivity (Jefferson 1991; Dibblee and Minch 2006; Cohen et al. 2020). A paleontological records search request was sent to the Natural History Museum of Los Angeles County on February 3, 2021 (LACM 2021).

In the event that intact paleontological resources are located on the project site, ground-disturbing activities below 5 feet associated with construction of the proposed project, such as trenching for pipelines or utilities into previously undisturbed Pleistocene age older alluvium or Paso Robles Formation, have the potential to destroy a unique paleontological resource or site. Without mitigation, the potential damage to paleontological resources during construction would be a potentially significant impact. However, upon implementation of MM-CUL-3 and MM-GEO-1, impacts would be reduced to below a level of significance. Impacts of the proposed project are considered **less than significant with mitigation incorporated** during construction.

Mitigation Measure

MM-GEO-1 **Paleontological Resource Construction Monitoring.** Excavations that will exceed 5 feet in depth in areas shown in Figure 8, Paleontological Sensitivity Map, in Monsoon Consultants 2019 report shall be monitored by a qualified paleontological monitor. The frequency of monitoring shall be determined by the paleontologist. If no fossils are observed during the first 50% of excavations that exceed 3 feet in depth, or if the paleontologists can determine that excavations are not disturbing Pleistocene or Pliocene aged sediments, then the frequency of monitoring may be at the discretion of the paleontologist.

Fossil Salvage. If fossils are discovered, then work shall be stopped to allow a qualified paleontologist to recover the fossils. Once salvaged, fossils shall be identified to the lowest possible taxonomic level, prepared to a curation-ready condition, and curated in a scientific institution with a permanent paleontological collection, along with all pertinent field notes, photos, data, and maps.

3.8 Greenhouse Gas Emissions

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

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

Less Than Significant Impact. Climate change refers to any significant change in measures of climate (e.g., temperature, precipitation, or wind patterns) lasting for an extended period of time (i.e., decades or longer). Earth's temperature depends on the balance between energy entering and leaving the planet's system, and many factors (natural and human) can cause changes in Earth's energy balance. The greenhouse effect is the trapping and buildup of heat in the atmosphere near Earth's surface (the troposphere). The greenhouse effect is a natural process that contributes to regulating Earth's temperature, and it creates a livable environment on Earth. Human activities that emit additional GHGs to the atmosphere increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing Earth's surface temperature to rise. Global climate change is a cumulative impact; a project contributes to this impact through its incremental contribution combined with the cumulative increase of all other sources of GHGs. Thus, GHG impacts are recognized exclusively as cumulative impacts (CAPCOA 2008).

A GHG is any gas that absorbs infrared radiation in the atmosphere; in other words, GHGs trap heat in the atmosphere. As defined in California Health and Safety Code Section 38505(g) for purposes of administering many of the state's primary GHG emissions reduction programs, GHGs include CO_2, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride (see also 14 CCR 15364.5)[2] The three GHGs evaluated herein are CO_2, methane, and nitrous oxide. Emissions of hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride are generally associated with industrial activities including the manufacturing of electrical components, heavy-duty air conditioning units, and insulation of electrical transmission equipment (substations, power lines, and switch gears).

Therefore, emissions of these GHGs were not evaluated or estimated in this analysis because the project would not include these activities or components and would not generate hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride in measurable quantities.

The Intergovernmental Panel on Climate Change developed the global warming potential (GWP) concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The reference gas used is CO_2; therefore, GWP-weighted emissions are measured in metric tons (MT) of CO_2 equivalent (CO_2e). Consistent with CalEEMod version 2016.3.2, this GHG emissions analysis assumed the GWP for methane is 25 (i.e., emissions of 1 MT of methane are equivalent to emissions of 25 MT of CO_2), and the GWP for nitrous oxide is 298, based on the Intergovernmental Panel on Climate Change's Fourth Assessment Report (IPCC 2007).

The emissions presented within this assessment are compared to the SLOAPCD construction and operational thresholds from the SLOAPCD's CEQA Air Quality Handbook (SLOAPCD 2012). The SLOAPCD has adopted emissions-based thresholds to address the significance of GHG impacts resulting from a

[2] Climate-forcing substances include GHGs and other substances such as black carbon and aerosols. This discussion focuses on the seven GHGs identified in California Health and Safety Code Section 38505; impacts associated with other climate-forcing substances are not evaluated herein.

project, which are discussed below. The thresholds of significance for a project's amortized construction plus operational-related GHG emissions are as follows:

- For land use development projects, the threshold is compliance with a qualified GHG Reduction Strategy (see Section 3.3); OR annual emissions less than 1,150 MT/year of CO_2e; or 4.9 MT CO_2e/service population (SP)/year (residents + employees). Land use development projects include residential, commercial and public land uses and facilities. Lead agencies may use any of the three options above to determine the significance of a project's GHG emission impact to a level of certainty.
- For stationary-source projects, the threshold is 10,000 MT/year of CO_2e. Stationary-source projects include land uses that would accommodate processes and equipment that emit GHG emissions and would require an APCD permit to operate.

As the project is an industrial development it will be compared to the bright-line threshold of 1,150 MT CO_2e per year. In accordance with the SLOAPCD Handbook, the construction GHG emissions will be amortized over 25 years and added to the operational GHG emissions to compare to the threshold.

Construction Emissions

CalEEMod was used to calculate the annual GHG emissions based on the construction scenario described in Section 3.3. Construction of the proposed project is anticipated to commence in January 2022 and would last through June 2023 (approximately 18 months). On-site sources of GHG emissions include off-road equipment; off-site sources include haul trucks, vendor trucks, and worker vehicles. Table 17 presents construction GHG emissions for the proposed project from on-site and off-site emission sources.

Table 17. Estimated Annual Construction GHG Emissions

Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
2022	973.66	0.25	0.00	979.90
2023	40.67	0.01	0.00	40.91
			Total	**1,020.81**
			Amortized Emissions (over 25 years)	*40.83*

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.
See Appendix F for complete results.

As shown in Table 17, the estimated total GHG emissions during construction of the proposed project would be approximately 1,021 MT CO_2e. Estimated project-generated construction emissions amortized over 25 years would be approximately 41 MT CO_2e per year. As with project-generated construction air quality pollutant emissions, GHG emissions generated during the construction of the proposed project would be short term in nature, lasting only the duration of the construction period, and would not represent a long-term source of GHG emissions.

Operational Emissions

Emissions from the operational phase of the project were estimated using CalEEMod Version 2016.3.2. Operational year 2023 was assumed consistent with completion of project construction. Potential project-

generated operational GHG emissions were estimated for area sources (landscape maintenance) and emergency generators. Emissions from each category are discussed in the following text with respect to the project. For additional details, see Section 3.3 for a discussion of operational emission calculation methodology and assumptions, specifically for area, energy (natural gas), and mobile sources.

Area Sources

CalEEMod was used to estimate GHG emissions from the project's area sources, which include operation of gasoline-powered landscape maintenance equipment, which produce minimal GHG emissions. See Section 3.3 for a discussion of landscaping equipment emissions calculations. Consumer product use and architectural coatings result in VOC emissions, which are analyzed in air quality analysis only, and little to no GHG emissions.

Energy

In addition to the energy source emissions (natural gas use) discussed in Section 3.3, the project would result in an increase in energy use associated with the additional pumps as shown in Table 1. The additional electric pumps would result in the annual consumption of 272,290 kWh per year, which would result in indirect GHG emissions.

Mobile Sources

As discussed in Section 3.3, the project would add two employees during operation. All other mobile source assumptions included in Section 3.3 apply herein.

Stationary Source

The project would include the addition of a 500-horsepower natural gas fired backup generator. The generator was assumed to operate up to 1 hour per day and 100 hours per year for maintenance and testing in accordance with SLOAPCD Rule 431. CalEEMod default emission factors for natural-gas engines were assumed.

Solid Waste

The project would generate solid waste, and therefore, result in CO_2e emissions associated with landfill off-gassing. CalEEMod default values for solid waste generation were used to estimate GHG emissions associated with solid waste for the project.

Water and Wastewater Treatment

Supply, conveyance, treatment, and distribution of water for the project would require the use of electricity, which would result in associated indirect GHG emissions. Similarly, wastewater generated by the project would require the use of electricity for conveyance and treatment, and GHG emissions would be generated during wastewater treatment. The indoor and outdoor water use and electricity consumption from water use and wastewater generation were estimated using CalEEMod default values for the project. The estimated operational project-generated GHG emissions are shown in Table 18.

Table 18. Estimated Annual Operational GHG Emissions - Unmitigated

Emission Source	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
Area	0.00	0.00	0.00	0.00
Energy	63.40	0.01	0.00	64.05
Mobile	5.72	0.00	0.00	5.72
Stationary	12.75	0.03	0.00	13.41
Waste	3.56	0.21	0.00	8.82
Water	0.81	0.03	0.00	1.84
			Total	**93.85**
			Amortized construction emissions	*40.83*
			Total operational + amortized construction GHGs	**134.68**

Notes: GHG = greenhouse gas; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.
See Appendix F for complete results.
Totals may not sum due to rounding.

As shown in Table 18, estimated annual project-generated GHG emissions would be approximately 94 MT CO_2e per year as a result of project operations only. After accounting for amortized project construction emissions, total GHGs generated by the project would be approximately 135 MT CO_2e per year. As such, annual operational GHG emissions with amortized construction emissions would not exceed the SLOAPCD threshold of 1,150 MT CO_2e per year. Therefore, impacts would be **less than significant**.

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

Less Than Significant Impact. Although there are no mandatory GHG plans, policies, or regulations or finalized agency guidelines that would apply to implementation of the proposed project, a description of relevant plans with GHG reduction strategies is provided below.

California's 2017 Climate Change Scoping Plan, approved by CARB in 2008 and updated in 2014 and 2017, provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. The scoping plan is not directly applicable to specific projects, and it is not intended to be used for project-level evaluations.[3] Under the scoping plan, however, there are several state regulatory measures aimed at identifying and reducing GHG emissions. CARB and other state agencies have adopted many of the measures identified in the scoping plan. Most of these measures focus on area-source emissions (e.g., energy usage and high-GWP GHGs in consumer products) and changes to the vehicle fleet (e.g., hybrid, electric, and more-fuel-efficient vehicles) and associated fuels, among others.

The San Luis Obispo Council of Governments' 2019 RTP/SCS is a regional growth-management strategy that targets per-capita GHG reduction from passenger vehicles and light-duty trucks in San Luis Obispo

[3] The Final Statement of Reasons for the amendments to the CEQA Guidelines reiterates the statement in the Initial Statement of Reasons that "the Scoping Plan may not be appropriate for use in determining the significance of individual projects because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan" (CNRA 2009).

County (SLOCOG 2019). The 2019 RTP/SCS incorporates local land use projections and circulation networks in city and county general plans. The 2019 RTP/SCS is not directly applicable to the proposed project because the purpose of the 2019 RTP/SCS is to provide direction and guidance by making the best transportation and land use choices for future development. However, the development of a recycled water pipeline and WWTF upgrades under the project would not conflict with implementation of the strategies identified in the 2019 RTP/SCS that would reduce GHG emissions.

Regarding consistency with Senate Bill (SB) 32 (goal of reducing GHG emissions to 40% below 1990 levels by 2030) and Executive Order S-3-05 (goal of reducing GHG emissions to 80% below 1990 levels by 2050), there are no established protocols or thresholds of significance for that future-year analysis. However, CARB has expressed optimism with regard to both the 2030 and 2050 goals. It states in the First Update to the Climate Change Scoping Plan: Building on the Framework that "California is on track to meet the near-term 2020 GHG emissions limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB [Assembly Bill] 32" (CARB 2014). Regarding the 2050 target for reducing GHG emissions to 80% below 1990 levels, CARB (2014) states the following:

> This level of reduction is achievable in California. In fact, if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under Assembly Bill 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80% below 1990 levels by 2050. Additional measures, including locally driven measures and those necessary to meet federal air quality standards in 2032, could lead to even greater emission reductions.

In other words, CARB believes that the state is on a trajectory to meet the 2030 and 2050 GHG reduction targets set forth in AB 32, SB 32, and Executive Order S-3-05. This is confirmed in the 2017 Climate Change Scoping Plan Update, which states (CARB 2017):

> The Proposed Plan builds upon the successful framework established by the Initial Scoping Plan and First Update, while also identifying new, technologically feasible and cost-effective strategies to ensure that California meets its GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities. The Proposed Plan is developed to be consistent with requirements set forth in AB 32, SB 32, and AB 197.

The proposed project would not interfere with implementation of GHG reduction goals for 2030 or 2050 because it would result in a minimal increase in local GHG emissions from pump station electricity when compared to baseline conditions (because the existing lift station is not currently operating). In addition, the proposed project would not conflict with the state's trajectory toward future GHG reductions. As mentioned previously, from an energy perspective, the ability to utilize local sources of water reduces use and future dependency on imported water supplies, the conveyance of which is one of the largest consumers of energy in California. Based on the preceding considerations, the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs; therefore, the impact would be **less than significant**.

3.9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HAZARDS AND HAZARDOUS MATERIALS – Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☒	☐	☐
d) Be located on a site that 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?	☐	☒	☐	☐

Environmental Setting

The project site is located in an urbanized area primarily designated as a Non-Very High Fire Hazard Severity Zone (Non-VHFHSZ). The areas directly north and east of the project site, as well as areas west of U.S. Highway 101 (approximately 0.25 miles away), are characterized as High Fire Hazard Severity Zones (CAL FIRE 2007, 2009). The WWTF site has not been listed by EPA as a hazardous material site (EPA 2019a). There are no sites in the treatment

plant study area listed on the Cortese List (California Department of Toxic Substances Control Hazardous Waste and Substances Site List – Site Cleanup; accessed May 2019). According to the State Water Resources Control Board's Geotracker database, there are no leaking underground storage tanks in the project area (SWRCB 2019).

Materials and waste may be considered hazardous if they are poisonous (toxicity), can be ignited by open flame (ignitability), corrode other materials (corrosivity), or react violently, explode, or generate vapors when mixed with water (reactivity). Hazardous material is defined in law as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment.

State Regulations

EPA has granted the State of California primary oversight responsibility to administer and enforce hazardous waste management to ensure that hazardous wastes are handled, stored, and disposed of properly to reduce risks to human health and the environment.

Hazardous Materials Release Response Plans and Inventory Act of 1985

The Hazardous Materials Release Response Plans and Inventory Act, also known as the Business Plan Act, requires businesses using hazardous materials to prepare a report that describes their facilities, inventories, emergency response plans, and training programs. Hazardous materials are defined as raw or unused materials that are part of a process or manufacturing step. They are not considered to be hazardous waste. Health concerns pertaining to the release of hazardous materials, however, are similar to those relating to hazardous waste.

Other Laws, Regulations, and Programs

Various other state regulations have been enacted that affect hazardous waste management, including the following:

- Safe Drinking Water and Toxic enforcement Act of 1986 (Proposition 65), which requires labeling of substances known or suspected by the state to cause cancer
- California Government Code Section 65962.5, which requires the Office of Permit Assistance to compile a list of possible contaminated sites in the state
- The California Division of Occupational Safety and Health, which requires construction projects to implement safe hazardous material handling, transfer, storage, and maintenance
- State and federal regulations also require that hazardous materials sites be identified and listed in public records. These lists are:
    - Comprehensive Environmental Response, Compensation, and Liability Information System
    - National Priorities List for Uncontrolled Hazardous Waste Sites
- Resource Conservation and Recovery Act
- California Superfund List of Active Annual Work Plan Sites
- Lists of state-registered underground and leaking underground storage tanks

San Luis Obispo County Regulations

The San Luis Obispo County Environmental Health Department has been appointed as the administering agency for the regulation of hazardous waste. Prior to initiation of construction activities, a business or entity is required to submit a Hazardous Materials Business Plan if the entity handles or stores hazardous materials/wastes at or above the following threshold quantities pursuant to California Health and Safety Code Sections 25503 and 25505 (County of San Luis Obispo EHS 2020):

- 55 gallons of liquid
- 200 cubic feet of gas
- 500 pounds of solid
- Radioactive materials (where an emergency plan is required by law)
- Extremely hazardous substances (at or above the threshold planning quantities)

A Hazardous Materials Business Plan is a series of documents with detailed information about a facility that handles or stores hazardous materials/hazardous waste above specific threshold quantities, and about each specific hazardous material at that facility. It assists emergency responders in identifying hazardous materials and their storage locations in the event of an emergency (County of San Luis Obispo EHS 2020).

San Luis Obispo County General Plan Safety Element

The Safety Element of the San Luis Obispo General Plan addresses a wide range of issues related to human safety and hazards, including hazardous wastes and materials and emergency preparedness. The overall intent of the element is to protect persons and their property by identifying potential hazards within the community, minimizing these potential risks whenever possible, and providing for appropriate and timely response in cases of catastrophic events. The following policies, standards, and programs from the Safety Element may apply to the proposed project:

Policy S-13 – Pre-Fire Management: New development in fire hazard areas should be configured to minimize the potential for added danger with the implementation of the following measures:

- Standard S-29: Identify high value and high-risk areas, including urban/wildland interface areas, and develop and implement mitigation efforts to reduce the threat of fire.
- Standard S-30: Site homes near one another to the extent practicable to reduce the need for multiple response teams during fires. Require that the subdivision design be reviewed by fire safety personnel. Require the clustering of lots of buildings in high and very high fire hazard areas as appropriate. New developments in high and very high fire hazard areas should maintain open areas large enough to allow for control burns and other vegetation management programs.
- Standard S-32: Require fire resistant material to be used for building construction in fire hazard areas.
- Program S-33: Work with homeowners to improve fire safety and defensibility on developed parcels. Defensible space should be required around all structures in high and very high fire hazard areas.

San Miguel Community Plan

According to the San Miguel Community Plan, for projects within 135 feet of the railroad, a Phase II environmental site assessment is required (County of San Luis Obispo 2016b). The purpose of a Phase II environmental site

assessment is to determine the presence or absence of petroleum products or hazardous waste in the subsurface of the site. Because the distance between the project site and the railroad is greater than 135 feet, a Phase II environmental site assessment is not expected to be required.

Environmental Thresholds

Appendix G of the CEQA Guidelines indicates that a project would have a significant impact due to hazards or hazardous materials if it would create a public health hazard, expose people to a potential health hazard, or pose a threat to the environment through the use, production, or disposal of materials which pose a hazard. The County's safety thresholds address involuntary public exposure from facilities or activities involving significant quantities of hazardous materials (e.g., oil wells, pipelines, rocket propellants, chlorine, etc.).

Impact Analysis

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

WWTF

Construction Impacts

Less Than Significant Impact. Heavy equipment related to trenching, grading, and construction of the proposed project would require the use of fuel and petroleum-based lubricants and would require regular maintenance of equipment. Both the frequency of maintenance and the large volumes of fluids required to service the equipment increase the risk of accidental spillage. However, as discussed in Section 3.7, Geology and Soils, statutorily required standard measures, including the preparation and implementation of a SWPPP that meets the requirements of the Statewide General Construction Permit, will ensure that potential impacts from accidental leaks or spills are less than significant.

A variety of hazardous substances and wastes would be stored, used, and generated during construction of the proposed project. These would include fuels for machinery and vehicles, new and used motor oils, cleaning solvents, paints, and storage containers and applicators containing such materials. All chemicals that would be used during construction of the proposed project would be required to be managed in accordance with the California Hazardous Waste Control Law (California Health and Safety Code, Division 20, Chapter 6.5) and the Hazardous Waste Control Regulations (22 CCR Division 4.5). Compliance with all applicable regulations regarding the transport, use, and disposal of hazardous materials would ensure that impacts would remain below a level of significance. Thus, impacts related to creation of a significant hazard to the public or the environment as a result of the construction of the proposed project would be **less than significant**.

Operational Impacts

Less Than Significant Impact with Mitigation. Operation of the project would involve the transport, storage, use, or disposal of hazardous materials including diesel fuel. The project would be required to conform to local, state, and federal laws regarding the transport, storage, use, and disposal of hazardous materials. The District is required to comply with local laws and submit a Hazardous Materials Business Plan to the County Environmental Health Department. Based on compliance with existing standards and implementation of MM-HM-1 and MM-HM-2, operational impacts would be **less than significant with mitigation incorporated.**

Optional Solar Component

Construction Impacts

Less Than Significant Impact. The construction of ground-mounted solar panels in the northern portion of the project site would involve the use of common hazardous materials, such as diesel fuel, gasoline, lubricants, coolants, and detergents. The solar PV panels would be mounted to a fixed rack or to a single-axis tracking system. The panels would be aligned in rows to be spaced based on specific design criteria and would be mounted on the racking systems. During construction, hazardous and non-hazardous wastes may be generated. The project would be required to comply with all federal, state, and local regulations. The proposed project would not routinely transport, use, or dispose of hazardous materials. The transport of hazardous materials by truck would be regulated by federal safety standards under the jurisdiction of the U.S. Department of Transportation. Therefore, impacts would be **less than significant.**

Operational Impacts

Less Than Significant Impact. Compliance with all federal, state, and local regulations and requirements would ensure that the operational phase of the proposed project would not pose a significant hazard to the public or the environment. Impacts for the project's solar component would be **less than significant**

Reclaimed Water System

Less Than Significant Impact. Construction activities would be broken into manageable lengths called "spreads" and utilize highly specialized and qualified workgroups. Each spread would composed of various crews, each with its own responsibilities. Installation would occur within existing asphalt roads using open trench methods. A typical trench would be 18 inches wide and 48 inches deep. The total required construction width could be up to 25 feet within urbanized areas/paved roadways. The ditches would be excavated using backhoes, trenching machines, and track hoes. An exception to the mechanical excavation would be hand digging to locate buried utilities, such as other pipelines, cables, water mains, and sewers.

Pipe-stringing trucks would be used to transport the pipe in 40-foot to 80-foot lengths from the shipment point or a pipe storage yard to the construction sites. A variety of hazardous substances and wastes would be stored, used, and generated during construction of the proposed project. These would include fuels for machinery and vehicles, new and used motor oils, cleaning solvents, paints, and storage containers and applicators containing such materials.

Any contaminated soil or waste encountered during trenching would be assessed and then removed and disposed of in the nearest available licensed landfills in accordance with applicable regulations. Prior to undertaking construction activities for the proposed project, the District would secure all required permits from agencies with jurisdiction over the right-of-way along the proposed alignment. Private right-of-way would be secured from property owners. Construction-related permits required by local agencies would be approved and issued prior to the start of construction, including traffic control plan approval, excavation permits, third-party crossing permits, and others as necessary. Impacts associated with transport, use, or disposal of such materials would be **less than significant.**

Operational Impacts

Less Than Significant Impact. The proposed pipelines would be designed to provide adequate horizontal and vertical separation for construction and future operation and maintenance of the existing substructure and new pipeline. Any maintenance activity would require the District to conform to local, state, and federal laws regarding the transport, storage, use and disposal of hazardous materials. The pipelines associated with the proposed project would be inspected, maintained, and repaired following completion of construction in accordance with regulatory requirements and in a manner consistent with good maintenance and repair practices. This would involve both routine preventative maintenance and emergency procedures to maintain service continuity. Impacts associated with the proposed pipelines would be **less than significant.**

b) Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

WWTF

Less Than Significant Impact with Mitigation. During any earth-moving operations (grading, trenching, etc.) within the existing facility areas, there is a possibility that unexpected hazardous materials could be encountered or unearthed. Hazardous materials in the construction area could create a risk to workers and the general public during excavation and transport. If contaminated soil is encountered and has to be removed from the construction area, it must be transported according to state and federal regulations and be replaced with imported soil approved for backfilling if necessary. In these cases, the contractor must comply with all applicable regulations. To minimize/eliminate fuel spillage, all construction vehicles would be adequately maintained and equipped. All equipment maintenance work, including refueling, would occur off site or within the designated construction staging area.

Accidental releases of hazardous materials used on site during operation of the wastewater treatment plant (i.e., fuels, lubricants, and disinfecting compounds such as chlorine) would have the potential to adversely affect on-site workers, public health, and/or the environment. Spillage of fuels or chemicals could result in a threat of fire or explosion or other situations that may pose a threat to human health and/or the environment. Releases could occur as a result of vehicular accidents, equipment malfunction, or improper storage. The San Luis Obispo County Department of Community Health, Environmental Division, requires a Hazardous Materials Business Plan for operation of the WWTF. The California Division of Occupational Safety and Health requires construction projects to implement safe hazardous material handling, transfer, storage, and maintenance. Projects are required to have designated staging/maintenance areas, standard operating procedures, and emergency response planning for the use of hazardous materials on site. Based on compliance with existing standards and implementation of MM-HM-1 and MM-HM-2, impacts would be **less than significant with mitigation incorporated.**

Optional Solar Component

Less Than Significant Impact with Mitigation. As discussed under Section 3.9(a), the proposed project would involve the use of some hazardous materials, such as diesel fuel, during construction. The proposed

project would comply with all federal, state, and local regulations. Compliance with all federal and state regulations and requirements would ensure that the optional solar component of the proposed project would not pose a significant hazard to the public or the environment. The release of any spills to the environment would comply with existing standards and MM-HM-1 and MM-HM-2 would be implemented. Impacts would be **less than significant with mitigation incorporated.**

Reclaimed Water System

Less Than Significant. As discussed under Section 3.9(a), the proposed reclaimed pipe system would comply with all federal, state, and local regulations. Staging areas for equipment and grading spoils would be located outside of the 50-foot setback from any water features and located within the paved road right-of-way to the extent feasible. The staging areas along both pipeline routes would be required for trench soil stockpiling and processing, equipment staging, and material transfer for urban roadway construction. An approximately 100-foot by 100-foot construction work area would be required for parking, laydown, and staging. The project would comply with all federal, state, and local regulations. Therefore, impacts would be **less than significant.**

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

WWTF

Less Than Significant Impact with Mitigation. The proposed project is within 0.25 miles of San Miguel Joint Union School, Almond Acres Charter Academy, and Lillian Larsen Elementary School. Based on compliance with existing standards and implementation of MM-HM-1, MM-HM-2, and MM-AQ-4, impacts would be **less than significant with mitigation incorporated.**

Optional Solar Component

Less Than Significant Impact with Mitigation. As discussed, the proposed project is within 0.25 miles of existing schools. MM-HM-1, MM-HM-2, and MM-AQ-4 would be implemented. Impacts would be **less than significant with mitigation incorporated.**

Reclaimed Water System

Less Than Significant Impact with Mitigation. As discussed, the proposed project is within 0.25 miles of existing schools. MM-HM-1, MM-HM-2, and MM-AQ-4 would be implemented. Impacts would be **less than significant with mitigation incorporated.**

d) Would the project be located on a site that 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?

WWTF

No Impact. According to a review of regulatory databases, the project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Therefore, **no impact** would occur as a result of the proposed project.

Optional Solar Component

No Impact. According to a review of regulatory databases, the project site is not included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5. Therefore, **no impact** would occur as a result of the optional solar component.

Reclaimed Water System

No Impact. The pipeline project would be broken into different sections throughout San Miguel. According to a review of regulatory databases, the pipeline would not cross/fall under an area included in the list of hazardous materials sites compiled pursuant to California Government Code Section 65962.5. Segment "B" of the Mission Street Alignment has a nearby hazardous materials site immediately adjacent to 12th street. However, the proposed pipeline would not have any impacts on this site. Therefore, **no impact** would occur as a result of the proposed pipe system.

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?

WWTF

No Impact. The nearest public airport to the project site, the Paso Robles Municipal Airport, is 7 miles away. The project site is not located within the Airport Safety Zones established in the Airport Land Use Plan (City of Paso Robles 2007). The project would not result in a safety hazard for people residing or working in the project area. Therefore, **no impacts** would occur.

Optional Solar Component

No Impact. As discussed, the nearest public airport to the project site is 7 miles away. Therefore, **no impacts** would occur.

Reclaimed Water System

No Impact. As discussed, the nearest airport to the project site is 7 miles away. Therefore, **no impacts** would occur.

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

WWTF

No Impact. The proposed project would not impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, **no impact** would occur.

Optional Solar Component

No Impact. The proposed project would not impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, **no impact** would occur.

Reclaimed Water System

Less Than Significant Impact. Construction activities related to the pipeline installation within existing asphalt roads using open trench methods could obstruct the normal flow of traffic or require temporary lane closures, which could interfere with an emergency evacuation route. In urban areas, each spread may be up to 2 miles in length, with the front-end managing traffic, posting no-parking notices, and saw cutting roadways and the back end restoring the trench and conducting paving and restriping.

Prior to undertaking construction activities, the District would secure all required permits from agencies with jurisdiction over the right-of-way along the proposed alignment. Private right-of-way would be secured from property owners. Construction-related permits required by local agencies would be approved and issued prior to the start of construction, including traffic control plan approval, excavation permits, third-party crossing permits, and others as necessary. Therefore, **less than significant impacts** would occur.

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

WWTF

Less Than Significant Impact with Mitigation. The project site is located in an urbanized area primarily designated as a Non-VHFHSZ. The areas directly north and east of the project site, as well as areas west of U.S. Highway 101 (approximately 0.25 miles), are characterized as High Fire Hazard Severity Zones (CAL FIRE 2007, 2009). The Salinas River may act as a buffer for wildland fires occurring to the east of the project area. The proposed WWTF is expected to be manned 24 hours per day, 7 days per week and the closest fire station is approximately 5 minutes away from the project site. MM-HM-3 through MM-HM-5 would be implemented to reduce the risk of loss, injury, or death from wildland fires. Impacts would be **less than significant with implementation of mitigation.**

Optional Solar Component

Less Than Significant Impact. As discussed, the proposed project is in an urbanized area primarily designated as a Non-VHFHSZ. There would be no permanent employees stationed at the optional solar site. Therefore, impacts would be **less than significant.**

Reclaimed Water System

Less Than Significant Impact. As discussed, the project site is located in an urbanized area primarily designated as a Non-VHFHSZ. The proposed pipe system would be entirely underground, would not include development of any human occupancy structures, and the components would be restricted from public use. The proposed pipe system would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires; therefore, impacts would be **less than significant**.

Mitigation Measures

The following mitigation measures are required for the project.

MM- HM-1: Prior to initiation of construction activities, the Contractor shall prepare and submit to the County of San Luis Obispo Department of Environmental Health a contingency plan for handling hazardous materials, whether found or introduced on-site during construction. This plan shall include standard construction measures as specified in local, state and federal regulations for hazardous materials, removal of on-site debris, and confirmation of presence of pipelines on-site. At a minimum, the following measures shall be included in the contingency plan:

a. If contaminated soils or other hazardous materials are encountered during any soil moving operation during construction (e.g., trenching, excavation, grading),construction shall be halted and the Hazardous Material Control Plan (HMCP) implemented.

b. Instruct workers on recognition and reporting of materials that may be hazardous.

c. Minimize delays by continuing performance of the work in areas not affected by hazardous materials operations.

d. Identify and contact subcontractors and licensed personnel qualified to undertake storage, removal, transportation, disposal, and other remedial work required by, and in accordance with, laws and regulations.

e. Forward to engineer, copies of reports, permits, receipts, and other documentation related to remedial work.

f. Notify such agencies as are required to be notified by laws and regulations within the time stipulated by such laws and regulations.

g. File requests for adjustments to contract time and contract price due to the finding of hazardous materials in the work site in accordance with conditions of contract.

MM- HM-2: Prior to operation, the Contractor shall complete and submit a Hazardous Materials Business Plan to the SMCSD staff or their designee, and the County of San Luis Obispo Department of Environmental Health. As a component of the Hazardous Materials Business Plan, detailed procedures for handling and storage of hazardous materials used on site, and response to emergency or accidental releases of hazardous materials used on site shall be included.

MM- HM-3: Any structures shall be built to the Uniform Fire Code adopted by the County of San Luis Obispo. Any structures within high and very high fire areas shall contain a "defensible space" that provides a safety zone for firefighters, structures and the public.

MM- HM-4: During construction, staging areas, welding areas, or areas slated for development using spark-producing equipment shall be cleared of dried vegetation or other materials that could serve as fire fuel. To the extent feasible, the contractor shall keep these areas clear of combustible materials in order to maintain a fire break.

MM- HM-5: Any construction equipment that normally includes a spark arrester shall be equipped with an arrester in good working order. This includes, but is not limited to, vehicles, heavy equipment, and chainsaws.

3.10 Hydrology and Water Quality

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
X. HYDROLOGY AND WATER QUALITY – Would the project:				
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:				

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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 off site;	☐	☒	☐	☐
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?	☐	☐	☒	☐

Impact Analysis

a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

WWTF and Optional Solar Component

Less Than Significant Impact. Construction of the WWTF and optional solar component would include grading and earthwork activities that could potentially result in erosion and sedimentation, which could subsequently degrade downstream receiving waters and violate water quality standards. Stormwater runoff during the construction phase may contain silt and debris, resulting in a short-term increase in the sediment load of the municipal storm drain system and adjacent Salinas River. In addition, substances such as oils, fuels, paints, and solvents may be inadvertently spilled on the project site and subsequently conveyed via stormwater to nearby drainages and the Salinas River.

Because the project would result in more than 1 acre of ground disturbance, the project would be subject to the National Pollutant Discharge Elimination System stormwater program, which includes obtaining coverage under the State Water Resources Control Board's Construction General Permit. Construction activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground such as stockpiling or excavation. The Construction General Permit requires development and implementation of a SWPPP. Among the required items that must be included within a SWPPP are project design features, commonly known as BMPs, intended to protect against substantial soil erosion as a result of water and wind erosion. Examples of project BMPs are included in Section 2.5.5, Erosion and Sediment Control. Implementation of the Construction

General Permit, including preparation of a SWPPP and implementation of BMPs, would minimize sediment and pollutants in stormwater runoff during project construction.

Furthermore, upon completion of construction, all areas of exposed soil would be returned to conditions similar to those prior to ground-disturbing activities (i.e., hardscape areas would be repaved and landscaped areas would be re-vegetated), thus minimizing long-term surface water quality impacts. Perched groundwater is present within alluvial deposits at a depth of 15 feet to 25 feet below ground surface. The District does not rely on this alluvial aquifer as a potable water source. However, based on nine existing wells in the project area, including two on-site monitoring wells, it appears that upon construction there would be a localized impact to the shallow alluvial aquifer water quality beneath the project site. Groundwater concentrations of total dissolved solids, nitrate, sodium, and chloride are elevated with respect to District water supply concentrations. These constituents in shallow groundwater are chronically out of compliance with effluent quality limits established by the Central Coast RWQCB, as set forth in Order 99-046. Although salt will not be removed in the treatment process, compliance with salts reduction will be through the blending of recycled water with groundwater at the point(s) of compliance (i.e. vineyards)

Therefore, construction and operation of the project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Impacts would be **less than significant**.

Reclaimed Water System

Less Than Significant with Mitigation. Construction of the reclaimed water pipeline would occur primarily within existing asphalt roads using open trench methods. A typical trench would be 18 inches wide and 48 inches deep. The total required construction width could be up to 25 feet. Excavated soil would be temporarily stockpiled adjacent to the trench pending backfill or transport off-site. As described for the WWTF and solar component, these soils would be temporarily subject to erosion, which in turn could result in sedimentation of adjacent drainages, ephemeral creeks, and the Salinas River. However, because pipeline installation would be completed in association with WWTF construction, and because pipeline construction would cumulatively disturb more than 1 acre of land, pipeline construction would similarly be subject to provisions of the Construction General Permit, including completion of a SWPPP and associated BMPs. Examples of project BMPs are included in Section 2.5.5. Implementation of the Construction General Permit, including preparation of a SWPPP and implementation of BMPs, would minimize sediment and pollutants in stormwater runoff during project construction. Furthermore, upon completion of construction, all areas of exposed soil would be returned to conditions similar to those prior to ground-disturbing activities (i.e., hardscape areas would be repaved, and landscaped areas would be re-vegetated), thus minimizing long-term surface water quality impacts.

The River Road Alignment of the proposed reclaimed water pipeline would traverse four ephemeral creeks that flow from east to west under River Road and into the Salinas River. Depending on final design and on city and state planning review, the pipeline would be constructed across these drainages as directionally drilled crossings or bored crossings. The directionally drilled crossings and bored crossings would involve excavating a pit on each side of the drainage, as well as work areas up to about 400 feet by 200 feet for the entry pit and 100 feet by 200 feet for the exit pit. Spoils from the excavation would be placed alongside the pits. Spoils would be used as backfill, and wet spoils would be placed in detention basins if uncontaminated and otherwise suitable. Temporary ground disturbance and stockpiling of soil, pending

backfill or off-site transport, would potentially result in erosion-induced sedimentation of these ephemeral creeks and the nearby Salinas River. However, such sedimentation would be minimized through implementation of BMPs, as previously described. Following completion of construction, all areas of exposed soil would be returned to conditions similar to those prior to ground-disturbing, thus minimizing long-term surface water quality impacts.

Directionally drilled borings include pumping drilling fluid through the drill pipe to the drill head. The drill fluid lubricates the drill stem and carries the cuttings to the surface. The entry pit doubles as a capture pit for the returned drilling fluid. The fluid is pumped through a treatment system that separates the cuttings from the fluid and reprocesses the fluid for reuse. The drill fluid is then recycled and re-injected into the drill stem. Although directional drilling techniques typically avoid impacts to water quality, the potential for impacts exists due to accidental release of drilling lubricants to the surface, known as a frac-out. A frac-out may occur as a result of loss of drilling lubricant, a loss of circulation, or an unexpected change in pressure. Frac-outs are usually resolved by reducing the drilling lubricant pressure or increasing its viscosity. Should a frac-out occur, it could result in the release of drilling lubricant into a jurisdictional water feature or adjacent to a jurisdictional water feature so that it could be washed into the feature, thereby adversely affecting water quality. Pursuant to California Fish and Game Code Section 5650, discharges into waters of the state that may be harmful to fish, plants, mammals, or birds are prohibited unless the discharge is expressly authorized pursuant to the terms of a Waste Discharge Requirement, in accordance with the Porter-Cologne Act. Without mitigation, the potential for frac-out related water quality impacts during construction would be potentially significant. However, upon implementation of MM-HYD-1, impacts would be reduced to below a level of significance. Impacts of the proposed project are considered **less than significant with mitigation incorporated.**

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

WWTF and Optional Solar Component

Less Than Significant Impact. Perched groundwater is present at a depth of approximately 15 to 25 feet below ground surface at the WWTF and adjacent optional solar component site (Appendix A). The proposed project is not anticipated to encounter groundwater during excavation or ground-disturbing activities. However, should groundwater be encountered, and dewatering be necessary during construction, discharges would be made in accordance with the Construction General Permit requirements outlined in Order No. 2009-0009-DWQ, Stormwater Discharges Associated with Construction and Land Disturbance Activities. If necessary, the groundwater would be pumped out of the excavation and discharged in accordance with the SWPPP. The amount of potential groundwater pumped would have minimal effects on the local aquifer because it would be temporary, would be localized in nature, and would consist of perched groundwater, which is not used as a drinking water source. Potential impacts associated with dewatering would be further reduced through the incorporation of waste management and materials pollution control BMPs and non-stormwater management BMPs included in the SWPPP. For these reasons, the WWTF and optional solar component of the proposed project would have **less than significant impacts** on groundwater.

Reclaimed Water System

Less Than Significant Impact. As previously discussed for the WWTF and optional solar component, should groundwater be encountered, and dewatering be necessary during construction, discharges would be made in accordance with the Construction General Permit. The amount of potential groundwater pumped would have minimal effects on the local aquifer because it would be temporary, would be localized in nature, and would consist of perched groundwater, which is not used as a drinking water source. Potential impacts associated with dewatering would be further reduced through the incorporation of waste management and materials pollution control BMPs and non-stormwater management BMPs included in the SWPPP. Additionally, development of a recycled water conveyance system as part of the project, to convey wastewater to vineyards, schools, parks, and other landscaped features for irrigation, would reduce the amount of pumping within the Paso Robles Groundwater Basin. For these reasons, the reclaimed water system portion of the proposed project would have **less than significant impacts** on groundwater.

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;

WWTF and Optional Solar Component

Less Than Significant Impact with Mitigation. The WWTF improvements and proposed solar panels would be constructed on a relatively flat-lying terrace adjacent to the Salinas River. Although minor drainage improvements would be completed on site, the drainage pattern would not be substantially altered as a result of project construction. Proposed project construction, including the headworks building, secondary treatment building, disinfection/chemical storage building, and support facilities, would result in an increase in impervious surfaces, which in turn could result in increased runoff, on- or off-site erosive scour, and resultant siltation of the adjacent Salinas River. However, the proposed project would be developed in accordance with MM-HYD-2a, which would ensure that Low Impact Development (LID) BMP features are incorporated into the project to ensure that an 85th percentile 24-hour rainfall event is treated and retained on site, and MM-HYD-2b, which would ensure that the project does not discharge stormwater runoff generated by a 95th percentile, 24-hour storm event. As a result, impacts would be **less than significant with mitigation incorporated**.

Reclaimed Water System

Less than Significant Impact. Similarly, most of the proposed recycled water pipeline would be constructed on relatively flat-lying topography and the drainage patterns would not be altered as a result of construction. As a result, long-term erosion or siltation, on or off site, would not occur and impacts would be **less than significan**t.

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

WWTF and Optional Solar Component

Less Than Significant Impact with Mitigation. Runoff occurs when there is more water than land can absorb. An increase in impervious surfaces reduces the underlying soils' ability to absorb water, decreasing localized groundwater recharge rates and increasing runoff volumes. As previously discussed in Section 3.10(c-i), development of the proposed project would result in an increase in impervious surfaces, which could result in a potentially significant increase of localized on- and off-site runoff into the adjacent Salinas River. However, as previously discussed in Section 3.10(c-i), the project would include MM-HYD-2b, which would ensure that the project does not discharge stormwater runoff generated by a 95th percentile, 24-hour storm event. As a result, impacts would be **less than significant with mitigation incorporated**.

Reclaimed Water System

Less than Significant Impact. As previously discussed, pipeline construction would be subject to provisions of the Construction General Permit, including completion of a SWPPP and associated BMPs, which would minimize sediment and pollutants in stormwater runoff during project construction. Furthermore, upon completion of construction, all areas of exposed soil would be returned to conditions similar to those prior to ground-disturbing activities, thus minimizing long-term surface water quality impacts. The rate or amount of surface runoff would not increase, and impacts would be **less than significan**t.

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

WWTF and Optional Solar Component

Less Than Significant Impact with Mitigation. As previously discussed under Sections 3.10(c-i) and 3.10(c-ii), the WWTF and solar components of the proposed project could result in increased runoff and additional sources of polluted runoff that would be potentially significant. However, the proposed project would be developed in accordance with MM-HYD-2a, which would ensure that LID BMP features are incorporated into the project to ensure that an 85th percentile 24-hour rainfall event is treated and retained on site, and MM-HYD-2b, which would ensure that the project does not discharge stormwater runoff generated by a 95th percentile, 24-hour storm event. In addition, the solids management area of the WWTF would store and dispose of accumulated biosolids, sludge, and debris from the influent screening in accordance with all relevant County and municipal regulations related to water quality. As a result, with implementation of MM-HYD-2a and MM-HYD-2b, the WWTF and solar components of the project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Impacts would be **less than significant with mitigation incorporated**.

Reclaimed Water System

Less than Significant Impact. As previously discussed, pipeline construction would be subject to provisions of the Construction General Permit, including completion of a SWPPP and associated BMPs, which would minimize sediment and pollutants in stormwater runoff during project construction. Furthermore, upon completion of construction, all areas of exposed soil would be returned to conditions similar to those prior to ground-disturbing activities, thus minimizing long-term surface water quality impacts. As a result, impacts would be **less than significan**t.

iv) impede or redirect flood flows?

WWTF

Less Than Significant Impact. The WWTF is located on the west side of the Salinas River. The eastern portion of the site is located within a FEMA Special Flood Hazard Area (Zone A) and contains approximately 20.6 acres. The remaining 17.8 acres, within which the existing WWTF is located, are designated Zone X by FEMA, indicating that there is a minimal risk of flooding in those areas. Base flood elevations for the Special Flood Hazard Area have not been established by FEMA; therefore, Monsoon Consultants performed a hydrologic and hydraulic analysis in 2021 to determine the base flood elevations for the site (Appendix G). Based on this analysis, the eastern portion of the project site lies within a 100-year floodplain.

Under Executive Order 11988, Floodplain Management, federal agencies funding and/or permitting critical facilities are required to avoid the 500-year floodplain or protect the facilities to the 500-year flood level (FEMA 2020). Monsoon Consultants provided base flood elevations for the 500-year flood at the site (Appendix G). Based on this analysis, the entire project site would be inundated in the event of a 500-year flood. It is anticipated that federal funding would be used in part to finance this WWTF upgrade project, which is considered a critical facility. As a result, FEMA would require that the project treatment facilities be constructed above the 500-year base flood elevations or with a protective berm to prevent flooding of the facility in the event of a 500-year flood (FEMA 2020).

In addition, according to the Division of Safety of Dams of the Department of Water Resources, the Nacimiento Dam has been classified as an "Extremely High" downstream hazard potential (MCWRA 2020). In the unlikely event of a full dam breach, Embankment Failure Inundation Maps prepared show that the inundation area at the project site is similar to the 100-year floodplain and less extensive than the 500-year floodplain. As a result, the 500-year floodplain is the design flood for the project.

Construction of a protective berm or raising of the project site grade above the 500-year flood plain would potentially impede or redirect flood flows, resulting in potentially significant impacts. However, based on 500-year flood modeling of post-construction conditions, flood elevations would increase a maximum of 4 inches over pre-construction flood elevations, which is considered negligible (Appendix G). As a result, impacts would be **less than significant**.

Optional Solar Component

Less than Significant Impact. Under this option, the proposed project would include the installation of ground-mounted solar panels in the northern portion of the project site, approximately 500 feet north of the aeration ponds. The flooding potential would be as described above for the WWTF. Construction and operation of the solar panels would not impede or redirect flood flows, as the panels would be installed on piles, which would not substantially inhibit flood flows. As a result, impacts would be **less than significant.**

Reclaimed Water System

Less than Significant Impact. Much of the proposed reclaimed water pipeline would be within the 100-year and 500-year flood plain of the Salinas River. However, with the exception of the bridge crossing, the wastewater conveyance pipe would be constructed underground and therefore would not impede or redirect flood flows. The addition of the pipeline to the bridge would not increase the potential for the bridge to impede or redirect flood flows. As a result, impacts would be **less than significant.**

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

WWTF and Optional Solar Component

Less Than Significant Impact. As discussed for Section 3.10(c-iv), the eastern portion of the WWTF is within a 100-year Special Flood Hazard Area and the entire site, including the optional solar component, is within the 500-year floodplain. In addition, up to 4 feet of water could inundate the eastern portion of the WWTF in the event of failure of the Nacimiento Dam. This inundation area is similar to the 100-year floodplain. In the event of inundation, potential on-site contaminants, including untreated wastewater, screened solid waste, sludge, and trash, could be released downstream and into the neighboring environment, resulting in potentially significant impacts.

Based on modeling completed for the project site, the 500-year base flood elevation is 617 feet amsl. However, based on preliminary project plans, the entire footprint area of the WWTF was assumed to be 619 feet amsl, or 2 feet above 500-year flood levels. As a result, the project facilities would not be subject to flooding and associated risk of risk of pollutants. Impacts would be **less than significant.**

Reclaimed Water System

No Impact. Much of the proposed reclaimed water pipeline would be within the 100-year and 500-year flood plain of the Salinas River. However, any potential rupture of the pipeline would only release treated water to the environment. No pollutants would be released. As a result, **no impacts would occur.**

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

WWTF, Optional Solar Component, and Reclaimed Water System

Less Than Significant Impact. As discussed for Section 3.10(a), the proposed project would have less than significant construction related impacts on water quality with implementation of a SWPPP and would therefore not conflict with or obstruct implementation of a water quality control plan. With respect to operations, the WWTF is within the jurisdiction of the Central Coast RWQCB and has been regulated by WDR Order No. 99-046, which was last revised in June 1999. The RWQCB drafted new General WDR Order No. R3-2020-0020, which became effective September 25, 2020. In conjunction with the upgrade/expansion of the WWTF, the District would be required to apply to the RWQCB to obtain coverage under this new General Permit.

Groundwater would not be extracted in association with the project. Implementation of the project would provide a new source of recycled water supply for irrigation, thereby reducing pumping demands and drawdown impacts on the Paso Robles Groundwater Basin, which is impacted by decreasing water levels. As a result, the project would be consistent with the goals of the Paso Robles Subbasin Groundwater Sustainability Plan (Montgomery Watson 2020), which was completed in accordance with the California Sustainable Groundwater Management Act.

Because the project is consistent with the goals of the Sustainable Groundwater Management Act and the Paso Robles Subbasin Groundwater Sustainability Plan, and would continue to comply with the WDRs, the project would not the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan and impacts would be **less than significant**.

Mitigation Measures

The following mitigation measures would be required for project development.

MM-HYD-1 **Frac-Out Contingency Plan.** The San Miguel Community Services District (District) or their contractor shall store pertinent materials on site to quickly contain potential frac-outs. At the entry or exit of the drill and for the duration of the drilling activity, the District or their contractor shall maintain a supply of sediment barriers (e.g., weed-free straw bales and silt fence), plastic sheeting, shovels and buckets, mud pumps and additional hose, mud storage tanks, and a vacuum truck. In addition, the District may store sandbags, floating booms or silt curtains, plywood, a small backhoe to dig sumps, and corrugated pipe.

In the event of a frac-out, the release shall be assessed immediately, and the District or their contractor shall take the following steps:

- Initiate immediate suspension of the drilling operation.
- Contain the frac-out with supplies and materials as appropriate.
- Verify that the drilling lubricant would not enter a jurisdictional water feature.
- Assess the containment structure and determine whether additional supplies and materials are needed to prevent the spread of surfaced drilling lubricant.
- Determine whether cleanup of the frac-out material is needed.

If a frac-out is identified in a jurisdictional water feature or other sensitive resource area, the following additional steps shall be taken:

- The District or their contractor shall notify the appropriate agency authorities with jurisdiction (i.e., the U.S. Army Corps of Engineers, California Department of Fish and Wildlife, and Regional Water Quality Control Board).
- The drill angle shall be increased to move below the frac-out and to reduce the amount of drilling lubricant reaching the surface. The current drill profile shall be evaluated, and drill pressures and pump volume rates shall be adjusted, as needed.
- If standing water is present, hand-placed containment, silt curtains, or other containment techniques for water releases shall be deployed if necessary. To the extent feasible, surface releases of excess drilling lubricant shall be held in a contained area and removed using small collection sumps with portable pumps and hoses, and without undue disturbance to the banks and bed of the water feature.
- Frac-out cleanup shall be conducted in a manner that avoids damage to existing and adjacent vegetation. Soils that come in contact with drilling lubricant shall be removed to the extent feasible without causing excessive loss of topsoil or vegetation.

Once the frac-out is contained, drilling may resume upon approval from the appropriate agency officials and District representatives. Frac-out material shall be collected and stored in containers until it can be reused or disposed of in an approved disposal facility.

MM-HYD-2a **Stormwater Quality.** Prior to issuance of grading permits, the San Miguel Community Services District or their contractor shall prepare a Stormwater Management Plan in accordance with the Central Coast Regional Water Quality Control Board Post-Construction Stormwater Management Requirements for Development Projects in the Central Coast Region (RWQCB 2013). The Stormwater Management Plan shall demonstrate that post-construction Low Impact Development (LID) Best Management Practices (BMPs) are incorporated into the proposed project design and that these features are designed to effectively retain runoff generated by the 85th percentile, 24-hour storm event, as determined by local rainfall data. The LID BMPs shall also be designed to effectively reduce and/or eliminate water pollution caused by runoff flowing from the developed site. The post-construction LID retention BMPs (harvesting and use, infiltration, and evapotranspiration) shall be used unless it can be demonstrated that those BMPs are infeasible. The project shall follow the LID hierarchy of infiltration, harvest and use, evapotranspiration, biofiltration, and non-retention-based treatment systems. These LID features shall be sized and designed in accordance with the specifications outlined in the Post-Construction Stormwater Management Requirements document.

MM-HYD-2b **Runoff Retention.** Prior to issuance of grading permits, the San Miguel Community Services District or their contractor shall design the project to meet the runoff retention requirements of the Central Coast Regional Water Quality Control Board Post-Construction Stormwater Management Requirements for Development Projects in the Central Coast Region (RWQCB 2013). The project shall be designed to prevent off-site discharge from events up to the 95th percentile 24-hour rainfall event, as determined from local rainfall data. Compliance shall be achieved by optimizing infiltration. If infiltration is infeasible or cannot achieve full compliance, the remaining runoff amount shall be retained on site via storage, rainwater harvesting, and/or evapotranspiration. Runoff retention specifications shall be sized and designed in accordance with the specifications outlined in the Post-Construction Stormwater Management Requirements document.

3.11 Land Use and Planning

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XI. LAND USE AND PLANNING – Would the project:				
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?	☐	☒	☐	☐

a) Would the project physically divide an established community?

WWTF

No Impact. The project site is occupied by the existing WWTF and undeveloped land directly to the north of the existing WWTF. Surrounding uses include commercial and residential areas to the west and south and open areas associated with the Salinas River to the north and east. The project would occur on the northeastern edge of San Miguel and would not physically divide an established community. Therefore, **no impact** would occur.

Optional Solar Component

No Impact. As previously discussed, surrounding uses include commercial and residential areas to the west and south and open areas associated with the Salinas River to the north and east. The project would occur on the northeastern edge of San Miguel and would not physically divide an established community. Therefore**, no impact** would occur.

Reclaimed Water System

No Impact. The proposed project would be located entirely underground in streets or within the footprint of Salinas River and would not physically divide an established community. Therefore, **no impact** would occur

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

WWTF

Less Than Significant Impact with Mitigation. The project involves developing a public utility facility on parcels designated as Residential Suburban and requires the completion of a Conditional Use Permit . Upon completion of the Conditional Use Permit (implementation of MM-LU-1), impacts are expected to be **less than significant with mitigation.**

3.12 Mineral Resources

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

a) Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

WWTF

No Impact. A desktop review of the San Miguel Community Plan Resources Conservation Element (County of San Louis Obispo 2016b) and California Department of Conservation Division of Mines and Geology found no aggregate resource areas within the vicinity of the existing and proposed project site. The project site does not support known mineral resources. The proposed project would not result in impacts to native soils or mineral resources or the loss of availability of known mineral resources. Therefore, **no impact** would occur as a result of the proposed project.

Optional Solar Component

No Impact. As discussed above, the project site would not 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. **No impact** would occur as a result of the proposed project.

Reclaimed Water System

No Impact. According to the San Miguel Community Plan Resources Conservation Element (County of San Louis Obispo 2016b), many of the lands within the community have been urbanized. According to the California Department of Conservation Division of Mines and Geology, there are no aggregate resource areas within the vicinity of the proposed pipeline. Therefore, **no impacts** to regionally valuable mineral resources would occur as a result of the proposed project.

b) Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

WWTF

No Impact. There are no known locally important mineral resource recovery sites located within the project site. The proposed project would not result in the loss of availability of a locally important mineral resource recovery site. Therefore, **no impact** would occur as a result of the proposed project.

Optional Solar Component

No Impact. As previously discussed, according to the San Miguel Community Plan Resources Conservation Element (County of San Louis Obispo 2016b) and California Department of Conservation Division of Mines and Geology, there are no aggregate resource areas and the project would not result in the loss of availability of a locally important mineral resource. Therefore, **no impact** to a mineral resource recovery site would result from the proposed project.

Reclaimed Water System

No Impact. As previously discussed, the proposed pipeline area would not result in the loss of availability of a locally important mineral resource. Therefore, **no impact** to a mineral resource recovery site would result from the proposed project.

3.13 Noise

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. NOISE – Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
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?	☐	☐	☐	☒

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?

Less-than-Significant Impact. Noise generated by project construction equipment would include a combination of heavy equipment including dozers, front end loaders, backhoes, and air compressors that, when combined, can reach relatively high levels. The number and mix of construction equipment would likely vary during the following phases: site preparation, grading, building construction, paving, and architectural coating.

Using specific construction equipment assumptions similar to those as used for the air quality analysis, a noise model emulating the Roadway Construction Noise Model that was developed by the Federal Highway Administration (FHWA 2008) was utilized. Input variables for the Roadway Construction Noise Model consist of the receiver/land use types, the equipment type (i.e., backhoe, crane, truck, etc.), the number of equipment pieces, the duty cycle for each piece of equipment (i.e., percentage of each time period the equipment typically is in operation and operating at full load or power level), and the distance between the construction noise source and the sensitive receiver. The Roadway Construction Noise Model has default duty-cycle values for the various pieces of equipment, which were derived from an extensive study of typical construction activity patterns.

Noise-sensitive land uses in the vicinity of the project site include existing residences. Consequently, project construction noise exposure levels at other receivers further away from the site would be less, due primarily to natural distance-dependent attenuation factors such as geometric divergence, air absorption, ground surface absorption, and potential path-occluding structures and topography.

Operational noise associated with the project would be no different than the existing use therefore impacts would be **less than significant.**

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

Less-than-Significant Impact. The main concern associated with groundborne vibration is annoyance; however, in extreme cases, vibration can cause damage to buildings, particularly those that are old or otherwise fragile. Some common sources of groundborne vibration are trains and construction activities such as blasting, pile-driving, and heavy earth-moving equipment. The primary source of groundborne vibration occurring as part of the proposed project is construction activity.

Groundborne vibration information related to construction/heavy equipment activities has been collected by the California Department of Transportation (Caltrans). Information from Caltrans indicates that continuous/intermittent vibrations (such as from construction activity) with approximately 0.1 inches per second peak particle velocity may be characterized as “strongly perceptible” (Caltrans 2020). The heavier pieces of construction equipment, such as large bulldozers or hoe rams, would register up to approximately 0.089 inches per second peak particle velocity at a distance of 25 feet per FTA guidance (FTA 2018).

The major concern with construction vibration is related to building damage. Construction vibration as a result of the proposed project would not result in structural building damage given the construction methods that are proposed. Impacts related to groundborne vibration would be **less than significant**.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 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?

No Impact. The Project area is not located within 2 miles of any public airport, nor is it located within the boundaries of any airport land use plans. Therefore, the proposed Project would not expose or result in excessive noise for people residing or working in the Project area, and **no impact** would occur.

3.14 Population and Housing

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. POPULATION AND HOUSING – Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

According to the U.S. Census Bureau, San Miguel had a population of 2,906 residents in 2019 (U.S. Census Bureau 2020). The proposed project focuses on improvements to San Miguel's WWTF.

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

WWTF

Less Than Significant Impact. The proposed project is located within the community of San Miguel, within the existing WWTF site and on two parcels to the north of the existing WWTF. No housing is present on site. The project does not propose any new housing. The proposed project would increase the capacity of the WWTF to accommodate wastewater flows from the 2050 population projection. The project would be built based on current projections; the project is not expected to induce substantial population growth. Workers employed during the construction phase would most likely come from surrounding communities and would not require any new long-term housing. Therefore, impacts on local population trends would be **less than significant.**

Optional Solar Component

Less Than Significant Impact. The proposed solar component would help maximize treatment efficiency and minimize overall cost. This would include the installation of ground-mounted solar panels in the northern portion of the project site. However, no direct growth constraint would be removed, nor would a direct stimulus to growth be added. Therefore, the impact on local population trends would be **less than significant.**

Reclaimed Water System

Less Than Significant Impact. The proposed pipeline would involve the construction of new 8-inch high-density polyethylene water transmission and distribution pipelines to convey wastewater to large vineyards to the east and west of the WWTF. The project would provide recycled water to the community area, which would potentially reduce the demand on available water supplies. This would not result in substantial unplanned population growth in the area either directly or indirectly. Therefore, the impact on local population trends would be **less than significant.**

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

WWTF

No Impact. The proposed project would not displace people or require the construction of replacement housing. The project would be located within the existing WWTF site. Therefore, **no impacts** would occur.

Optional Solar Component

No Impact. As discussed, the proposed project would not displace people or require the construction of replacement housing. Therefore, **no impact** would occur.

Reclaimed Water System

No Impact. The proposed project would take place within the San Miguel community within existing paved streets. The construction phase of the project would not displace any housing. Therefore, **no impact** would occur.

3.15 Public Services

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. PUBLIC SERVICES				
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?	☐	☐	☐	☒

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?

WWTF, Optional Solar Component, and Reclaimed Water System

Less Than Significant Impact. The project site is served by the San Miguel Fire Department. The San Miguel fire station is located approximately 5 minutes from the project site at 1150 Mission Street in San Miguel. Access to the project site would be from Bonita Place. The proposed project would not impose a significant demand for fire protection services. No new public service facilities or personnel would be required. Anticipated impacts are considered **less than significant** and no mitigation is required.

Police protection?

WWTF, Optional Solar Component, and Reclaimed Water System

Less Than Significant Impact. The community of San Miguel is currently served by the San Luis Obispo Sheriff's Department, which is located at 356 N Main Street, Templeton, California, approximately 17 minutes from the project site (County of San Luis Obispo 2016b). Access to the project site would be from Bonita Place. Wastewater treatment facility operations do not have a high demand for police protection.

Schools?

WWTF, Optional Solar Component, and Reclaimed Water System

No Impact. The proposed project would consist of improvements to an existing wastewater treatment facility. The need for new or altered school facilities is typically associated with an increase in local population such that student enrollment in district schools increases consecutively. The proposed project would not alter population in the project area. However, construction of the proposed project could have the potential to temporarily interfere with access to schools in the project area. Nearby schools include Lillian Larsen Elementary School, located at 1601 L Street, San Miguel, California 93451. Interferences to school access would be limited to temporary increases in traffic and obstructions along roadways and sidewalks in the vicinity of the schools due to construction activities and staging. These effects would be temporary, and access to each school would be maintained throughout construction. Operation of the project would not impact school operations. The proposed project would not induce population growth and would not increase the population of children of school-attending age. For these reasons, the proposed project would have no impact on the ability of existing schools to accommodate students to the extent that new or expanded school facilities, materials, or staff would be required. Therefore, **no impact** would occur.

Parks?

WWTF, Optional Solar Component, and Reclaimed Water System

No Impact. The project would not involve a housing component or increase employment opportunities that would result in population growth. Therefore, additional demands on existing public parks would not occur as a result of project implementation and there would be **no impact**.

3.16 Recreation

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. RECREATION				
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?	☐	☐	☐	☒

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?

WWTF

Less Than Significant With Mitigation. The proposed project would not increase the demand for existing neighborhood or regional parks or other recreational facilities beyond the facilities existing in the community. The project site is within the Salinas River Trail Corridor (County of San Luis Obispo 2016b). The proposed trail runs directly through the existing and proposed WWTF property. However, the proposed project would be constructed on the west side of the project site, and the future trail is proposed further east, closer to the Salinas River. With the implementation of MM-REC-1, impacts would be reduced to **less than significant with mitigation**.

Optional Solar Component

No Impact. The proposed solar component would not involve a housing component or substantially increase employment opportunities within the area; therefore, the project would not increase the use of existing neighborhood and regional parks or other recreational facilities and there would be **no impact**.

Reclaimed Water System

No Impact. As discussed, the proposed pipeline system would not involve a housing component or substantially increase employment opportunities within the area; therefore, the project would not increase the use of existing neighborhood and regional parks or other recreational facilities and there would be **no impact**.

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?

WWTF

No Impact. The proposed project does not include recreational facilities and would not require the construction or expansion of existing recreational facilities in the project area. **No impact** would occur.

Optional Solar Component

No Impact. The solar component would not affect existing recreational resources or require the need for new or expanded recreational facilities. Therefore, there would be **no impact** associated with recreational facilities.

Reclaimed Water System

No Impact. As discussed, the pipeline system would not affect existing recreational resources or require the need for new or expanded recreational facilities. Therefore, there would be **no impact** associated with recreational facilities.

3.17 Transportation

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

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

WWTF

Construction Impacts

Less Than Significant Impact. Construction activities associated with the WWTF would occur entirely on site. A temporary construction staging area would be located on District property at the WWTF to store construction equipment, material, and temporary office space. Construction of the WWTF would generate short-term, construction-related vehicle and truck trips. The construction workforce is anticipated to average approximately 20 workers per day, and during peak activities (e.g., site preparation and plant installation) up to 50 workers per day, commuting to and from the site. The project would also generate truck trips to the site. The number of trucks needed would fluctuate throughout construction; however, it is estimated that even during the peak construction phase, there would be an average of less than one truck trip per day. Traffic accessing the site would be minimal and temporary and would not conflict with an applicable program, plan, ordinance, or policy addressing the performance of the circulation system, including public transit, roadway, bicycle or pedestrian facilities. Construction impacts would be **less than significant**.

Operational Impacts

Less Than Significant Impact with Mitigation. Once constructed, a total of five employees would be required to staff the plant 24 hours a day, 7 days a week. The project would not change the existing access to the site and the minimal increase in operations-related traffic would not conflict with an applicable program,

plan, ordinance, or policy addressing the performance of the circulation system, including public transit, roadway, bicycle, or pedestrian facilities.

The Parks and Recreation Element of the San Luis Obispo County General Plan identifies the proposed Salinas River Trail as a multi-use trail that would run along the Salinas River from Santa Margarita Lake to the Monterey County line. The proposed trail runs directly through the existing and proposed WWTF property. However, the proposed project would be constructed on the west side of the project site, and the future trail is proposed further east, closer to the Salinas River. With the implementation of MM-REC-1, impacts would be reduced to **less than significant with mitigation**.

Optional Solar Component

Construction Impacts

Less Than Significant Impact. Under this option, the proposed project would include the installation of ground-mounted solar panels in the northern portion of the project site. Construction would occur concurrent with the construction of the WWTF and require an additional 10 construction workers and 5 trucks. All construction activities would occur on site and, given the temporary nature of the project-added trips, construction would not affect an applicable program, plan, ordinance, or policy addressing the performance of the circulation system, including public transit, roadway, bicycle, or pedestrian facilities.

Operational Impacts

Less Than Significant Impact. Once constructed, the optional solar component would be maintained as part of the regular maintenance of the overall WWTF and would not require any additional personnel beyond those associated with the WWTF. Impacts due to operation of the solar component would therefore be **less than significant.**

Reclaimed Water System

Construction Impacts

Less Than Significant Impact. The project has the potential to create temporary lane closures, sidewalk closures, and bicycle lane closures during installation of pipelines within and across Mission Street, 20th Street, 19th Street, 16th Street, 14th Street, 12th Street, N Street, Monterey Road, River Road, Martinez Drive, Cross Canyon Road/Power Road, Magdalena Drive, and Indian Valley Road. The temporary lane closures may increase congestion during peak travel times due to a decrease in lane capacity. Any potential lane, driveway, and sidewalk closures would be coordinated with area residents and businesses to provide proper access. In addition, prior to undertaking construction activities for the proposed project, the District would secure all required permits from agencies with jurisdiction over the right-of-way along the proposed alignment. Private rights-of-way would be secured from property owners. Construction-related permits required by local agencies would be approved and issued prior to the start of construction, including traffic control plan approval, excavation permits, third-party crossing permits, and others as needed. With implementation of the traffic control plan, construction impacts would be **less than significant**.

Operational Impacts

Less Than Significant Impact. Once constructed, the pipelines would be below the surface of the roadways and would require only occasional maintenance. Impacts due to operation of the project would therefore be **less than significant**.

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

WWTF, Optional Solar Component, and Reclaimed Water System

No Impact. CEQA Guidelines Section 15064.3(b) sets forth specific criteria for determining the significance of transportation impacts. Subdivision (b) pertains to land use projects and describes factors that may indicate whether or not the number of vehicle miles traveled generated by a land use project may be significant. Project-related traffic would be limited predominantly to a relatively small number of temporary trips during the construction period and minimal trips for maintenance purposes. Because the project is not a land use project and would not generate substantial vehicle miles traveled, the project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b) and **no impact** would result.

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

WWTF

Construction Impacts

Less Than Significant Impact. Construction of the WWTF would occur entirely on site and no changes to the existing access driveway are proposed. Construction would not result in any design features or incompatible uses that would substantially increase traffic hazards. Impacts would be **less than significant**.

Operational Impacts

Less Than Significant Impact. The project does not include any design features that would affect traffic safety nor would it cause incompatible uses on local roads. No physical changes to the existing driveway are proposed and once operational the project would generate a negligible increase in traffic due to maintenance staff commuting to and from the site. Impacts would be **less than significant**.

Optional Solar Component

Construction Impacts

Less Than Significant Impact. Construction of the optional solar component would occur entirely on site. The project does not propose any design features or incompatible uses that would substantially increase traffic hazards. Impacts would be **less than significant**.

Operational Impacts

Less Than Significant Impact. Once constructed, the optional solar component would be maintained as part of the regular maintenance of the overall WWTF and would not require any additional personnel beyond those associated with the WWTF. There would be no changes to the access driveway or new design features that would substantially increase traffic hazards. Impacts would be **less than significant**.

Reclaimed Water System

Construction Impacts

Less Than Significant Impact. Construction of the pipelines would not involve permanent alteration of existing roadways, nor would it require incompatible vehicular access. As discussed previously, the project has the potential to create temporary lane closures, sidewalk closures, and bicycle lane closures during installation of pipelines, which may increase hazards to users of those facilities. Heavy machinery would also be used during construction of the project; however, the District would secure all required permits from agencies with jurisdiction over the right-of-way along the proposed alignment and would be required to prepare a traffic control plan to minimize impacts to area roadway, pedestrian, and bicycle facilities. Operation of all construction machinery would be conducted in accordance with the procedures set forth within the project's traffic control plan as required by the County. With implementation of the traffic control plan, the project's increase in potential hazards would be **less than significant**.

Operational Impacts

Less Than Significant Impact. Once constructed, the proposed reclaimed pipe system would be entirely underground or within the existing footprint of the WWTF. The project would not introduce any new geometric design features or incompatible uses that would substantially increase hazards. Impacts would be **less than significant**.

d) Would the project result in inadequate emergency access?

WWTF

Construction Impacts

Less Than Significant Impact. Construction of the WWTF would not result in inadequate emergency access. Improvements would occur within the existing footprint of the WWTF and emergency access to the site would continue to be provided from Bonita Place. Emergency access to the work areas would be maintained throughout construction. Impacts would be **less than significant**.

Operational Impacts

Less Than Significant Impact. Operation of the WWTF would not result in inadequate emergency access. No changes to the existing access driveway are proposed and emergency access to the site would continue to be provided from Bonita Place. Impacts would be **less than significant**.

Optional Solar Component

Construction Impacts

Less Than Significant Impact. As described above for the WWTF, construction of the solar component would not result in inadequate emergency access. Improvements would occur within the existing footprint of the WWTF and emergency access to the site would continue to be provided from Bonita Place. Emergency access to the work areas would be maintained throughout construction. Impacts would be **less than significant**.

Operational Impacts

Less Than Significant Impact. As described above for the WWTF, operation of the solar component would not result in inadequate emergency access. No changes to the existing access driveway are proposed and emergency access to the site would continue to be provided from Bonita Place. Impacts would be **less than significant**.

Reclaimed Water System

Construction Impacts

Less Than Significant Impact. Construction activities related to pipeline installation within the unpaved access road areas would not affect normal circulation flow or emergency access, as those portions of the project site are outside of public rights-of way and emergency access routes. Construction along paved roadways within the public right-of-way could potentially result in temporary lane closures. However, any lane or driveway closures would be coordinated with the County and all local emergency service providers as part of the permit process. As part of the required traffic control plan, traffic control measures will be identified to maintain access in the case of an emergency. In addition, the District will notify the neighborhood regarding dates for construction, hours of construction activities, and access requirements for emergency vehicles and residents. Impacts would be **less than significant**.

Operational Impacts

Less Than Significant Impact. Once constructed, the proposed pipe system would be entirely underground or within the existing footprint of the WWTF and would not impair or interfere with emergency access. Therefore, impacts would be **less than significant**.

3.18 Tribal Cultural Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. TRIBAL CULTURAL RESOURCES				
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) 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	☐	☐	☒	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	☐	☐	☒	☐

This section describes the existing tribal cultural resource (TCR) conditions of the project site and vicinity, identifies associated regulatory requirements, and evaluates potential impacts related to implementation of the proposed project. The California legislature passed AB 52 in recognition of California Native American tribal sovereignty and the unique relationship of California local governments and public agencies. AB 52 establishes a consultation process with California Native American tribes that are traditionally and culturally affiliated with the geographic area of the proposed project, if requested in writing by the tribe to the lead agency.

Existing Conditions

Dudek conducted a Phase 1 cultural resources investigation in support of the IS/MND for the proposed project. The archaeological resources investigation included a cultural resources site records and literature search at the CCIC, University of Santa Barbara, California, a review of the NAHC SLF, and an intensive surface survey covering the accessible portions of the project site. The project site includes APNs 021-051-013, 021-051-015, 021-051-016, and 021-051-017, including the general location of the potential recycled water conveyance system alignment.

Ethnohistoric Setting

The project area, including the community of San Miguel and the Mission of San Miguel Arcángel, sits at the historically documented boundary zone between two ethnolinguistic groups: the Salinan to the north and the Northern/Obispeño Chumash to the south. Because different ethnographers draw the boundaries of these ethnolinguistic territories in somewhat different places, these boundaries may have been quite fluid; perhaps at times they were shared, or even contested. For example, Golla (2011) puts the boundary somewhere between Paso Robles and Mission San Miguel, while Milliken and Johnson (2005) put the boundary just south of the mission, at San Marcos Creek.

Franciscan establishment of Mission San Miguel in AD 1797 was consciously directed at Salinan speakers living in the area where the mission was eventually built (Sitjar 1795, as cited in Milliken and Johnson 2005), many of whom were already living at Mission San Antonio de Padua to the north (established in 1771) and Mission San Luis Obispo to the south (established in 1772). Mission records from San Miguel reveal that this mission drew Salinan speakers from the local region, some Salinan speakers form the north, Salinan/Playano speakers from coastal areas to the west, Salinan speakers from the Coast Ranges to the east, Yokuts speakers from the eastern Coast Ranges or western Central Valley, and speakers of Northern Chumash/Obispeño to the south (Milliken and Johnson 2005). Esselen speakers (who neighbored the Salinan speakers to the north) are not documented in the mission records of San Miguel.

Though Cabrillo sailed up the Pacific Coast of California in 1542, and Cermeño anchored somewhere along the San Luis Obispo coast in 1595, the first Europeans to encounter Salinan peoples near the project area came with the Gaspar de Portolá overland expeditions of 1769 and 1770. Diarists from this party provide the earliest written observations of the area (Brown 2001; Milliken and Johnson 2005; Jones and Haney 2005). Information about Salinan lifeways can be gleaned from a variety of records that reference mission records and salvage ethnographies that were conducted and variably reported by Merriam, Mason, Kroeber, and J.P. Harrington (see Milliken and Johnson 2005). Hester (1978) condenses many of these into a concise ethnography of Salinan life, and Turner (1988) describes the known documents pertaining to Salinan language.

Background Research

California Historical Resources Information System Records Search

A CHRIS records search completed June 17, 2020, and January 4, 2021, at the CCIC indicates that one prehistoric cultural resource (CA-SLO-1271) has been previously recorded within the project site and one historic resource (CA-SLO-65) and one multi-component archaeological site consisting of both prehistoric and historic resources (CA-SLO-67 - transferred to supplemental loci of CA-SLO-65) are immediately adjacent to the project site. The remaining 15 cultural resources that have been previously recorded within the 1-mile radius of the project site include 3 historic archaeological sites, 4 historic built resources, 7 prehistoric sites, and 1 prehistoric isolate.

Previously Recorded Cultural Resources Within or Immediately Adjacent to the Proposed Project Site

CA-SLO-1271 is a prehistoric site measuring 240 meters north to south and 30 meters east to west (790 by 100 feet) at an elevation of 615 feet amsl located within the WWTF. This site is documented as consisting of burnt granite rock, chert debitage, and a Pismo clam shell and a cut animal bone of historic age. The site was originally formally recorded in 1989 and described as a low-density concentration of heat-treated granite and chert artifacts. Although not documented in the official site record, a review of previously conducted cultural resources studies revealed that a Phase II significance evaluation was conducted in 2004 (Stewart) that determined CA-SLO-1271 was not significant under CEQA; no further testing or avoidance was recommended.

CA-SLO-65 is a historic site that includes the San Miguel Mission and immediately surrounding area and is located approximately less than 25 meters (82 feet) southwest of the project site's potential conveyance system pipeline and Father Reginald Park/9th Street turn out. CA-SLO-65 is documented as consisting of the Mission adobe, the Mission cemetery, historic refuse, and artifacts related to the habitation of Native Americans at the San Miguel Mission. The site was originally formally recorded in 1949 and described as an "early Caucasian site in the Mission region." CA-SBA-65 was revisited in 1966 and resulted in the recordation of a shell midden containing animal bones and chipped stone in the area directly north of the Mission cemetery. CA-SBA-65 was again formally recorded in

1999 and as a result of this recordation, the site boundary of resource site CA-SBA-65 was extended to the west beyond the railroad right-of-way. The San Miguel Mission Archangel was listed on the NRHP in 1971; however, no formal record of evaluation for the shell midden containing animal bones and chipped stone identified in 1966 was provided within the CCIC records.

CA-SLO-67 is a multicomponent site, consisting of both prehistoric and historic period resources, measuring approximately 30 by 10 meters (100 by 35 feet) at an elevation of 550 feet amsl located approximately 10 meters (32 feet) south of the project site's potential conveyance system pipeline and Father Reginald Park/9th Street turn out. CA-SLO-67 is described as a dark midden with medium marine shell content that has likely been minimized in size due to modern development, with the historic component of the site consisting of reportedly the former camp site of Lt. Col. John C. Fremont. The site was originally formally recorded in 1966 and described as consisting of dark midden with medium density shell, bone and teeth, food refuse, and stone flakes. No formal record of evaluation was provided within the CCIC records for this resource. Table 19 summarizes all previously recorded tribal cultural resources within 1 mile of the project site.

Table 19. Previously Recorded Native American Cultural Resources within Proposed Project Areas

Designation	Resource Description	Recorded By	CRHP/NRHP Eligibility	Intersects Project Site	Approximate Distance from Proposed Project Site
CA-SLO-65 (P-40-000065 and P-40-040848)	Historic Mission San Miguel Arcangel.	1949 (Pilling); 1966 (D. S. Miller); 1970 (Louisiana Clayton Dart) 1999 (S. Waechter)	Listed	No	Immediately adjacent; 25 meters (82 feet) southwest
CA-SLO-67 (P-40-000067)	Transferred as a supplemental of CA-SLO-65; multicomponent site with midden, lithic scatter and historic monument as historic camp site of Fremont	1966 (D. S. Miller); 1968 (C. E. Dills)	Unknown	No	Immediately adjacent; 10 meters (32 feet) south
CA-SLO-505 (P-40-000505)	Prehistoric site consisting of a low-density lithic scatter, groundstone, and fire-affected rocks.	1969 (National Park Service)	Unknown	No	410 meters (1345 feet) northeast
CA-SLO-1058 (P-40-001058)	Prehistoric site consisting of a low-density lithic scatter.	1982 (Hampson, Loeffler, Wilfong)	Unknown	No	1280 meters (4199 feet) north
CA-SLO-1062 (P-40-001062)	Prehistoric site consisting of bedrock mortars.	1982 (Hampson)	Unknown	No	820 meters (2690 feet) southeast

Table 19. Previously Recorded Native American Cultural Resources within Proposed Project Areas

Designation	Resource Description	Recorded By	CRHP/NRHP Eligibility	Intersects Project Site	Approximate Distance from Proposed Project Site
CA-SLO-1271 (P-40-001271)	Prehistoric site consisting of a concentration of fire-affected rock and two chert artifacts.	1989 (R. O. Gibson)	Unknown	Yes	Overlapping
CA-SLO-2004 (P-40-002004)	Prehistoric site consisting of a low-density lithic scatter.	1999 (K. Davis, A. Kelly)	Unknown	No	95 meters (312 feet) southeast
CA-SLO-2446 (P-40-002446)	Prehistoric site consisting of Monterey chert flakes and one flaked stone tool.	2006 (Clay A. Singer and Douglas A. Greenfield)	Unknown	No	1530 meters (5020 feet) north
CA-SLO-2458 (P-40-002458)	Prehistoric site consisting of low-density lithic scatter.	2006 (Clay A. Singer and Douglas A. Greenfield)	Not Evaluated	No	600 meters (1,970 feet) west
(P-40-038193)	Prehistoric Isolate consisting of a chert biface	1998 (B. Polansky)	Unknown	No	1395 meters (4577 feet) south

Field Investigations

Dudek conducted an intensive archaeological survey of the project site containing the WWTF (APNs 021-051-013, -015, and -017) on June 24, 2020, and the route of the potential recycled water conveyance system pipeline, which includes Mission Street between Monterey Road and 20th Street, N Street between 14th Street and 20th Street, 12th Street, 14th Street, 16th Street, Indian Valley Road, and North River Road between N Street and Estrella Road on December 16, 2020.

The survey within the WWTF was divided into two parcels during the survey: a northern parcel (APN 021-051-017) that is void of development and two southern parcels (APN 021-051-013 and APN 021-051-015) that are currently occupied by four aerated lagoons, three percolation ponds, and one drying bed. No prehistoric cultural resources were identified as a result of the intensive pedestrian survey. Attempts were made to locate the previously identified prehistoric archaeological site (CA-SLO-1271) within the southern parcel. However, the recorded boundary of the northern portion of the archaeological site is consistent with the current location of an access road and an aerated lagoon obscuring ground surface visibility. The level of disturbance and lack of cultural material observed during the pedestrian survey is consistent with findings of previous surface and subsurface archaeological investigations (Gibson 1993; Stewart 2004). No prehistoric cultural resources were observed within or near the reported boundary of CA-SLO-1271.

The survey of the potential recycled water conveyance system pipeline, which would primarily extend approximately 75% through the downtown area of San Miguel through residential, commercial, and developed areas and

approximately 25% through the more rural surrounding community to the east of the downtown area, did not result in the identification of cultural resources. The potential recycled water conveyance system pipeline through the town of San Miguel was completely obscured by pavement along the entire extent of the proposed pipeline, providing no ground surface visibility. However, landscaped areas present between the street and adjacent sidewalk were sporadically planted with ornamental vegetation and trees, resulting in very good to excellent (70% to 100%) ground surface visibility. No cultural resources were observed within the potential pipeline route under generally reliable conditions.

Native American Coordination

A search of the NAHC SLF was requested on June 5, 2021, and conducted by Cultural Services Analyst Sarah Fonseca on June 8, 2021, to determine the presence of any reported Native American cultural resources within the project site as listed in the NAHC-maintained SLF. The NAHC SLF records search result was negative. No California Native American tribes have requested notification for projects within the District's jurisdiction. As such, the District has not identified any TCRs within the project site that would warrant discretionary designation of a resource as a TCR.

Relevant Plans, Policies, and Ordinances

Federal

Although there is no federal nexus for this project, the trail proposal was evaluated in consideration of NRHP designation criteria and integrity requirements.

State

The California Register of Historical Resources (Public Resources Code Section 5020 et seq.)

In California, the term "historical resource" includes but is not limited to "any object, building, structure, 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]). In 1992, the California legislature established the CRHR "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1[a]). A resource is eligible for listing in the CRHR if the State Historical Resources Commission determines that it is a significant resource and that it meets any of the following NRHP criteria (PRC Section 5024.1[c]):

- Associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- 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.

Resources less than 50 years old are not considered for listing in the CRHR, but may be considered if it can be demonstrated that sufficient time has passed to understand the historical importance of the resource (see 14 CCR 4852[d][2]).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally designated as eligible for listing on the NRHP are automatically listed on the CRHR, as are the state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys. The State Historic Preservation Officer maintains the CRHR.

California Environmental Quality Act

The following CEQA statutes (PRC Section 21000 et seq.) and CEQA Guidelines (14 CCR 15000 et seq.) are of relevance to the analysis of archaeological, historic, and tribal cultural resources:

- PRC Section 21083.2(g) defines "unique archaeological resource."
- PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a) defines "historical resources." In addition, CEQA Guidelines Section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource"; it also defines the circumstances when a project would materially impair the significance of a historical resource.
- PRC Section 21074(a) defines "tribal cultural resources."
- PRC Section 5097.98 and CEQA Guidelines Section 15064.5(e) set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.
- PRC Sections 21083.2(b) and 21083.2(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures. Preservation in place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context and may help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

More specifically, under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (PRC Section 21084.1; 14 CCR 15064.5[b]).

A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (14 CCR 15064.5[b][1]; PRC Section 5020.1[q]). In turn, the significance of a historical resource is materially impaired when a project does any of the following (14 CCR 15064.5[b][2]):

(1) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or

(2) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(3) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA.

Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project site contains any "historical resources," then evaluates whether that project will cause a substantial adverse change in the significance of a historical resource such that the resource's historical significance would be materially impaired.

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (PRC Sections 21083.2[a]–[c]).

Section 21083.2(g) defines a unique archaeological resource as 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 (PRC Section 21083.2[g]):

(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.

Impacts on non-unique archaeological resources are generally not considered a significant environmental impact (PRC Section 21083.2[a]; 14 CCR 15064.5[c][4]). However, if a non-unique archaeological resource qualifies as a TCR (PRC Sections 21074[c] and 21083.2[h]), further consideration of significant impacts is required.

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are detailed in PRC Section 5097.98.

Assembly Bill 52

AB 52 formalizes the consultation process between lead agencies and tribal representatives, requiring the lead agency to initiate consultation with California Native American groups that are traditionally and culturally affiliated with a project area. This includes tribes that may not be federally recognized. Lead agencies are required to begin consultation prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report.

Tribal Cultural Resources

Section 4 of AB 52 adds Sections 21074(a) and (b) to the PRC, addressing TCRs and cultural landscapes. Section 21074(a) defines a "tribal cultural resource" as one of the following:

(4). Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
   a. Included or determined to be eligible for inclusion in the California Register of Historical Resources.

b. Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

(2). 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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

Section 1(a)(9) of AB 52 establishes that "a substantial adverse change to a tribal cultural resource has a significant effect on the environment." Effects on TCRs should be considered under CEQA. Section 6 of AB 52 adds Section 21080.3.2 to the PRC, which states that parties may propose mitigation measures "capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource." Further, if a California Native American tribe requests consultation regarding project alternatives, mitigation measures, or significant effects to TCRs, the consultation shall include those topics (PRC Section 21080.3.2[a]). The environmental document and the mitigation monitoring and reporting program (where applicable) shall include any mitigation measures that are adopted (PRC Section 21082.3[a]).

Native American Historic Cultural Sites

The Native American Historic Resources Protection Act (PRC Section 5097, et seq.) addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction; establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project; and establishes the NAHC to resolve disputes regarding the disposition of such remains. In addition, the Native American Historic Resource Protection Act makes it a misdemeanor punishable by up to 1 year in jail to deface or destroy an Indian historic or cultural site that is listed or may be eligible for listing in the CRHR.

California Native American Graves Protection and Repatriation Act

The California Native American Graves Protection and Repatriation Act (California Repatriation Act), enacted in 2001, requires all state agencies and museums that receive state funding and that have possession or control over collections of human remains or cultural items, as defined, to complete an inventory and summary of these remains and items on or before January 1, 2003, with certain exceptions. The California Repatriation Act also provides a process for the identification and repatriation of these items to the appropriate tribes.

California Health and Safety Code

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described below, these procedures are detailed in PRC Section 5097.98.

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. California Health and Safety Code Section 7050.5b requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the County Coroner has examined the remains. PRC Section 5097.98 also outlines the process to

be followed in the event that remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the NAHC within 24 hours (Health and Safety Code Section 7050.5c). The NAHC will notify the MLD. With the permission of the landowner, the MLD may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the MLD by the NAHC. The MLD may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

Local

No local regulations are applicable.

Impact Analysis

a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?

Less Than Significant Impact. Based on the CHRIS and NAHC SLF records searches, including background research as summarized above, no previously recorded archaeological resources of Native American origin or TCRs listed in the CRHR, a local register, or any other of the records reviewed were identified within the project site. Therefore, impacts would be **less than significant**. No mitigation measures are required.

ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

Less Than Significant Impact. Assembly Bill 52 requires lead agencies to provide tribes who have requested notification with early notice of the proposed project and, if requested, consultation to inform the CEQA process with respect to TCRs. No California Native American tribes have requested notification for projects within the District's jurisdiction. As such, the District has not identified any TCRs within the project site that would warrant discretionary designation of a resource as a TCR. Therefore, the proposed project would not cause a substantial adverse change in the significance of a TCR, as defined in PRC Section 21074, and impacts would be **less than significant**. No mitigation measures are required.

3.19 Utilities and Service Systems

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIX. UTILITIES AND SERVICE SYSTEMS – Would the project:				
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 reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

a) ***Would the project 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?***

WWTF

Less Than Significant Impact. Wastewater from the proposed operations building would be connected to the existing WWTF located on site. The project components would be designed to meet the requirements of the RWQCB. No adverse physical effects beyond those already disclosed in this IS/MND would occur as a result of installation of new wastewater facilities. As such, impacts associated with the installation of new wastewater facilities would be **less than significant.**

Optional Solar Component

Less Than Significant Impact. The proposed solar component would not require the construction of new or expanded water, wastewater, or stormwater drainage; natural gas; or telecommunications facilities. Maintenance of the solar PV panels would involve cleaning them approximately 6 times per year. Cleaning of the PV panels would be conducted with a pressure washer with water available at the WWTF. New water or wastewater facilities would not be required to accommodate the project. Utility construction impacts would be **less than significant.**

Reclaimed Water System

Less Than Significant Impact. The proposed pipeline component would involve the construction of a new reclaimed water system. No adverse physical effect would occur as a result of installation of a new reclaimed water system. Therefore, impacts associated would be **less than significant.**

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

WWTF

Less Than Significant Impact. The proposed project involves the construction of new secondary and tertiary treatment facilities at the existing WWTF and on expansion property, as well as ancillary site improvements. The proposed project includes the addition of a membrane bioreactor, UV disinfection, headworks, lift station, and recycled water pumping station. The project would produce tertiary California Code of Regulations Title 22 quality recycled water for agricultural use or groundwater recharge. Therefore, impacts associated would be **less than significant.**

Optional Solar Component

Less Than Significant Impact. The proposed project is not considered a large land use development project for purposes of compliance with Government Code Section 66473.7 and California Water Code Section 10912. The proposed solar component is not likely to occupy more than 40 acres of land and is therefore not considered a project pursuant to California Water Code Section 10912. The proposed project would require water for cleaning of the panels approximately 6 times per year or expanded water supply would not be required. A **less than significant impact** would occur.

Reclaimed Water System

No Impact. Upon completion, the project would permanently offset the use of potable water for the irrigation demand to large vineyards to the east and west of the WWTF, and **no impact** would occur.

c) Would the project result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

WWTF

No Impact. Upon completion, the project would produce tertiary California Code of Regulations Title 22 quality recycled water for agricultural use or groundwater recharge. As such, the project would not result in an increased demand for wastewater treatment, and **no impact** would occur.

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?

WWTF

Less Than Significant Impact. The construction phase of the project would result in a temporary increase in solid waste disposal needs associated with construction wastes. Waste generation and disposal requirements associated with the proposed project would be limited to minor quantities derived from construction activities (e.g., material packaging) and employees (e.g., food-related trash). Solid wastes from the project would be disposed of at the Chicago Grade Landfill located in Templeton. Solid waste collection service would be serviced by San Miguel Garbage Company and San Miguel Roll-Off Company. The landfill has an estimated lifespan through approximately 2034. Operation of the proposed facilities is not expected to generate new solid waste; therefore, impacts would be **less than significant.**

Optional Solar Component

Less Than Significant Impact. Non-recyclable construction and operational waste would be disposed of at the Paso Robles Landfill or another local landfill permitted to accept such waste. Construction waste would be sorted on site and recyclable materials would be transported to an appropriate regional recycling facility.

Operation and maintenance activities would produce negligible volumes of solid and liquid wastes that would be disposed of in accordance with applicable requirements. Decommissioning would result in the generation of additional solid waste. Anticipated solid waste flows include concrete, metal, plastics, and PV panels. Recyclable materials, including PV panels, would be removed from the waste stream and recycled prior to disposal of solid waste in an approved landfill. The project would not require the development of new or expanded landfills. The project would result in a **less than significant impact.**

Reclaimed Water System

Less Than Significant Impact. As previously discussed, the construction phase of the project would result in a temporary increase in solid waste disposal needs. Non-recyclable construction and operational waste would be disposed of at the Paso Robles Landfill or another landfill permitted to accept such waste. Therefore, impacts would be **less than significant.**

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

WWTF

No Impact. Construction and operation of the proposed project would generate minimal solid waste and would not affect landfill capacity. During construction of the project, construction debris (e.g., excavated soil, asphalt) would be generated. Solid waste debris would be disposed of at a permitted landfill. Moreover, AB 939, also known as the Integrated Waste Management Act, mandates the reduction of solid waste disposal in landfills by requiring a minimum of 50% diversion rate. Accordingly, at least half of the potential construction waste would be diverted from a landfill. The remaining quantity is reasonably anticipated to be within the permitted capacity of the permitted landfills serving the project area. Therefore, **no impact** related to solid waste would occur.

Optional Solar Component

No Impact. The proposed solar component would comply with all federal, state and local regulations related to solid waste. Therefore, there would be **no impacts** and no further analysis or mitigation is required.

Reclaimed Water System

No Impact. The proposed distribution pipeline would comply with all federal, state, and local regulations related to solid waste. Therefore, there would be **no impacts** and no further analysis or mitigation is required.

3.20 Wildfire

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XX. WILDFIRE – If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐

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

WWTF

No Impact. Based on the review of San Luis Obispo County's San Miguel Community Plan, the associated EIR, and the Office of Emergency Response Preparedness Plan, the proposed project does not conflict with emergency response or emergency evacuation plan (County of San Luis Obispo 2016a, 2016b). The project site is not located near any major highway or roadways. Large areas surrounding the perimeter of the District are designated as High Fire Hazard Severity Zones within State Responsibility Areas. Within designated State Responsibility Areas, the state is financially responsible for the prevention and suppression of wildfires. In contrast, within designated Local Responsibility Areas, the local government is responsible for fire protection. The project site is not within a Very High Fire Hazard Severity Zone or a state responsibility area. **No impact** would occur.

Optional Solar Component

No Impact. The project site is not within a SRA. The proposed solar PV facility with battery energy storage component would not generate substantial long-term traffic. and would not result in any permanent road closures or affect any existing emergency shelters. The proposed project would not interfere with an adopted emergency response plan or evacuation plan. As a result, this impact is considered less than significant. **No impact would occur.**

Reclaimed Water System

Less Than Significant Impact. Construction along the paved portions of the road could potentially result in temporary lane closures. However, any lane closures would be coordinated with the County of San Luis Obispo as part of the encroachment permit process, which sets forth requirements for traffic control measures to be implemented, including measures to preserve access in the case of an emergency. In addition, the WWTF will notice the neighborhood regarding dates for construction, hours of construction

activities, and access requirements for emergency vehicles and residents. Once constructed, the proposed recycled water distribution system would be entirely underground or within the existing footprint of the WWTF and would not impair or interfere with the applicable emergency response plans. Therefore, the project would not interfere with an adopted emergency response plan or evacuation plan, and impacts would be **less than significant**.

b) Due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

WWTF

Less Than Significant Impact. The proposed facility is a WWTF expansion. Any hazardous materials would be kept in a designated storage location consistent with applicable laws and regulations. The project site is not within a Slope Setback Overlay, as designated by the County (County of San Luis Obispo 2016b). As such, the project would not involve development on a sloped area such that wildfire risks would be exacerbated. Impacts would be **less than significant**.

Optional Solar Component

Less Than Significant Impact. As discussed, the project site is relatively flat with no risk of wildland fires. Implementation of the project would not exacerbate wildfire risks due to slope, prevailing winds, and other factors. Therefore, there would be **less than significant** impacts and no further analysis or mitigation is required.

Reclaimed Water System

Less Than Significant Impact. Once constructed, the proposed recycled water distribution system would be entirely underground in streets or within the existing footprint of the WWTF and would not introduce new project occupants to the project site. Consequently, in the case of a wildfire, project implementation would not expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Impacts would be **less than significant.**

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?

WWTF

No Impact. The WWTF is located in a designated urban area as identified in the San Miguel Community Plan (County of San Luis Obispo 2016b). Any facilities to support a project would be located within existing established roadways or utility corridors. No new power lines, roads, fuel breaks, or emergency water sources will be required. As such, there would be **no impact**.

Optional Solar Component

No Impact.

Reclaimed Water System

Less Than Significant Impact. The proposed reclaimed water distribution system would be entirely underground or within the existing footprint of the WWTF. The pipeline would convey recycled water to large vineyards to the east and west of the WWTF. Impacts associated with the installation or maintenance of associated infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment would be **less than significant.**

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

WWTF

Less Than Significant Impact. The project site sits on flat topography, not downslope of any nearby hillside. The project site is adjacent to the Salinas River; however, the design of the WWTF has taken into consideration the FEMA 100- and 500-year flood event and applied it into the design and will not be inundated in a storm event. As discussed in Appendix G, the impacts would be **less than significant**.

Optional Solar Component

No Impact. The project area is not subject to wildland fires. Therefore, there would be **no impacts** and no further analysis or mitigation is required.

Reclaimed Water System

Less Than Significant Impact. The proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Impacts would be **less than significant.**

3.21 Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XXI. MANDATORY FINDINGS OF SIGNIFICANCE				
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?	☐	☐	☒	☐

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?***

Less Than Significant Impact With Mitigation. All impacts have been mitigated. With the implementation of the required mitigation measures t=the project does not have the potential to 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.

Therefore, impacts would be **less than significant with mitigation incorporated**.

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)?

Less Than Significant Impact With Mitigation. When evaluating cumulative impacts, it is important to remain consistent with Section 15064(h) of the CEQA Guidelines, which states that an EIR must be prepared if the cumulative impact may be significant and the project's incremental effect, though individually limited, is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects.

Alternatively, a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable through mitigation measures set forth in an MND or if the project will comply with the requirements in a previously approved plan or mitigation program (including, but not limited to, water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plan, plans or regulations for the reduction of greenhouse gas emissions) that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located.

The proposed project would potentially result in project-related biological resources, cultural resources, geological resources, and TCRs impacts that could be potentially significant without the incorporation of mitigation. Thus, when coupled with biological resources, cultural resources, geological resources, and TCRs impacts related to the implementation of other related projects throughout the broader project area, the project would potentially result in cumulative-level impacts if these significant impacts are left unmitigated.

However, with the incorporation of mitigation identified herein, the project's impacts to biological resources, cultural resources, geological resources, and TCRs would be reduced to less than significant levels and would not considerably contribute to cumulative impacts in the greater project region. In addition, these other related projects would presumably be bound by their applicable lead agency to (1) comply with all applicable federal, state, and local regulatory requirements and (2) incorporate all feasible mitigation measures, consistent with CEQA, to further ensure that their potentially cumulative impacts would be reduced to less than significant levels.

Although cumulative impacts are always possible, the project, by incorporating all mitigation measures outlined herein, would reduce its contribution to any such cumulative impacts to less than cumulatively considerable; therefore, the project would result in individually limited, but not cumulatively considerable, impacts. Impacts would be **less than significant with mitigation incorporated**.

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

Less Than Significant Impact. As evaluated throughout this IS/MND, environmental impacts associated with the proposed project would be reduced to less than significant levels. Thus, the proposed project would not directly or indirectly cause substantial adverse effects on human beings. Impacts would be **less than significant**.

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Appendix A

Preliminary Engineering Report

Appendix B

Botanical Survey Report

Appendix C

Special-Status Wildlife Species with Potential to Occur in the Project Region

Appendix D

San Joaquin Kit Fox Habitat Evaluation

Appendix E

Phase I Archaeological Survey Report

Appendix F

Air Quality and Greenhouse Gases

Appendix G

Updated Flood Report

WASTEWATER TREATMENT FACILITY UPGRADE/EXPANSION PRELIMINARY ENGINEERING REPORT

November 5, 2020

SAN MIGUEL COMMUNITY SERVICES DISTRICT

Prepared by:

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Acronyms and Abbreviations

AAF	Average Annual Flow
ADF	Average Daily Flow
AFY	Acre-Feet per Year
AIPS	Advanced Integrated Pond System
AIWPS	Advanced Integrated Wastewater Pond System
AOB	Ammonia Oxidizing Bacteria
APLR	Annual Pollutant Loading Rate
ADMMF	Average Day Maximum Month Flow
BFEs	Base Flood Elevations
BNR	Biological Nutrient Removal
BOD	Biological Oxygen Demand
BOD_5	Biological Oxygen Demand after 5 days
CalRecycle	California Department of Resources Recycling and Recovery
CAA	Clean Air Act
CAGR	Compounded Annual Growth Rate
CARB	California Air Resources Board
cBOD	Carbonaceous Biological Oxygen Demand
CDFA	California Department of Food and Agriculture
CEQA	California Environmental Quality Act
CIP	Clean-in-Place
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CT	Chlorine Contact Time
CWA	Clean Water Act
CWB	California Water Board
DBP	Disinfection Byproducts
DDW	The Division of Drinking Water
DO	Dissolved Oxygen
EBPR	Enhanced Biological Phosphorus Removal
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FIRMs	Flood Insurance Rate Maps
GPD	Gallons per Day
GPM	Gallons per Minute
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
HRT	Hydraulic Retention Time

HP	Horsepower
I/I	Infiltration & Inflow
MBBR	Moving Bed Bioreactor
MBR	Membrane Bioreactor
MDDWF	Maximum Day Dry Weather Flow
MDF	Maximum Daily Flow
MDWWF	Maximum Day Wet Weather Flow
MFS	Membrane Filtration System
MGD	Million Gallons per Day
mg/L	milligrams/Liter
MLE	Modified Lutzak-Ettinger
MLSS	Mixed Liquor Suspended Solids
MPN	Most Probable Number
MW	Maintenance Wash
N	Nitrogen
NFPA	National Fire Protection Association
NH_3	Ammonia as Nitrogen
NPDES	Natural Pollution Discharge Elimination System
NTU	Nephelometric Turbidity Units
NWRI	National Water Research Institute
O&M	Operation and Maintenance
OWTS	Onsite Wastewater Treatment System
P	Phosphorus
PCL	Pollutant Concentration Limits
PG&E	Pacific Gas & Electric
PHF	Peak Hour Flows
PHWWF	Peak Hour Wet Weather Flow
PLCs	Programmable Logic Controllers
PM	Particulate Matter
pH	Potential Hydrogen
RAS	Recycled Activated Sludge
RBC	Rotating Biological Contactors
Regional Board	Central Coast Regional Water Quality Control Board
RO	Reverse Osmosis
RW	Recycled Water
SBR	Sequencing Batch Reactor
SIP	State Implementation Plan
SLOCAPCD	San Luis Obispo County Air Pollution Control District
SLT	San Lawrence Terrace
SGMA	Sustainable Groundwater Management Act
SMCSD	San Miguel Community Services District
SNMP	Salt & Nutrient Management Plan

SRT	Solids Retention Time
SWRCB	State Water Resources Control Board
TDH	Total Dynamic Head
TDS	Total Dissolved Solids
TFSC	trickling Filter Solids Contact
THM	Trihalomethane
TF	Trickling Filter
TKN	Total Kjeldahl Nitrogen
TN	Total Nitrogen
TSS	Total Suspended Solids
URL	Urban Reserve Line
USDA	United States Department of Agriculture
UV	Ultra-Violet
W/	With
WAS	Waste Activated Sludge
WDRs	Waste Discharge Requirements

INTRODUCTION

The San Miguel Community Services District (SMCSD) owns and operates the Machado Wastewater Facility (WWTP) which is located near the northern limits of the SMCSD, adjacent to the west bank of the Salinas River. The WWTP is subject to the Waste Discharge Requirements (WDR) Order No. 99-046 (included in this document as Appendix A). The existing WWTP comprises four (4) partially mixed aerated lagoons in series and three (3) percolation ponds. The WWTP underwent the most recent significant upgrade in the late 1990s, bringing its current and permitted capacity to 200,000 GPD (0.2 MGD). The SMCSD currently treats an average of approximately 150,000 GPD, with occasional daily flow volumes which exceed the treatment capacity of the WWTP. The SMCSD acknowledges that the existing WWTP is nearing capacity and requires an expansion and upgrade.

In June 2018, the Central Coast Regional Water Quality Control Board (Regional Board) issued a letter to the SMCSD in which they informed the SMCSD that they should proceed immediately with the planning and engineering for the expansion of the existing WWTP (the letter is included in this document as Appendix B). In the referenced letter, the Regional Board stated that because the existing WWTP has been chronically out of compliance with permit limits for total dissolved solids, chloride, and sodium, the SMCSD should consider including salt and nitrogen removal capability in the expansion plans.

In addition to the expanded and enhanced treatment capacity that the SMCSD needs to achieve compliance with the current Regional Board WDR Order No. 99-046 and as a consequence of continued population growth within the SMCSD boundaries, the SMCSD Board of Directors also understands that the expansion and upgrade of the WWTP must also be accomplished in a manner which is compatible with the requirements of SGMA, including the Paso Robles Groundwater Sustainability Plan (GSP), which was adopted in November 2019. For these reasons, the SMCSD is planning to install new treatment facilities to provide recycled effluent which meets the Title 22 requirements for agricultural irrigation.

1 PROJECT PLANNING

1a. Location Maps

The unincorporated community of San Miguel, as defined by the Urban Reserve Line (URL), is home to approximately 2,821 residents and is located in the Salinas River Valley in the of central coast region of California, approximately seven miles north of the City of Paso Robles. The community lies near the confluence of the Estrella and Salinas Rivers, adjacent to the site of the historic Mission San Miguel Archangel. A Regional Location Map is included as Figure 1.1.

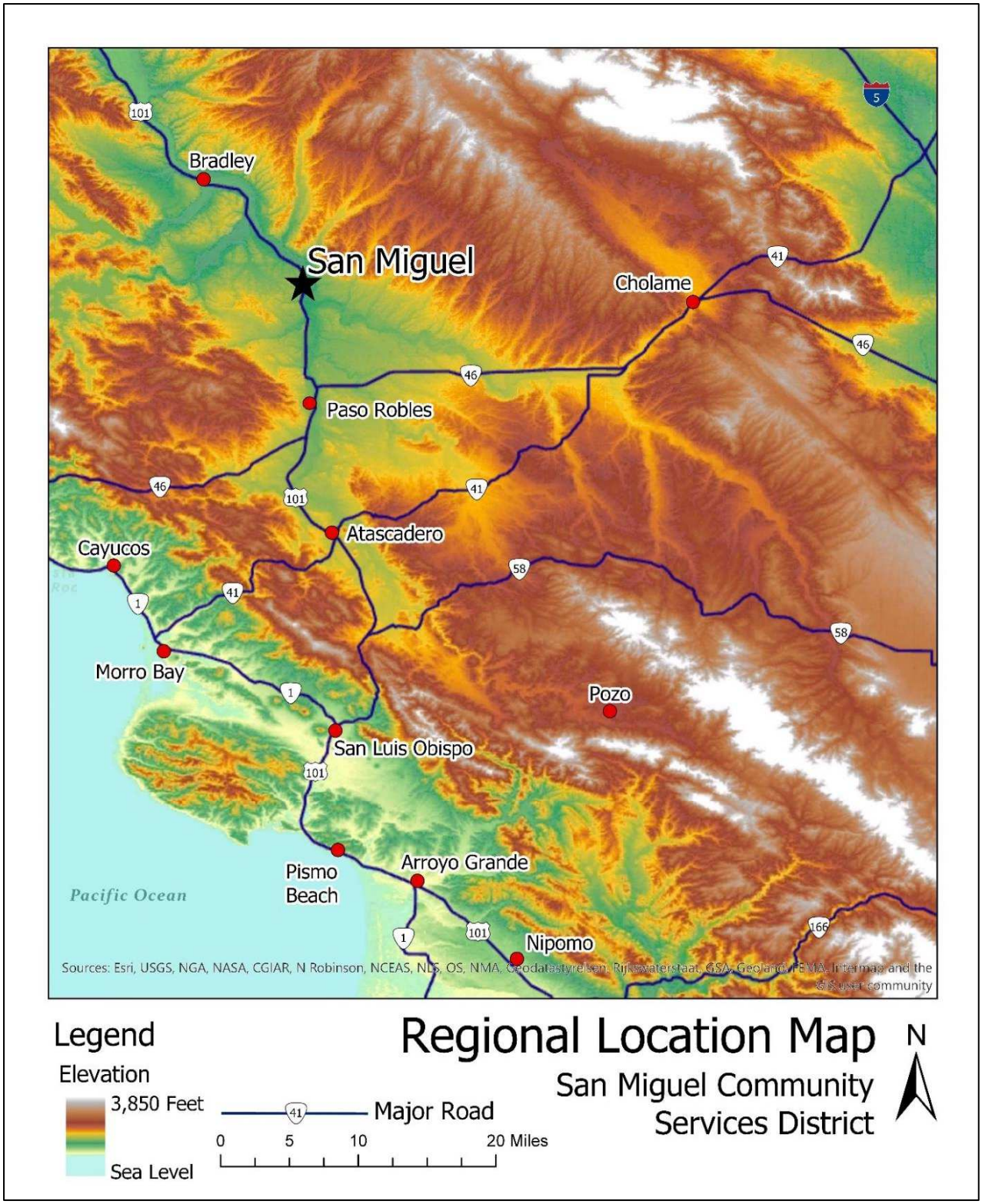


Figure 1.1. Location Map

San Miguel's urban area, which is identified by its URL on the County's official maps, includes all areas between Highway 101 and the Salinas River, between the northbound Mission Street off ramp and 20th Street. A small strip of the urban area extends north of 20th Street along the east side of Mission Street. A portion of the urban area extends west of the highway to include the area along Cemetery Road south of 10th Street to the cemetery. East of the river, the urban area includes the Power Road area and the western portion of the San Lawrence Terrace tract.

The existing boundary of the SMCSD Sanitary Sewer Service Area, as well as the boundary of future Expansion Areas, is overlaid on an aerial photograph of the region in Figure 1.2. The existing boundary of the SMCSD Sanitary Sewer Service Area, as well as the boundary of future Expansion Areas, is overlaid on a USGS Topographical map of the region in Figure 1.3.

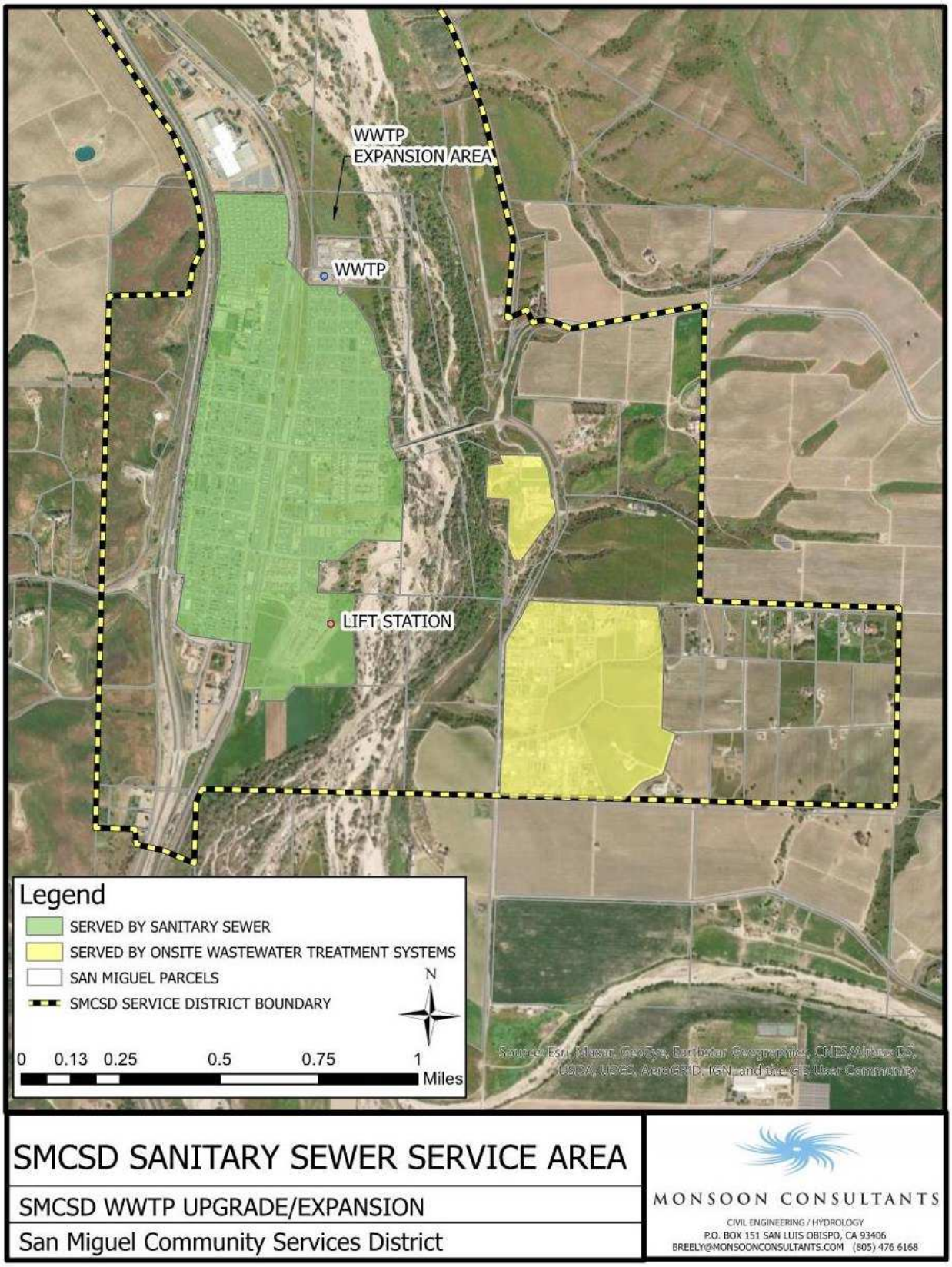


Figure 1.2. Aerial Photograph with depiction of SMCSD Sanitary Sewer Service Area

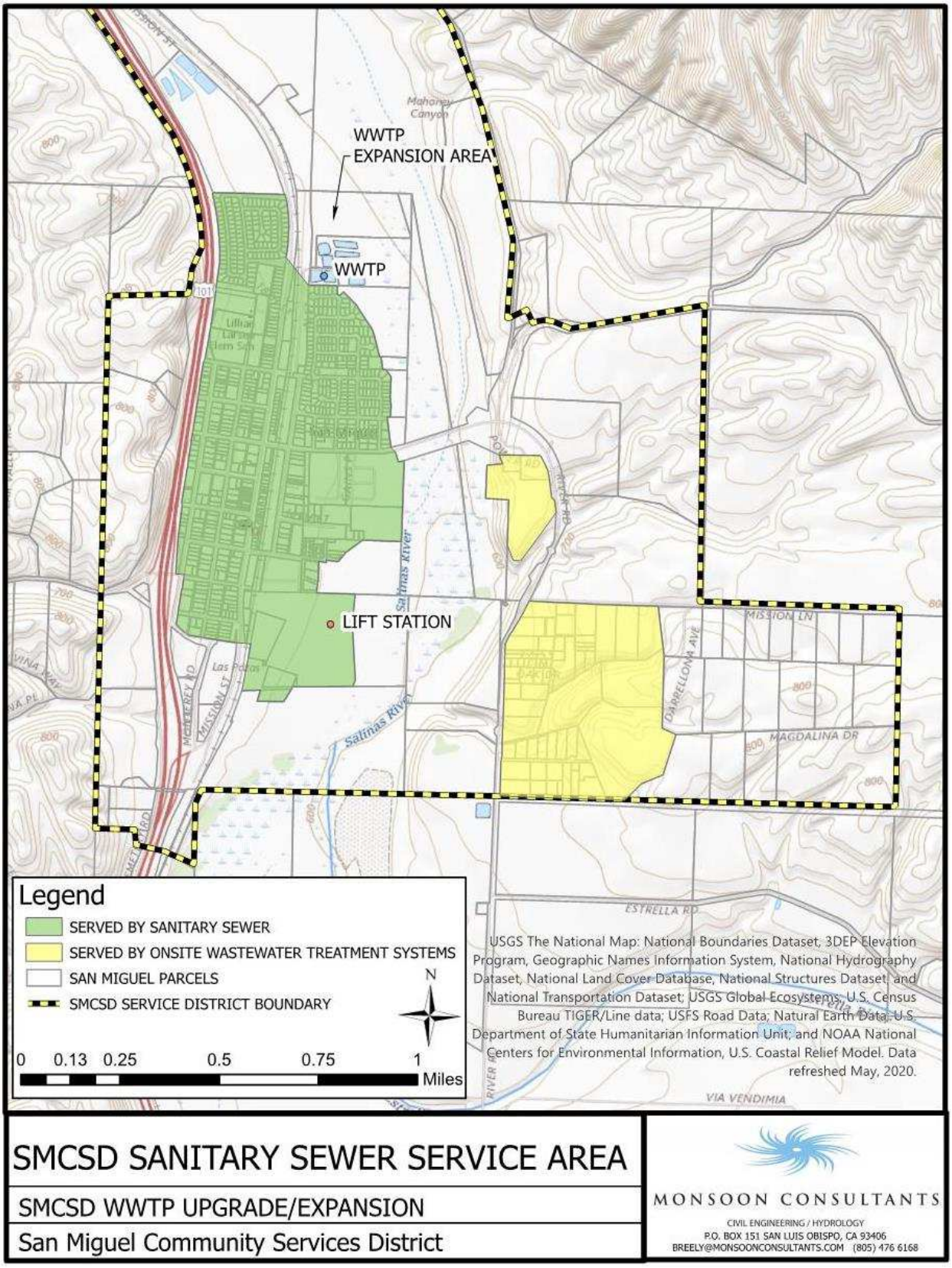


Figure 1.3. USGS Topographical Map with depiction of SMCSD Service Area

1b. Environmental Resources Present

The proposed project will consist of the upgrade and expansion of the SMCSD's WWTP and the construction of a new recycled water ("purple pipe") distribution system. This upgrade will eventually provide the SMCSD with the capacity to produce and convey a supply of high-quality effluent that will meet California Code of Regulations, Title 22, Division 4, Chapter 3 (Title 22) requirements for non-contact irrigation of vineyards, with a flow capacity of 0.5 Million Gallons per Day (MGD). All constructed improvements to the WWTP will be made on the existing site of the SMCSD's WWTP on property which is owned by the SMCSD. The project site does not have any existing environmental resources and there are no known "extraordinary circumstances" associated with the site. For the purposes of this report, "extraordinary circumstances" include unique situations presented by specific proposals, such as characteristics of the geographic area affected by the proposal, scientific controversy about the environmental effects of the proposal, uncertain effects or effects involving unique or unknown risks, and unresolved conflicts concerning alternate uses of available resources within the meaning of section 102(2)(E) of NEPA.

On February 27, 2020, the SMCSD issued a Request for Proposals (RFP) to solicit the services of a qualified consultant to assist the SMCSD with the following scope of work:

- Environmental evaluation of the project
- Self-Performance and/or coordination of all required technical studies
- Coordination with the SMCSD and other project consultants

On April 23, 2020, the Board approved a proposal from DUDEK to perform environmental consultation for the District in relation to the WWTF expansion & upgrade project. The scope of work to be provided by DUDEK includes producing the production of the following documents for use by the SMCSD:

- Final Environmental Document that meets CEQA (a requirement of the State Water Resources Board programs) and NEPA state and federal requirements
- All environmental permit and authorization applications identified for the Project
- All associated documents and submittals required to support both the Final Environmental Document and all environmental permit and authorization applications necessary to construct the project
- Provision of a crosswalk that verifies meeting all CEQA and NEPA requirements

It is anticipated this project may be partially financed through the California Clean Water State Revolving Fund Program (CWSRF) and other sources of state and/or federal funding. All environmental documentation must meet the requirements for state and federal funding.

The SMCSD will be the lead agency. CEQA and NEPA analysis of the project will be required. The SMCSD believes that the project may be ultimately classified as a "CE (categorical exclusion) with a report" for NEPA purposes. Additionally, the SMCSD anticipates that under CEQA, the final environmental document is anticipated to be a Mitigated Negative Declaration. All documentation required to meet environmental compliance for the CWSRF and the USDA Rural Development Water & Waste Disposal Loan & Grant

Program, shall be prepared, including the Environmental Package Checklists and the Evaluation Forms for Environmental Review and Federal Coordination.

To meet the compliance schedule set forth by the Regional Board, the SMCSD is planning to have the WWTP Upgrade & Expansion Project construction phase completed and the new facility operational by January 2022. To meet that schedule, the SMCSD intends to have the environmental resources related scope of work, including all environmental studies and NEPA/CEQA documentation for the SMCSD WWTP Upgrade & Expansion Phase of the project to be completed and ready for submittal to the appropriate agencies by November 30, 2020. The environmental studies and NEPA/CEQA documentation for the Recycled Water (Purple Pipe) Distribution System Phase of the project is planned to be completed by December 31, 2020.

A WWTP is considered a critical facility. Therefore, a flood risk assessment was performed, and the base flood elevation was determined for the proposed project area. The 500-year flood elevation is depicted in Figure 1.4. A detailed discussion of the flood risk assessment and base flood elevation determination is included in Appendix C.

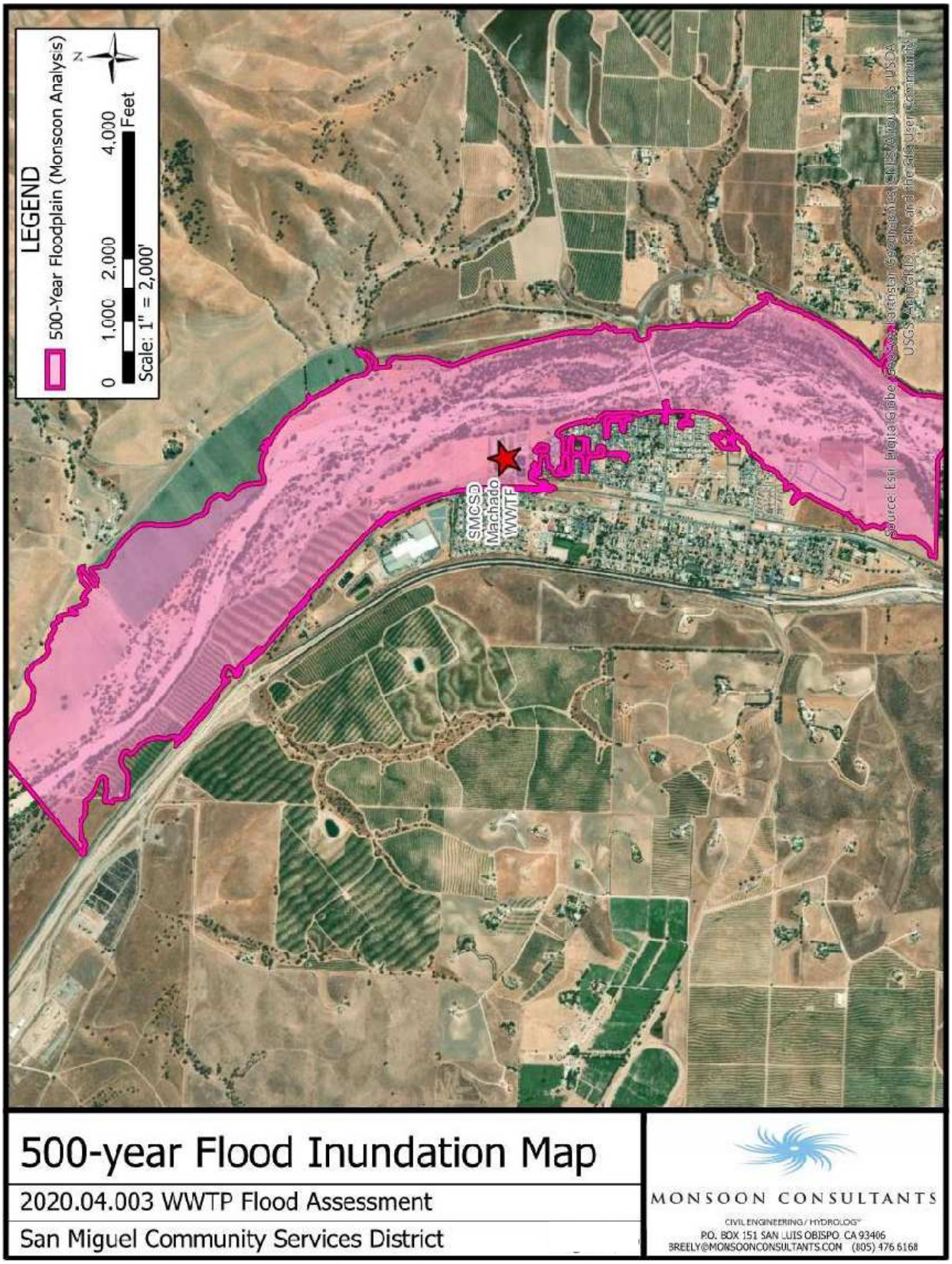


Figure 1.4. 500-year Flood Elevation

1c. Geography

The community of San Miguel is situated on two terraces overlooking the Salinas River, downstream from its confluence with the Estrella River. The community is defined on the west by Highway 101 and the steep hillside along the highway's western edge. The Salinas River runs along San Miguel's eastern side, although the community's URL extends east of the river to include the old landing strip site and a portion of the San Lawrence Terrace (SLT) development. The Union Pacific Railroad tracks run through the middle of town, almost equidistant from the highway and the river.

A graphical depiction is presented in Figure 1.5 which illustrates the topographic profile of San Miguel, which consists of two terraces connected by a steep slope. The upper terrace extends from Highway 101 to a point east of the alley between K and L Streets. The lower terrace extends from L Street to the Salinas River. The upper terrace has views of the hills east of the river.

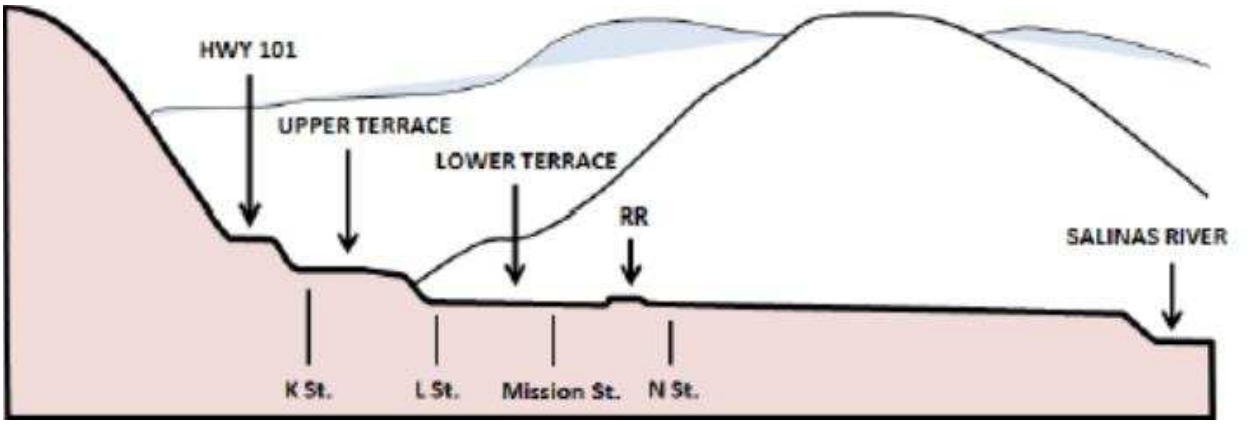
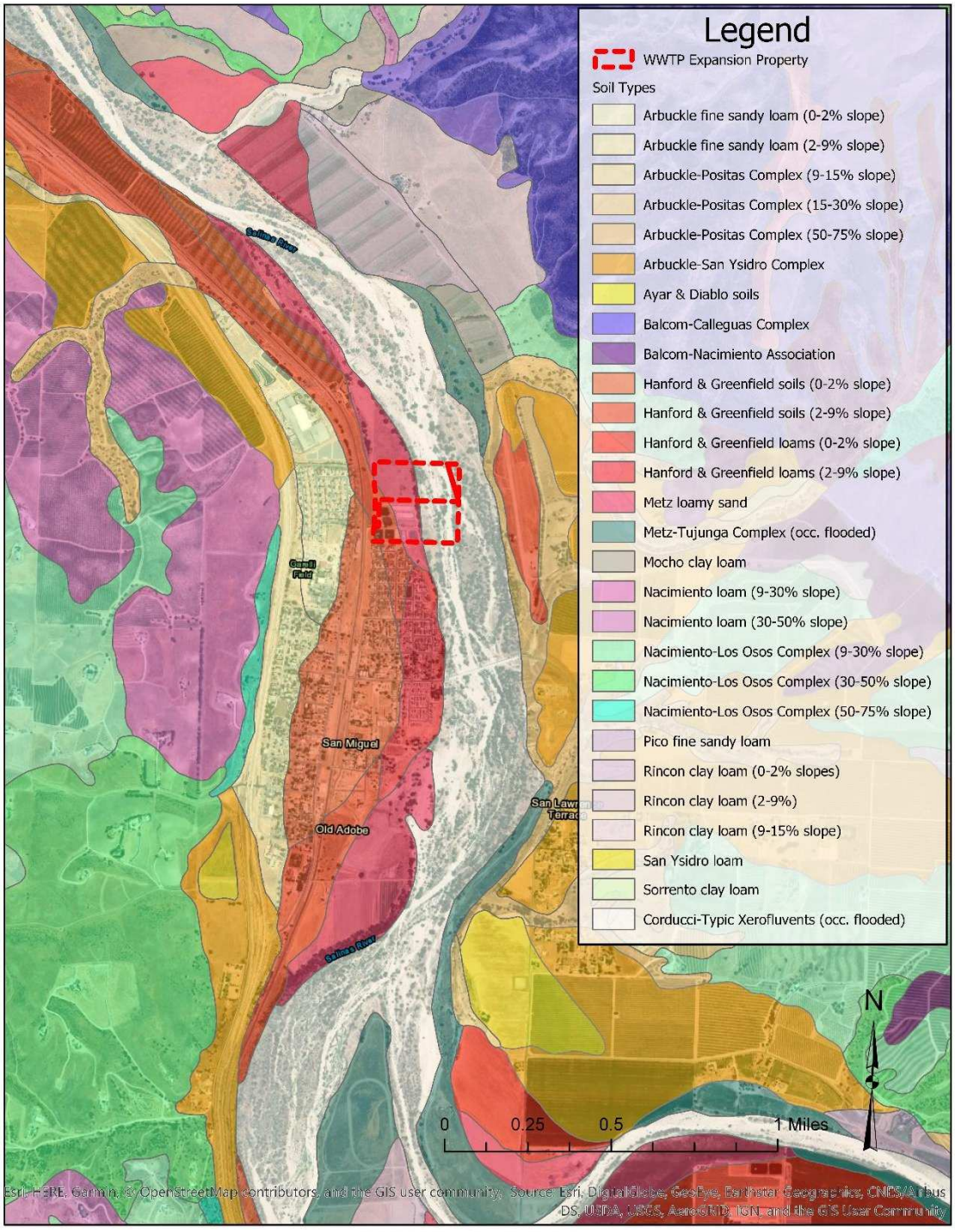


Figure 1.5. San Miguel Topographic Profile

1d. Soils/Geology

A review of the United States Department of Agriculture (USDA) Web-Based Soil Mapping web portal indicates that the WWTP site is underlain by floodplain and river channel deposits consisting of interbedded sand, gravel, silt, and clay sediments of varying thicknesses and consistencies. These deposits are typically no more than 50-100 feet thick. A graphical depiction of the soils which are present in the vicinity of the site is presented in Figure 1.6.



SOILS MAP

Figure 1.6. Soils Map

The Paso Robles Formation is the geologic formation that underlies the surficial soils in the project area and is derived from erosion of nearby mountain ranges. The Paso Robles Formation is a Plio-Pleistocene, predominantly non-marine geologic unit comprising relatively thin, often discontinuous sand and gravel layers interbedded with thicker layers of silt and clay. The formation was deposited in alluvial fan, flood plain, and lake depositional environments. The formation is typically unconsolidated and generally poorly sorted. The sand and gravel beds in the Paso Robles Formation have a high percentage of Monterey shale gravel and have lower permeability compared to the overlying alluvial unit. The formation also contains minor amounts of gypsum and woody coal.

The WWTP site is located within a seismically active area of Central California. Three active faults in proximity to the WWTP site are the Rinconada Fault (southwest), San Andreas Fault (east), and Hosgri-San Simeon Fault (west).

1e. Groundwater/Hydrology

A relatively shallow groundwater system is present in the project area which is associated with the Salinas River alluvial and flood plain deposits. Groundwater in these unconsolidated soils is typically encountered at a depth of about 15 to 25 feet beneath the WWTP property.

Deeper bedrock related groundwater supplies are present at greater depths which are associated with the Paso Robles Aquifer. Both shallow and deep aquifer zones have been delineated in the Paso Robles Formation. These aquifer zones generally correspond to the sand and gravel zones. Previous studies have suggested that the sand and gravel zones are generally thin, discontinuous, and are usually separated vertically by relatively thick zones of silts and clays. Depths to groundwater in the Paso Robles Aquifer are typically 60 to 100 feet below ground surface.

1f. Surface Water Hydrology

The SMCSD WWTP site includes four (4) separate parcels with a combined area of approximately 38.4 acres. The Salinas River is located along the eastern portion of the property which has a FEMA 100-year Zone A regulatory Special Flood Hazard Area (SFHA). Based on a review of the Effective FEMA FIRM flood maps (FIRM Panel Nos. 06079C0150G & 06079C0400G, Effective Date November 16, 2012), it was determined that a portion of the subject property lies within the 100-year Zone A SFHA, although none of the existing treatment plant facilities are located within the mapped floodplain. There is no Base Flood Elevation (BFE) associated with the Zone A SFHA and no hydraulic modeling was performed by FEMA to establish the location and limits of the existing Zone A SFHA. To assess the flooding risk potential and to determine the BFE, MONSOON performed a hydrologic and hydraulic analysis for the WWTP. The analysis is included as Appendix C to this report.

Based on the results of the analysis, MONSOON recommends that all future improvements and facilities that are made at the WWTP site be designed and constructed such that they are protected from flooding to a minimum 100-year BFE of 613-feet AMSL. New and renovated facilities can either be constructed above this elevation or be designed to be flood-proofed to this elevation. If the proposed WWTP upgrade

and expansion of the facility is designed and constructed to meet these criteria, the new WWTP will not be adversely impacted from flood levels which are associated with a flood event with a 1% probability of occurrence.

1g. Population Trends

The 2013 San Miguel Community Plan includes a proposal to expand the URL to encompass an approximately 50-acre portion of the former landing strip property located between Indian Valley Road and the Salinas River. This plan also expands the URL to include roughly 110 acres located north of 20th Street, generally between Mission Street and the Salinas River. This area is intended to remain in agricultural use as a "holding zone" until access problems are resolved, and the appropriate amount and type of urban development is determined through a future amendment to the Community Plan.

San Miguel's population, based on the 2010 U.S. Census, was 2,336, with a median household income of $42,176, which agrees with USDA data and methodology. This qualifies the District for a maximum grant-eligibility of 45% of total project costs. The 2010 Census population of 2,336 represents an increase of 64.5 percent from 2000, and a compounded annual growth rate (CAGR) of 5.1 percent. The growth in San Miguel between 2000 and 2010 can largely be attributed to the development of two residential projects on the north end of the community. In 2020, the population was estimated to be approximately 2,821. In the previous decade between 1990 and 2000, San Miguel's population grew less rapidly, with an increase of 26.4 percent (2.4 percent CAGR). In comparison, San Luis Obispo County's population increased 13.5 percent between 2000 and 2010 and 14 percent between 1990 and 2000.

In the 2013 San Miguel Community Plan, San Miguel's annual growth rate was projected to be about 1.8 percent (CAGR) from 2010 through 2035, resulting in a future population of approximately 3,660. Table 1.1 presented below shows the Community Plan population projections for San Miguel. Based on the Community Plan, the projected development in the URL could result in 417 additional dwelling units between 2010 and 2035. The projected population is based on 3.17 persons per household.

Table 1.1. Population Trends in San Miguel

Year	Total Population	Percent Increase[1]	Annual Growth Rate (CAGR)[2]
1990	1,123	----	----
2000	1,420	26%	2.4%
2010[3]	2,336	65%	5.1%
2035	3,658	57%	1.8%

Notes:

[1]The percentage increase in population during the 10-year period ending at the year indicated in that row.

[2]The compound annual growth rate during the 10-year period ending at the year indicated in that row.

[3]The 2010 population has been adjusted from the information provided by the 2010 Census because the Census Designated Place (CDP) for San Miguel is slightly different than the San Miguel URL.

The population projections discussed above were compared to population projections using only U.S. Census data. Based on the Census data, the CAGR from 2000 to 2020 was approximately 3.5%. If the growth rate remains the same, the 2040 population would be 5,604.

A supplemental analysis was performed by Monsoon in collaboration with SMCSD staff, based on the development probability of parcels that could be serviced by SMCSD water and/or wastewater utilities in the future. Based on the results of this analysis, the SMCSD could be servicing a population of 5,331 by 2035, 5,720 by 2040, and 6,574 by 2050. After 2050, San Miguel could expand to a population of 11,793, however, the District is not planning infrastructure improvements in anticipation of this post-2050 growth. Additional information about the future development projection analysis can be found in Appendix D.

1h. Community Engagement

The SMCSD recognizes that the proposed SMCSD WWTP Upgrade & Expansion and Recycled Water (Purple Pipe) Distribution System will be a major commitment and investment on the part of the residents of San Miguel. With this understanding, the SMCSD has made significant efforts to engage the community throughout the planning phase of the project to help the community develop and understanding of the need for the project, the utility operational service levels required, funding and revenue strategies to meet these requirements, along with other considerations. Examples of the SMCSD's community engagement include the following:

- Project Status Reports have been provided to the SMCSD Board members and the public at all monthly board meetings since January 2019. These Board meetings are open to the public and members of the public are encouraged to provide input and concerns to the Board and SMCSD staff.
- November 2017: A presentation was made to the SMCSD Board members and members of the public regarding the completion of the SMCSD Water & Wastewater Masterplan which included recommendations for the WWTP Upgrade & Expansion Project.
- July 2018: A presentation was made to the SMCSD Board members and members of the public regarding the completion of the Water & Wastewater Rate Study which included financial planning provisions for the WWTP Upgrade & Expansion Project.
- April-May 2018: The SMCSD implemented a Prop 218 process for the purpose of proposing a water & wastewater rate increase to the SMCSD rate payers. There were numerous public hearings that were held in conjunction with this process and all the hearings were well attended by the public. The public supported the proposed rate increases and the SMCSD Board adopted increased water & wastewater rates in July 2018.
- January 2019: A presentation was made to the SMCSD Board members and members of the public regarding the completion of the Engineering Study which included an alternatives analysis and recommendations for the WWTP Upgrade & Expansion Project.
- January 2020: A presentation was made to the Mission Meadows HOA Board members and members of the public regarding the plans for the WWTP Upgrade & Expansion Project. The

Mission Meadows is the residential neighborhood which is the closest in proximity to the WWTP Upgrade & Expansion Project.

2 EXISTING FACILITIES

A description of the existing SMCSD WWTP and an evaluation of historical wastewater flows and loads are presented in the following sections of this report. In addition, the flows and loads that are projected for the 30-year planning period are presented.

Graphical depiction of the general service areas and facility locations are presented in Figures 1.2 and 1.3. As depicted in the Figures, only the main area of the San Miguel community (i.e. that portion of the SMCSD service area that is located on the west side of the Salinas River) is currently served by sanitary sewer collection and WWTP infrastructure. The parcels within the SMCSD service area which are located on the east side of the Salinas River are currently served by on-site wastewater treatment systems (OWTS).

In the main zone (i.e. west side of the Salinas River), there are currently six (6) OWTS. On the east side of the Salinas River, in an area designated the San Lawrence Terrace (SLT), there are a total of sixty-five (65) OWTS. There are provisions to accommodate a carrier pipe for a new sanitary sewer in the River Road bridge crossing of the Salinas River, should the need arise in the future. As for the six (6) OWTS systems in the main zone, it is planned that these will be served by the existing sanitary sewer collection system in the future.

2a. Facilities Layout Map

The existing wastewater treatment plant (WWTP) is situated on a tract of land comprising approximately 17 acres. The facility underwent a significant upgrade in the late 1990s, bringing its current and permitted capacity to 200,000 GPD (0.2 MGD). The current WWTP comprises four (4) partially mixed aerated lagoons in series (though the first two lagoons are piped to also operate in parallel) and three (3) percolation ponds. A graphical depiction of the WWTP is presented in Figure 2.1.

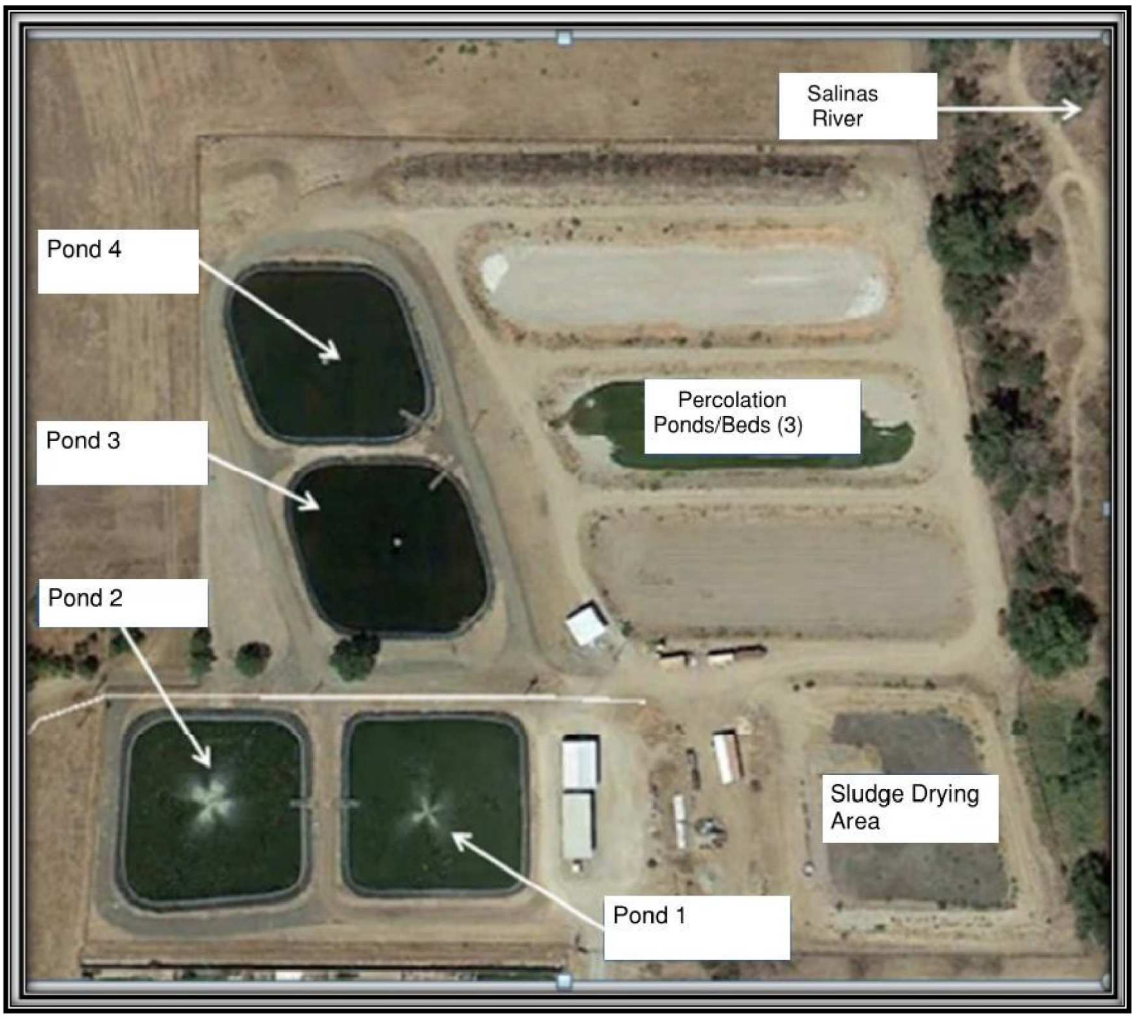


Figure 2.1. Current San Miguel WWTP

2b. History

The existing aerated pond WWTP was originally constructed in 1985 and replaced the conventional activated sludge facility that was built in the 1940's. The permitting for the WWTP has been delegated to the Central Coast Regional Water Quality Control Board (Regional Board). The WWTP is currently operating under WDR Order No. 99-046. At the time that the WDR was issued, it was issued to the San Miguel Sanitary District, which was dissolved in the early 2000s, and subsequently the SMCSD resumed all wastewater responsibilities in the SMCSD service area.

Since its original construction, the WWTP was expanded in 2000, during which time the primary treatment pond Nos. 1 & 2 were constructed. Subsequent improvements and modifications to the WWTP have occurred since 2000 and these are summarized in Table 2.1. The year of construction, year of renovation or expansion, and the year or removal from service are indicated in the table.

Table 2.1. Summary of Major Existing Elements of SMCSD WWTP

System Component and Sub-Components	Year Constructed*	Year Renovated or Expanded*	Year Removed from Service
Headworks	N/A	N/A	N/A
2 each Aerated Treatment Ponds (Stage 1)	2000	N/A	N/A
20 hp Aerator Pump	2000	N/A	N/A
25 hp Aerator pump	2000	2020	N/A
1 each Aerated Treatment Ponds (Stage 2)	1985	2000	N/A
7.5 hp Aerator pump	1985	2014	N/A
1 each Aerated Treatment Ponds (Stage 3)	1985	2000	N/A
7.5 hp Aerator pump	1985	1995	N/A
3 each Percolation Ponds	1985	2 of 3 in 2008	N/A
Lift Station	1985	N/A	N/A
Plant Electrical and Controls	1985	2000	N/A
Maintenance/Shop Facility	2006	2008	N/A

*Dates are approximate

2c. Condition of Existing Facilities

The major elements which comprise the SMCSD WWTP are summarized as follows:

- Headworks: At this time, there is not a headworks associated with this plant, only influent pumping/metering of wastewater. Raw wastewater is pumped from the influent wet well/lift station to the first aerated treatment pond.

- Aerated Treatment Ponds, Stage 1: There are two 0.94 MG aerated aerobic ponds, equipped with 25 and 20 horsepower (HP) pumps, respectively. These are completely mixed aerated lagoons. Thus, the floating aerators keep all solids in suspension while maintaining dissolved oxygen levels. Solids do not appreciably deposit in Ponds 1 and 2, but instead settle out predominantly in Pond 3. Floatable plastics and debris must be raked out of these ponds by hand.

- Aerated Treatment Ponds, Stage 2: There is a single 0.87 MG Stage 2 pond, with a 7.5 HP aerator. This pond and floating aerators maintain dissolved oxygen levels in the pond, while allowing solids to settle to the bottom of the pond. Solids settle to the bottom of the pond, and organic matter in the sludge slowly decomposes anaerobically. This pond is generally referred to as a facultative pond, with an upper aerobic zone and lower anaerobic zone.

- Aerated Treatment Ponds, Stage 3: There is a single 0.87 MG Stage 3 pond equipped with a 7.5 HP aerator. This is the final (fourth) pond that also maintains dissolved oxygen levels in the upper

zone. Very little sludge settles in this pond, and this pond is considered a final polishing pond prior to discharge to the percolation ponds/beds.

- Percolation Ponds: There are three (3) percolation ponds totaling 1.7 acres in area. The two northernmost ponds were re-conditioned in 2008. At that time, both ponds had silted up considerably, and were not effectively percolating effluent. Both ponds were dried out and ripped, and the upper several feet of material were removed, and replaced with clean sand. In addition, the percolation ponds were deep-ripped in several locations to allow for better connectivity to the underlying more permeable soils. The third and southernmost pond was not re-worked at that time but continues to serve as a percolation pond.

- Biosolids Disposal: Although some biosolids accumulate in each of the aerated treatment ponds, the majority accumulates in Pond 3. When deemed appropriate by the WWTP operations staff, the biosolids are pumped from Pond 3 to the existing sludge drying basin. After drying and stabilization, the biosolids are transported to a local landfill for disposal.

Additionally, the existing facility components, coupled with their current design parameter capacities, are provided in Table 2.2.

Table 2.2. SMCSD WWTP Summary Data

Parameter, units	Value
FLOWS	
Average Daily Flow (ADF) MGD	0.15
Maximum Day Dry Weather Flow (MDDWF), MGD	0.19
Peak Hourly Flow (PHF), MGD	0.53
WASTE STRENGTH AND LOADING	
Influent BOD_5, mg/L (design) [lbs/day]	300 [500]
Influent TSS, mg/L (design) [lbs/day]	250 [417]
INFLUENT LIFT STATION	
Pump Type	Submersible
No. of Pumps	2
Pump Horsepower (HP), each	7.5
Capacity, Each Pump, GPM	300
Total Dynamic Head, TDH, feet	17
TREATMENT PONDS	
Stage 1 (2 ponds):	
Surface Area, Acres, each	0.44
Depth, Feet, each	12
Volume, Million Gallons, each	0.94
Hydraulic Retention Time, Days, each	4.7
Aerator Horsepower, HP	25, 20
Stage 2:	
Surface Area, Acres	0.41
Depth, Feet	10
Volume, Million Gallons	0.87
Hydraulic Retention Time, Days	4.4
Aerator Horsepower, HP	7.5
Stage 3:	
Surface Area, Acres	0.41
Depth, Feet	10
Volume, Million Gallons	0.87
Hydraulic Retention Time, Days	4.4
Aerator Horsepower, HP	7.5
EFFLUENT PERCOLATION/DISPOSAL	
Pond 1:	
Surface Area, SF (acres)	26,500 (0.61)
Pond 2:	
Surface Area, SF (acres)	24,200 (0.56)
Pond 3:	
Surface Area, SF (acres)	23,200 (0.53)

An influent analysis was performed to provide a basis of understanding for the need to renovate/increase capacity of the existing SMCSD WWTP.

Under the existing permit, the SMCSD WWTP is not required to monitor, and therefore has no historic record of, influent domestic wastewater constituents. Only effluent constituents, including effluent pH, BOD_5, TDS, Sodium, Sulfate, Boron, Nitrate, Total Nitrogen and Chlorides are reported. A summary of the available data pertaining to influent and effluent loading for the existing WWTP is summarized in the following sections of this document. The data and historic trends in the measured parameters are graphically depicted in Appendix E. A review of the available historic quarterly effluent quality data collected from the WWTP between 2008 and present day confirms that the existing WWTP effluent has consistently been out of compliance, with TDS, sodium, and chloride levels exceeding permit limits. These results align with the findings of the Regional Board, as indicated in their letter dated June 18, 2018 (Appendix B).

WWTP Influent Wastewater Sampling

To develop an understanding of the WWTP influent chemistry, SMCSD staff performed a 9-week sampling program between October and December 2017 to characterize the WWTP influent. The sampling plan included the collection of one 24-hour composite sample and multiple grab samples. The samples were tested for dissolved oxygen (DO), pH, temperature, BOD_5, carbonaceous biological oxygen demand (cBOD), TSS, and nitrogen constituents including ammonia, nitrate, and Total Kjeldahl Nitrogen (TKN). A summary of the WWTP influent quality is summarized in Table 2.3.

Table 2.3. SMCSD WWTP Influent Quality Parameters

Date	Estimated ADF (MGD)	BOD_5, mg/L	BOD_5, (lb/day)	TSS (mg/L)	TSS, (lb/day)	Ammonia(N), (mg/L)	Ammonia(N), (lb/day)
10/23/2017	0.150	261	327	46	58	66	83
10/30/2017	0.153	328	419	60	77	64	82
11/7/2017	0.175	278	407	170	249	57	83
11/13/2017	0.135	181	203	150	168	54	61
11/20/2017	0.151	366	460	143	180	45	57
11/27/2017	0.156	319	415	113	147	62	81
12/4/2017	0.157	359	471	94	123	44	58
12/11/2017	0.151	1350	1703	300	378	75	95
12/19/2017	0.172	471	677	90	129	52	75
AVERAGE	**0.156**	**320**	**422**	**151**	**196**	**58**	**75**
* suspect result, not included in average of tested time period							

Additional Influent Wastewater Testing Including Courtside Cellars Wastewater

Upon review of the 2017 WWTP influent/loading data, it was determined that there were data gaps that needed to be addressed. Specifically, the 2017 influent chemistry data was lacking adequate information regarding specific inorganics, metals, nitrogen species, and various other chemical constituents that are important for consideration in the planning and design phases for the future WWTP expansion/upgrade. To address these data gaps, SMCSD staff implemented a supplemental influent sampling program, which

was initiated in November 2018. The supplemental influent sampling program included the collection of one 24-hour composite sample and multiple grab samples from both the influent to the SMCSD WWTP and the untreated process wastewater discharge from the Courtside Cellars winery which is owned and operated by E & J Gallo Winery and is close to the SMCSD's WWTP. Although the Courtside Cellars facility currently treats its own process wastewater in a series of aerated ponds located on their property, the SMCSD and Gallo have discussed the possibility of the SMCSD accepting and treating the Courtside Cellars' process wastewater in the future. For this reason, the Courtside Cellars process wastewater flows were also analyzed. Copies of the laboratory analytical results are included in Appendix F.

Based on a review of the 2018 influent sampling results, the wastewater entering the SMCSD WWTP can be characterized between medium and high strength. The BOD_5 values decreased from 391 to 271 mg/L and the TSS values decreased from 450 to 380 mg/L between the November and December 2018 sampling events. In contrast, the TDS concentrations increased from 840 to 900 mg/L and the total nitrogen concentration increased from 80 to 105 mg/L during the same period. During the same two month period, the process wastewater discharged from the Courtside Cellars winery contained BOD_5 values that decreased from 2200 to 980 mg/L, TSS values that decreased from 120 to 28 mg/L, TDS concentrations that decreased from 2310 to 1410 mg/L, and a total nitrogen that decreased from 16.1 to 10.9 mg/L. The overall decrease in loading concentrations for several of the key design influent design parameters from the Courtside Cellars process wastewater discharge is related to the wine harvest and crush operations that were decreasing between the November and December sampling events. A summary of the November and December sampling results are presented in Table 2.4. Table 2.5 includes the estimated blended concentrations for a combined influent, in the event that the Courtside Cellars process wastewater stream is conveyed to the SMCSD's WWTP headworks for treatment in the future. It should be noted that based on discussions with Courtside Cellars operations staff, it is understood that during the periods when wine grape harvesting and crushing occurs (i.e. August - November), the average daily flows are approximately 60,000 GPD, whereas during the remainder of the year the facility discharges approximately 30,000 GPD.

Table 2.4. November and December Gallo plus SMCSD WWTP Influent Sampling Results

CURRENT CONDITIONS (BASED ON INFLUENT SAMPLING DONE ON NOVEMBER 6TH, 2018 AND DECEMBER 4TH, 2018)					
PARMETERS	**Unit**	**SMCSD WWTP INFLUENT (NOV)**	**SMCSD WWTP INFLUENT (DEC)**	**GALLO COURTSIDE CELLARS INFLUENT (NOV)**	**GALLO COURTSIDE CELLARS INFLUENT (DEC)**
Arsenic	mg/L	0.003	ND	0.01	0.004
Boron	mg/L	0.543	0.474	0.568	0.516
Copper	mg/L	0.045	0.06	0.033	0.024
Total Hardness as CaCO3	mg/L	326	283	554	632
Calcium	mg/L	53	46	95	113
Magnesium	mg/L	47	41	77	85
Iron	mg/L	0.29	0.33	0.68	0.53
Lead	mg/L	0.0009	0.001	0.001	0.0008
Manganese	mg/L	0.0219	0.0248	0.0326	0.0156
Potassium	mg/L	20	20	51	20
Sodium Adsorption Ratio	"--"	3.6	3.7	4	2.6
Sodium	mg/L	148	145	218	150
Ammonia Nitrogen	mg/L	74	85	0.7	0.3
Alkalinity (as CaCO3)	mg/L	520	620	310	450
Bicarbonate	mg/L	640	760	380	550
Carbonate	mg/L	ND	ND	ND	ND
Hydroxide	mg/L	ND	ND	ND	ND
BOD	mg/L	391	271	2200	980
Chloride	mg/L	132	145	160	198
Specific Conductance	Ds/m	1.79	2.04	1.99	1.93
Nitrate Nitrogen	mg/L	0	0	5.6	6.1
Nitrogen, Total as Nitrogen	mg/L	80	105	16.1	10.9
Nitrate + Nitrite as N	mg/L	ND	ND	5.6	6.1
Kjeldahl Nitrogen	mg/L	80	105	10.5	4.8
pH	mg/L	7.6	7.7	6.1	6.5
Phosphorous, Total	mg/L	14	15	12	3
TDS	mg/L	840	900	2310	1410
TSS	mg/L	450	380	120	28
Sulfate	mg/L	135	153	290	268
Turbidity	NTU	63	41.9	29.4	10.7
CBOD	mg/L	241	235	2900	1120
ND = Non-Detected					

Table 2.5. Combined Conditions Sampling Results

CURRENT CONDITIONS (BASED ON INFLUENT SAMPLING DONE ON NOVEMBER 6TH, 2018)				Degree of Restriction for Crop Irrigation		
PARMETERS	Unit	Combined AUG-Nov (240,000 GPD)	Combined DEC - JULY (210,000 GPD)	None	Slight to Moderate	Severe
Arsenic	mg/L	0.005	0.004		0-.2	
Boron	mg/L	0.549	0.547		0-2	
Copper	mg/L	0.042	0.043		0-.2	
Total Hardness as CaCO3	mg/L	383.000	358.571		0-200	
Calcium	mg/L	63.500	59.000		0-400	
Magnesium	mg/L	54.500	51.286		0-60	
Iron	mg/L	0.388	0.346		*0.5-1.5	
Lead	mg/L	0.001	0.001		*<0.01	
Manganese	mg/L	0.025	0.023		0-0.5	
Potassium	mg/L	27.750	24.429		0-2	
Sodium Adsorption Ratio	"--"	3.700	3.657	>1.2	1.2-0.3	<0.3
Sodium	mg/L	165.500	158.000	<69	69-207	
				<69	>69	
Ammonia Nitrogen	mg/L	55.675	63.529		0-5	
Alkalinity (as CaCO3)	mg/L	467.500	490.000		0-200	
Bicarbonate	mg/L	575.000	602.857	<91.5	91.5-519	>519
Carbonate	mg/L	0.000	0.000		0-3	
Hydroxide	mg/L	0.000	0.000		0-.1	
BOD	mg/L	843.250	649.429	NO LIMIT		
Chloride	mg/L	139.000	136.000	<142	142-355	>355
				<106.5	>106.5	
Specific Conductance	Ds/m	1.840	1.819	<0.7	0.7-3.0	>3.0
Nitrate Nitrogen	mg/L	1.400	0.800		0-10	
Nitrogen, Total as Nitrogen	mg/L	64.025	70.871		0-30	
Nitrate + Nitrite as N	mg/L	1.400	0.800		0-10	
Kjeldahl Nitrogen	mg/L	62.625	70.071		0-10	
pH	mg/L	7.225	7.386	Normal Range 6.5-8.4		
Phosphorous, Total	mg/L	13.500	13.714		0-2	
TDS	mg/L	1207.500	1050.000	<450	450-2000	>2000
TSS	mg/L	367.500	402.857	NO LIMIT		
Sulfate	mg/L	173.750	157.143		0-300	
Turbidity	NTU	54.600	58.200	NO LIMIT		
CBOD	mg/L	905.750	620.857	NO LIMIT		

Current Effluent Quality Compliance

While the current WWTP facilities meet the average daily influent demand of the SMCSD, it is has been noted by the Regional Board that (1) "…the current wastewater treatment plant will reach capacity (200,000 gallons per day) in less than 3 years…), and (2) "…your facility is chronically out of compliance with [WDR Order No. 99-046] permit limits for total dissolved solids, chloride, and sodium." The Regional Board findings are in line with those described in this Preliminary Engineering Report.

Sanitary Sewer Salt Loading

In September 2019, MONSOON collected and analyzed samples from the sanitary sewer collection system to determine the presence and relative distribution of identified salt concentrations throughout the SMCSD sanitary sewer system. These samples were taken from seven (7) contributing areas within the District. The goal of the sampling program was to help identify the source and movement of salts within

the SMCSD sanitary sewer system and pinpoint any sources of elevated levels of salt concentration, if any, that pass into the WWTP. The samples were collected by FGL Environmental for the following constituents at each manhole:

- Sodium
- Chloride
- Total Dissolved Solids (TDS)
- Sulfate

The results of this analysis are summarized in Appendix G. Based on the results of this study, MONSOON concludes that the high salt levels found in the SMCSD could be coming from residential areas. These high salt levels are then diluted by the commercial facilities located near the center of town as the sewage maneuvers towards the WWTP.

The District does not treat the drinking water supply with water softening devices, however, many homeowners have installed water softening units. The 2019 SMCSD Wastewater Code lists the following requirements for water softening units:

1. High-efficiency reverse osmosis units do not generate salt and are the best technology available for water softening and are recommended for use in the District.
2. Commercial and/or Industrial Users are prohibited from using self-generating water softeners that discharge to the District POTW.
3. New residential housing and replacement water softener units shall meet the following requirements:
    a. On-site regeneration water softener units must be equipped with salt efficiency controls to regenerate on hardness demand or other approved techniques.
    b. Salt efficiency control units shall be a sealed tamper-proof type that controls the most efficient regeneration setting or a portable exchange unit.

It is possible that some pre-existing units that generate salt are in use, but those units would be counter to the requirements of the above Wastewater Code.

Groundwater Quality Compliance

MONSOON performed a study to assess the potential impact to groundwater quality that may be occurring from historical and current operations from the existing WWTP. The analysis is included as Appendix H to this report. Under existing operations, treated effluent from the aerated treatment pond facility is discharged into percolation basins from which the effluent migrates downward into the alluvial deposits that are associated with the Salinas River.

Based on the results of the analysis, it appears that there is a localized impact to the groundwater present in the shallow alluvial aquifer which underlies the WWTP property. The groundwater concentrations are elevated for TDS, nitrate, sodium, and chloride, when compared to the SMCSD's water supply. It is further

concluded that the concentration of these constituents which are present in the shallow alluvial aquifer exceed the effluent quality limits set forth in the Regional Board WDR Order No. 99-046. It is recommended that this condition be considered during the planning and design phases of the SMCSD WWTP Upgrade & Expansion project and that an alternative to effluent percolation to the Salinas River alluvial deposits be considered as the primary method of effluent disposal.

There is no existing compliance issue with the SGMA. However, the current effluent concentrations exceed the groundwater objectives specified in Table 3-6 of the Water Quality Control Plan for the Central Coast Basin (Basin Plan). The median groundwater objectives for the Paso Robles Area, San Miguel are as follows:

- TDS: 750 mg/L
- Chlorine: 100 mg/L
- Sulfate: 175 mg/L
- Boron: 0.5 mg/L
- Sodium: 105 mg/L
- Nitrogen: 4.5 mg/L

Additionally, the current effluent salt levels exceed the goals set forth in the Paso Robles Subbasin GSP. The GSP also includes the San Miguel WWTP upgrade as one of six (6) reasonable projects that could help achieve groundwater sustainability throughout the subbasin by providing recycled water that would be used for irrigation and would offset groundwater pumping.

2d. Financial Status of Existing Facilities

The SMCSD completed a water and wastewater rate study in 2018. Based on the results of the rate study, a Prop 218 process was implemented which resulted in the SMCSD adopting new water and wastewater rates in 2018. For Fiscal Year 2019-2020, the following water and wastewater monthly rates apply.

Table 2.6. SMCSD Water & Wastewater Rates (FY 2019-2020)

Wastewater Monthly Rates

	FY 19-20
Single-Family Residential	
Fixed	$89.77
Multi-Family Residential	
Fixed (per unit)	$56.10
Commercial	
Fixed Charge	$67.55
Volumetric (Per CCF of Water Billed)	
Low Strength	$5.32
Medium Strength	$6.03
High Strength	$9.09
Lift Station Charges	
River Zone Charge	$24.05

Water Monthly Fixed Rates

All Customers	**FY 19-20**
Meter Size	
5/8"	$48.10
¾"	$48.10
1"	$48.10
1 ½"	$80.05
2"	$118.39
6"	$655.15

Volumetric Rates	**FY 19-20**
Single-Family Residential	
Tier Structure	
Tier 1 (0-5 CCF)	$0.00
Tier 2 (6-12 CCF)	$4.31
Tier 3 (>12 CCF)	$7.21
Non-Residential	
Tier Structure	
Tier 1 (0-5 CCF)	$0.00
Tier 2 (>6 CCF)	$5.01

In March 2020, the SMCSD was providing service to 900 water and 782 wastewater connections (14 business, 742 single family residential, 25 multi-family residential). San Miguel has a total of 809 equivalent dwelling units (EDUs). The average monthly revenue which was generated from the wastewater enterprise was approximately $1,361,000. Wastewater-related expenses for the same period were estimated to be approximately $1,143,000.

A breakdown of the current (2020-2021) budgeted operation and maintenance costs for the wastewater system is provided in Table 2.7 below.

Table 2.7. Existing Wastewater System Operation and Maintenance Costs (FY 2020-2021)

O&M Cost	$/Year
Personnel	$246,020.00
Administrative (Fees, permits, etc.)	$100,000.00
Water Purchase of Water Treatment	N/A
Insurance	$ 46,927.00
Energy (Fuel and/or Electrical)	$ 50,000.00
Process Chemicals	N/A
Monitoring and Testing	$ 12,000.00
Professional Services	$ 60,647.00
Residual Disposal	$ 10,000.00
Miscellaneous/Maintenance	$ 75,000.00
Total	$600,594.00

The SMCSD's wastewater enterprise fund does not currently have any debt. The water enterprise fund has an outstanding debt of $1,084,516 which is for a water storage tank that was constructed in 2008. The SMCSD has no other outstanding debt.

2e. Water/Energy/Waste Audits

SMCSD staff perform monthly comparisons (i.e. audits) between the volume of water supplied to the water distribution system and the total amount of water delivered to customers through metered connections. A review of the results of this monthly data for the previous 36-months indicate that during this period, approximately 12 percent of total water production occurred as unbilled use, which is generally referred to as "non-revenue water." Non-revenue water should be minimized where possible since it requires the SMCSD resources to produce but does not generate revenue. From July 2019 to June 2020, the SMCSD produced approximately 13.2 MGAL of non-revenue water.

In 2015, Pacific Gas and Electric Company (PG&E) sponsored an Integrated Energy Audit for the San Miguel Community Services District (SMCSD) in San Miguel, CA. The goal of the PG&E Integrated Energy Audit was to provide the SMCSD with an Energy Action Plan, which identifies and prioritizes potential energy and demand savings from the following kinds of opportunities:

- Energy conservation
- Energy efficiency (including retro-commissioning)
- Time-of-use management (load shifting)
- Demand response
- Self-generation.

The study was conducted by kW Engineering, in collaboration with PG&E, as part of a comprehensive effort to assist the SMCSD in controlling energy costs and protecting the environment by evaluating the feasibility of implementing a full spectrum of energy management options. Based on the results of the

study, PG&E recommended replacing the mechanical surface aerators with a submerged aeration system using fine pore bubble diffusers. Fine pore bubble diffusers generate small air bubbles (< 5 mm), which increases the interfacial area between water and the oxygen molecules in air. The increase in interfacial area of smaller bubbles, compared to using the mechanical aerators to break-up the pond surface to aerate, results in significantly higher oxygen transfer rates. Increasing the oxygen transfer rate reduces the amount influent that can be treated while reducing the amount of motor power required to aerate.

3 NEED FOR PROJECT

The existing WWTP comprises four (4) partially mixed aerated lagoons in series and three (3) percolation ponds and has a permitted treatment capacity to 200,000 GPD (0.2 MGD). The SMCSD currently treats an average of approximately 150,000 GPD, with occasional daily flow volumes which exceed the treatment capacity of the plant. The SMCSD acknowledges that the existing WWTP is nearing capacity and requires an expansion and upgrade.

In June 2018, the Central Coast Regional Water Quality Control Board (Regional Board) issued a letter to the SMCSD in which they informed the SMCSD that they should proceed immediately with the planning and engineering for the expansion of the existing WWTP. In the referenced letter, the Regional Board stated that because the existing WWTP has been chronically out of compliance with permit limits for total dissolved solids, chloride, and sodium, the SMCSD should consider including salt and nitrogen removal capability in the expansion plans.

In addition to the expanded and enhanced treatment capacity that the SMCSD needs to achieve compliance with the current Regional Board WDR Order No. 99-046 and as a consequence of continued population growth within the SMCSD boundaries, the SMCSD Board of Directors also understands that the expansion and upgrade of the WWTP must also be accomplished in a manner which is compatible with the requirements of SGMA, including the Paso Robles GSP, which was adopted in November 2019. For these reasons, the SMCSD is planning to install treatment facilities to provide recycled effluent which meets the Title 22 requirements for agricultural irrigation.

3a. Health, Sanitation, and Security

While the current WWTP facilities meet the average daily influent demand of the SMCSD, it is has been noted by the Regional Board that (1) "…the current wastewater treatment plant will reach capacity (200,000 gallons per day) in less than 3 years…), and (2) "…your facility is chronically out of compliance with [WDR Order No. 99-046] permit limits for total dissolved solids, chloride, and sodium." The Regional Board findings are in line with those described in this Preliminary Engineering Report.

Current Effluent Quality

Based on a review of the effluent sampling results, the wastewater entering the San Miguel WWTP can be characterized as wastewater between medium and high strength. Wastewater strength typically

increases with water conservation efforts, which may indicate why the plant is receiving higher strength wastewater than in years past.

The BOD_5, TSS, and ammonia removal rates through the WWTP were calculated from the sampling results and are shown in Table 3.1. Based on the sampling results, the WWTP cannot consistently meet a BOD_5 and TSS limit of 30/30 mg/L, which is the minimum treatment limit under future permit requirements. Also, the sampling results show the plant has an average 89% BOD_5 removal rate and average BOD_5 effluent of 38 mg/L. The average effluent TSS concentration was 42 mg/L, which indicates a poor settling efficiency in the ponds. The sampling results also show that the ponds are currently capable of complete nitrification and on average convert 99% of influent ammonia into nitrate or nitrite, under existing operating conditions.

Table 3.1. SMCSD WWTP Removal Rates

Influent	Influent	Pond 2 Effluent	Pond 3 Effluent	Pond 4 Effluent (Discharge)
BOD_5, mg/L	334	170	46	38
BOD_5 Removal (%)	---	49%	86%	89%
TSS, mg/L	270	193	50	42
TSS Removal (%)	---	29%	82%	85%
Ammonia (as N), mg/L	69	1	2	1
Ammonia Removal (%)	---	99%	98%	99%

While the existing SMCSD WWTP facilities have been found to be secure and operate in a way that does not jeopardize the health of the surrounding community, flora, and fauna, the quality of the effluent produced by the WWTP needs to be improved. The need for enhanced effluent nitrogen removal, in particular, has been noted in a letter from the Regional Board (Appendix B): "Additionally, we strongly urge San Miguel Community Services District to include salt and nitrogen removal capability in the expansion plans, as your facility is chronically out of compliance with permit limits for total dissolved solids, chloride, and sodium."

Compliance with Future Waste Discharge Requirements

The Regional Board has drafted a new General Waste Discharge Requirements Order No. R3-2020-0020 (General Permit), which will take effect on September 25, 2020. In conjunction with the upgrade/ expansion of the municipal WWTP, the District will be required to submit an application to the Regional Board to obtain coverage under the General Permit. The new WWTP must comply with the General Permit, included for reference as Appendix I (draft version) to this document. WWTP specifications described in the General Permit are summarized in the following paragraphs.

The new WWTP must comply with the setbacks specified in Table 2 of the General Permit unless an approved variance is obtained from the Central Coast Water Board Executive Officer.

Residual sludge and solid waste must be disposed of in a manner approved by the Central Coast Water Board Executive Officer and consistent with the Consolidated Requirements for Treatment, Storage, Processing, or Disposal of Solid Waste (California Code of Regulations, Title 27, Division 2). Use and disposal of biosolids must comply with the USEPA Part 503 Biosolids Rule (Code of Federal Regulations, title 40, part 503).

The new WWTP will be required to comply with the secondary effluent limitations specified in Table 5 of the General Permit, included as Table 3.2 here for reference.

Table 3.2. Future Secondary Effluent Limitations (Table 5 of the General Permit)

Constituent	Units	30-Day Average	7-Day Average	Sample Maximum
Biochemical Oxygen Demand, 5-Day	mg/L	30[7,8]	45[7,8]	Not Applicable
Total Suspended Solids	mg/L	30[7,8]	45[7,8]	Not Applicable
Settleable Solids	mL/L	0.1	0.3	0.5
Total Nitrogen (as N)	mg/L	Not Applicable	Not Applicable	10
pH	Not Applicable	less than 6.5 or greater than 8.4[5]	Not Applicable	Not Applicable

In addition to the secondary effluent limitations, the General Permit states that discharge will be required to meet groundwater objectives specified in Table 3-6 of the Water Quality Control Plan for the Central Coast Basin (Basin Plan). The median groundwater objectives for the Paso Robles Area, San Miguel are as follows:

- TDS: 750 mg/L
- Chlorine: 100 mg/L
- Sulfate: 175 mg/L
- Boron: 0.5 mg/L
- Sodium: 105 mg/L
- Nitrogen: 4.5 mg/L

The General Permit also states that tertiary treated non-potable wastewater that will be discharged to land for the purpose of reuse must comply with the effluent limitations specified in California Code of Regulations, Title 22, Division 4, Chapter 3.

In accordance with the General Permit, the District will be required to submit the following technical reports in accordance with the schedule specified in the Monitoring and Reporting Program (MRP). The MRP prescribes the required components of each plan. The District must implement each required plan.

- Pretreatment Program Plan (only if directed by the Central Coast Water Board Executive Officer)
- Operations and Maintenance Manual, containing:
    - Sampling and Analysis Plan
    - Sludge Management Plan
    - Land Application Area Management Plan
    - Spill Prevention and Emergency Response Plan
- Climate Change Adaptation Plan
- Salt and Nutrient Management Plan

Sustainable Groundwater Management Act Compliance

There is no existing compliance issue with SGMA. However, the current effluent salt levels exceed the goals set forth in the Paso Robles Subbasin GSP. The Paso Robles Subbasin GSP includes the San Miguel WWTP upgrade as one of six (6) reasonable projects that could help achieve groundwater sustainability throughout the subbasin by providing recycled water that would be used for irrigation and would offset groundwater pumping.

3b. Infrastructure Issues

The current SMCSD WWTP facilities were updated in the 1990's and early 2000's to increase the facilities permitted capacity from 100,000 GPD to its current capacity of 200,000 GPD. The 2020 Average Daily (influent) Flow is approximately 150,000 GPD. This flow comprises 75% of the facility's daily capacity. Furthermore, the Maximum Day Dry Weather (influent) Flow and the Maximum Day Wet Weather (influent) Flow have been estimated to be 188,000 GPD and 225,000 GPD, respectively. The Maximum Day flows task the facility to 94% (Dry Weather) and 113% (Wet Weather) of the permitted capacity. The Regional Board indicated in a letter to the SMCSD dated June 18, 2018 that "…the current wastewater treatment plant will reach capacity (200,000 gallons per day) in less than 3 years…". Since that time, the Average Daily Flow has remained relatively consistent, but will likely increase as new developments occur within the SMCSD limits. The SMCSD acknowledges that the existing WWTP is nearing capacity and requires an expansion and upgrade.

Historic Wastewater Flows

For the purposes of determining the appropriate wastewater system flows for existing and future conditions, an analysis was performed on the SMCSD historic wastewater system flow data. The available flow data is derived from an analysis of the daily flow records from the WWTP influent lift station. A graphical depiction of the daily wastewater flows is presented in Figure 3.1.

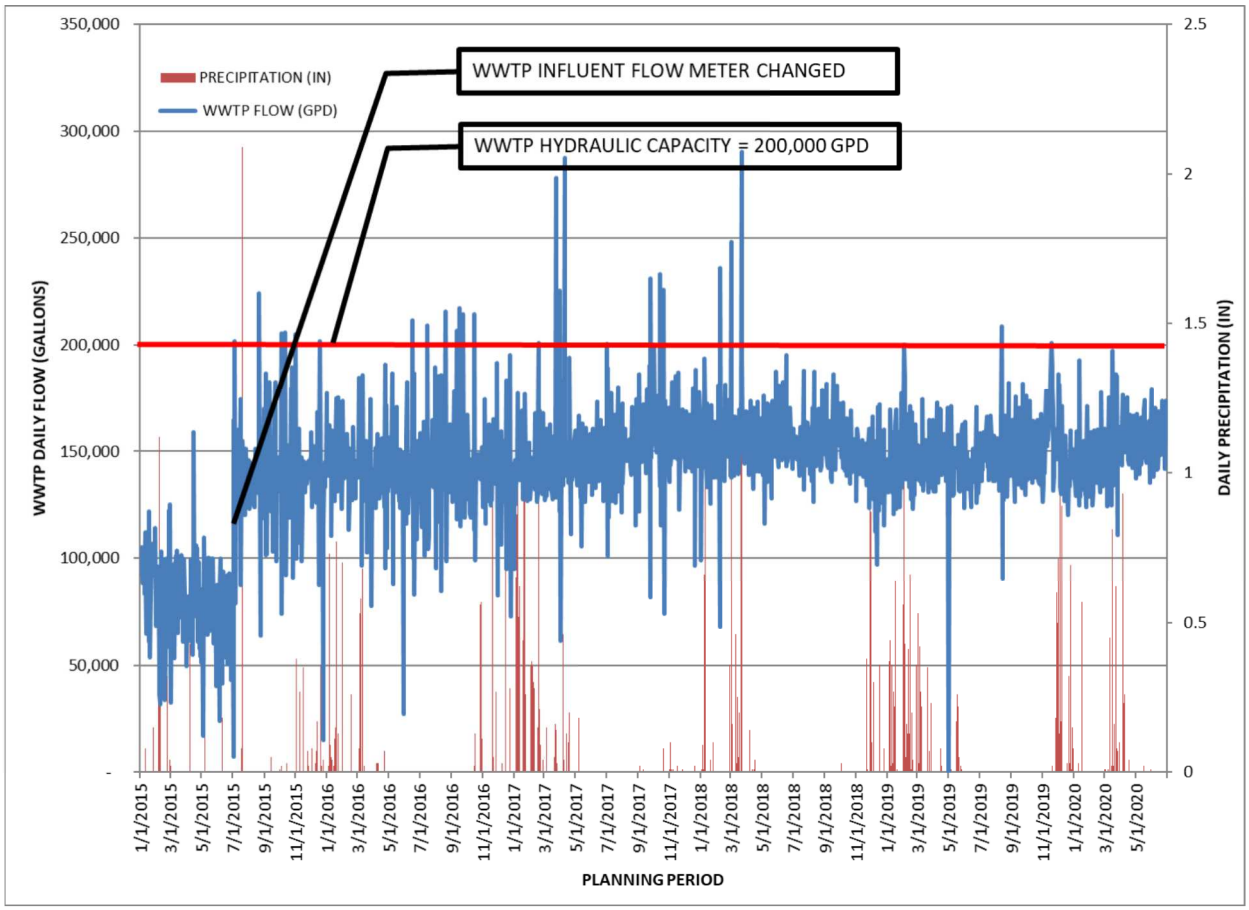


Figure 3.1. San Miguel WWTP Historic Flows

Based on a review of the data for the referenced planning period, it was determined that several of the low and high flow measurements are anomalous and likely in error. This is evidenced by flow measurements on subsequent days that vary by more than 100%, during times when there was no rainfall or any other reason to expect dramatic flow variations. To develop appropriate design flows for the wastewater collection facilities, accepted engineering methods and previous engineering experience on similar sized systems in the central coast of California were applied to arrive at reasonable flow values for the specified flow scenarios with consideration given to the daily flow record, the size of the collection system, and the population being served. The corresponding wastewater flow design parameters for the existing conditions are summarized below in Table 3.3.

Table 3.3. SMCSD WWTP Flow - Existing Conditions

WASTEWATER FLOW SCENARIO	EXISTING CONDITIONS FLOW (MGAL/DAY)
Average Daily Flow (ADF)	0.150
Maximum Day Dry Weather Flow (MDDWF)	0.188
Maximum Day Wet Weather Flow (MDWWF)	0.225
Peak Hour Wet Weather Flow (PHWWF)	0.525
Estimated Population Served	2621
Estimated Number of Sewer Connections	782

Under existing conditions, the annual estimate of the corresponding flow contributions on a per connection basis is summarized below in Table 3.4.

Table 3.4. SMCSD WWTP Flow Estimates Per Connection

WASTEWATER FLOW SCENARIO	EXISTING CONDITIONS FLOW PER CONNECTION (GPD)
Average Daily Flow (ADF)	192
Maximum Day Dry Weather Flow (MDDWF)	240
Maximum Day Wet Weather Flow (MDWWF)	288
Peak Hour Wet Weather Flow (PHWWF)	671

Stormwater Infiltration and Inflow

The infiltration and inflow (I/I) of storm water into a sewer system can result in peak flows that far exceed dry weather conditions. For the purposes of this report, these terms are defined as follows:

- *Infiltration* is the water entering a sewer system and service connections from groundwater, through such means as defective pipes, pipe joints, connections, or manhole walls. Infiltration does not include inflow and is relatively constant over a period of days, weeks, or even months as high groundwater conditions persist.

- *Inflow* is the water discharged into a sewer system and service connections from such sources as roof drains, cellar, yard and area drains, foundation drains, cooling water discharges, drains from springs and swampy areas, manhole covers, cross connections from storm sewers, catch basins, storm water, surface runoff, or drainage. Inflow does not include infiltration. Inflow varies rapidly with rainfall conditions, with flows rising and falling within minutes or hours of a severe storm event.

Because the depth to the groundwater table throughout the SMCSD wastewater collection system service area is significantly deeper than the deepest pipeline in the collection system, it is very unlikely that groundwater infiltration contributes any significant flow to the wastewater collection system.

Based on a review of the wastewater flow records and discussions with SMCSD staff, there is evidence that there are inflow contributions to the collection system. These inflow contributions are included in the MDWWF and PHWWF flow values described above. As the existing collection system is expanded to accommodate future growth, the I/I related flow should not increase significantly because new sewer construction methods and materials have very low I/I rates.

3c. Reasonable Design Capacity

The reasonable design capacity of the proposed SMCSD WWTP expansion/upgrade has been estimated to be 500,000 GPD to meet projected demands through 2050 (30-year life cycle horizon). The SMCSD proposes to build the WWTP in phases, using modular and expandable units whenever possible. The WWTP will initially be built to a design capacity of 325,000 GPD and expanded to full buildout of 500,000 GPD as wastewater flows increase over time. Detailed analysis of supporting data is provided below. More specific descriptions of WWTP infrastructure and design capacity are included in Section 6a.

2018 Collection System Flow Monitoring Program

To develop an enhanced understanding of the flow variability between wastewater flow contributions between the older and newer developed areas within the areas currently served by the SMCSD sanitary sewer collection system, a sewer flow monitoring program was initiated during the summer & fall of 2018. For the purposes of characterizing flow from the different areas, the SMCSD installed Hach Sigma 910 flow meters at two (2) locations. The initial measurement site was manhole No.1-17, which is located in the northern portion of town, on 19th Street. This meter measured combined flows from 120 newer single-family detached residences. The second measurement site was manhole No. 5-12, which is located in the central portion of town, on 14th Street. This meter measured combined flows from 212 connections which are comprised primarily of older single-family detached residences with a few commercial customers, including a small restaurant and small retail establishments.

The results of the flow monitoring study indicate that there is a significant difference between the average daily flow volumes that are discharged from the older and newer residential areas. The average daily flow per connection in the older residential areas was determined to be approximately 165 GPD, whereas the average daily flow per connection in the newer residential areas was determined to be approximately 283 GPD. Assuming the U.S. Census Bureau data for San Miguel is representative of current conditions, there are approximately 3.5 people per household.

Since 2018, the water and sewer rates in San Miguel have significantly increased, following a rate study performed by Bartle Wells Associates. Simultaneously, wastewater flows entering the WWTP have remained relatively consistent, even though new development has occurred. The lack of increase in flows indicates that there has been a reduction in water usage per capita in recent years. For this reason, the

flow monitoring study performed in 2018 may indicate flow rates that are no longer applicable. The results indicate that newer households tend to produce more wastewater than older households, however, the resultant wastewater flows per connection should not be used for assuming future flow projections.

Future Flow Projections

For the purposes of estimating the treatment capacity requirements of the SMCSD WWTP to adequately serve the future growth that is likely to occur within the SMCSD's service area, an analysis was performed to estimate the future wastewater flows. For the purposes of this analysis, flow projections were developed using current flow volumes and anticipated community growth information based on current and future land use information from the following sources:

- Sphere of Influence Update for San Miguel Community Services District (November 2013)
- San Miguel Community Services District Water & Wastewater Masterplan Update (August 2020)
- Information Provide by San Miguel Community Services District Staff
- Information provided by E & J Gallo Staff (Courtside Cellars)

In conjunction with this study, discussions with E & J Gallo Winery were held to explore the feasibility of SMCSD receiving and treating process wastewater flows from their Courtside Cellars wine processing facility. The wine processing facility is located northwest of the SMCSD WWTP site on an adjacent parcel of land and under current conditions processes between 30,000-60,000 GPD of wastewater. The Courtside Cellars process wastewater treatment system currently consists of two (2) primary partial mix aerated ponds, which flow into a settling pond before discharging into percolation ponds for effluent disposal. A potential benefit of consolidating the wastewater flows from the Courtside Cellars with SMCSD wastewater flows includes increasing the supply of reclaimed water for irrigation of agricultural properties in the vicinity of the SMCSD. Both benefits are compatible with the goals of the SMCSD to achieve groundwater sustainability.

The future per capita flow rate was determined with consideration given to California water conservation goals, current wastewater flows, and SMCSD wastewater flow monitoring studies. On May 31, 2018, California passed Assembly Bill 1668 and Senate Bill 606, which state that the indoor water use standard will be 55 GPCD through 2025, decreasing to 50 GPCD in 2030. The current per capita wastewater flow in San Miguel is 57 GPCD. Flow monitoring studies have indicated that newly developed residential areas exhibit a higher wastewater flow per capita than older residential areas. Based on these factors, the projected per capita flow rate was estimated to be 65 GPCD.

Utilizing data that was derived from the above sources, estimates were made for future WWTP flow conditions for the following years: 2025, 2035, 2040, and 2050. The 2025 flow condition assumes that the only additional development includes the high-probability parcels between Highway 101 and the Salinas River, and that no properties east of the Salinas River have been connected to the sanitary sewer system. The 2035 and 2050 flow conditions are based on the high- and medium-probability development scenarios described in Appendix D. The reference planning periods were selected for the design of a modular WWTP, and under the assumption that the design/service life of the expanded & renovated

WWTP will not exceed 30-years. Further, with the advent of new technologies and regulatory requirements that will occur over this span of time, it is probable that a new WWTP facility will need to be constructed by 2050. A summary of the future WWTP flow projections is included in Table 3.5.

Table 3.5. SMCSD WWTP Future Flow Estimates

Flow Condition	Peaking Factor	Existing Flow (MGD)	Projected Flow (MGD)			
			2025	2035	2040	2050
Average Daily Flow (ADF)	--	0.150	0.258	0.346	0.372	0.427
Maximum Day Dry Weather Flow (MDDWF)	1.25	0.188	0.323	0.433	0.465	0.534
Maximum Day Wet Weather Flow (MDWWF)	1.5	0.225	0.387	0.520	0.558	0.641
Peak Hour Wet Weather Flow (PHWWF)	3.5	0.525	0.903	1.213	1.301	1.495
Estimated Population Served	--	2620	3970	5330	5720	6570
Estimated Number of Sewer Connections	--	782	1170	1480	1600	1840
Annual Discharge (AC-FT)	--	170	290	390	420	480
Annual Discharge (AC-FT) w/ Courtside Cellars Wastewater	--	210	330	430	460	520
[1] Projected ADF, population increase, and sewer connections are based on the 2020 SMCSD Water & Wastewater Masterplan Update.						
[2] It should be noted that the peaking factor for computing the MDWWF for future conditions was reduced from 4.0 to 3.5. Scenarios after 2035 include flows from existing properties in the SLT, which currently utilize onsite wastewater treatment systems.						
[3] The current per capita wastewater flow is approximately 57 GPCD. The projected system flow is based upon a value of 65 GPCD.						
[4] The projected treatment system design life expectancy is estimated to be 30 years.						

4 ALTERNATIVES CONSIDERED

4a. Project Need and Solution

Based on the discussions presented in the previous chapters of this document, and specifically noted in the Regional Board letter dated June 18, 2018 ("…the current wastewater treatment plant will reach capacity (200,000 gallons per day) in less than 3 years…", and "…your facility is chronically out of compliance with permit limits for total dissolved solids, chloride, and sodium"), it is evident that there is a need to develop and evaluate wastewater treatment alternatives that meet current and future treatment objectives and permit compliance requirements.

This section describes the WWTP expansion/upgrade options which were considered as part of this study and the methodology for selection of recommended alternatives to best meet the goals of the SMCSD. The proposed solution will provide adequate wastewater treatment capabilities for the current and foreseeable service area, meet permit compliance requirements, and provide a sustainable irrigation source for the surrounding agricultural community.

4b. Regionalization Alternatives Considered

Connecting SMCSD Wastewater Flows to Local WWTPs

To meet the compliance standards set forth in WDR Order No. 99-046, the SMCSD evaluated the feasibility of pumping primary treated effluent to either the Camp Roberts WWTP or the Paso Robles WWTP. Each WWTP connection alternative is described below, however, it was ultimately determined that neither alternative would be feasible.

The first alternative involves constructing a new pipeline connecting the San Miguel WWTP to the Camp Roberts WWTP. This proposed pipeline would be about 3.72 miles in length and run along the east side of the Union Pacific Railroad. This pipeline would require two separate private property easements (including one from the California Department of Fish and Wildlife). In addition, this pipeline would require a pump with a minimum capacity of 42 HP for full buildout, assuming a 12" HDPE pipe is used. The following tables show the friction losses and power required to transport San Miguel's wastewater to the Camp Roberts WWTP through either a 12", 18" or 24" pipeline. Figure 4.1 shows the conceptual pipeline connecting the SMCSD wastewater to the Camp Roberts WWTP.

Table 4.1. Power required to pump wastewater to Camp Roberts WWTP, Phase 1 Scenario (0.3 MGD ADD, 729 GPM PHD)

Pipe Diameter (in.)	Friction Losses (ft)	Total Pressure (ft)	Required Pump Power (HP)
12	20	23	**6**
18	3	6	**2**
24	1	4	**1**

Table 4.2. Power required to pump wastewater to Camp Roberts WWTP, Phase 2 Scenario (0.6 MGD ADD, 1458 GPM PHD)

Pipe Diameter (in.)	Friction Losses (ft)	Total Pressure (ft)	Required Pump Power (HP)
12	74	77	**42**
18	10	13	**7**
24	3	6	**3**

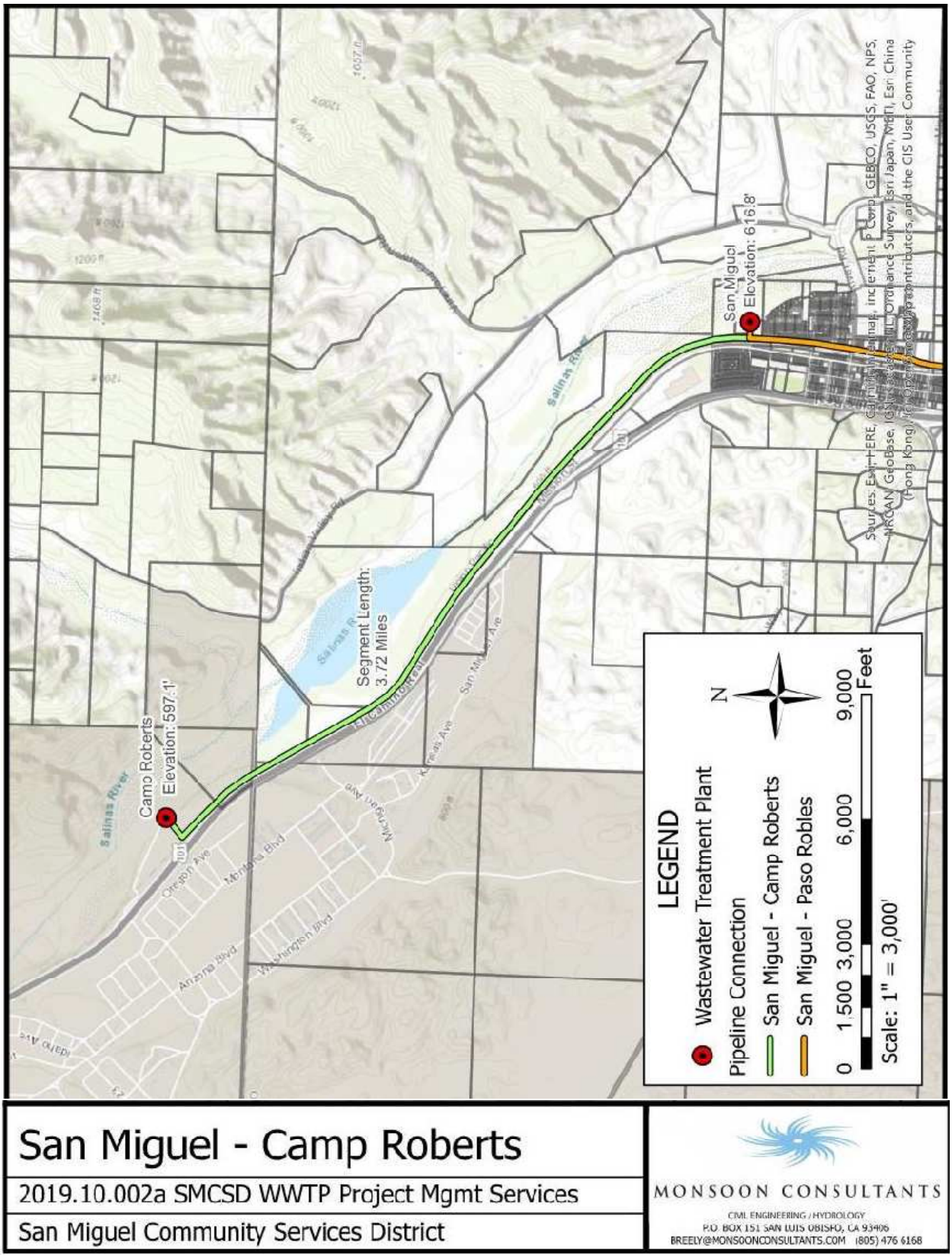


Figure 4.1. Connection from San Miguel to Camp Roberts WWTP

In 2016, a study was performed to assess the feasibility of sending San Miguel's wastewater to the Camp Roberts WWTP. A comment was made on the study that the SMCSD may need to curtail flows to the Camp Roberts WWTP during a time of local or national emergency. This potential constraint defeats the purpose of plant consolidation, and therefore sending San Miguel's wastewater to the Camp Roberts WWTP is not a feasible alternative.

The second proposed alternative is a pipeline connecting the San Miguel WWTP to the Paso Robles WWTP. This pipeline would span approximately 8.11 miles in length and would also run along the east side of the Union Pacific Railroad. This pipeline would require 28 separate private property easements. The pipe would also need to cross San Marcos Creek. Due to its length, this proposed pipeline would experience significant friction losses and would require a full buildout pump capacity of 153 HP through a 12" HDPE pipe. The following tables show the friction losses and power required to transport San Miguel's wastewater to the Paso Robles WWTP through either a 12", 18" or 24" pipeline. Figure 4.2 shows the conceptual pipeline connecting the SMCSD wastewater to the Paso Robles WWTP.

Table 4.3. Power required to pump wastewater to Paso Robles WWTP, Phase 1 Scenario (0.3 MGD ADD, 729 GPM PHD)

Pipe Diameter (in.)	Friction Losses (ft)	Total Pressure (ft)	Required Pump Power (HP)
12	49	151	**41**
18	7	109	**30**
24	2	104	**28**

Table 4.4. Power required to pump wastewater to Paso Robles WWTP, Phase 2 Scenario (0.6 MGD ADD, 1458 GPM PHD)

Pipe Diameter (in.)	Friction Losses (ft)	Total Pressure (ft)	Required Pump Power (HP)
12	179	281	**153**
18	25	127	**69**
24	6	108	**59**

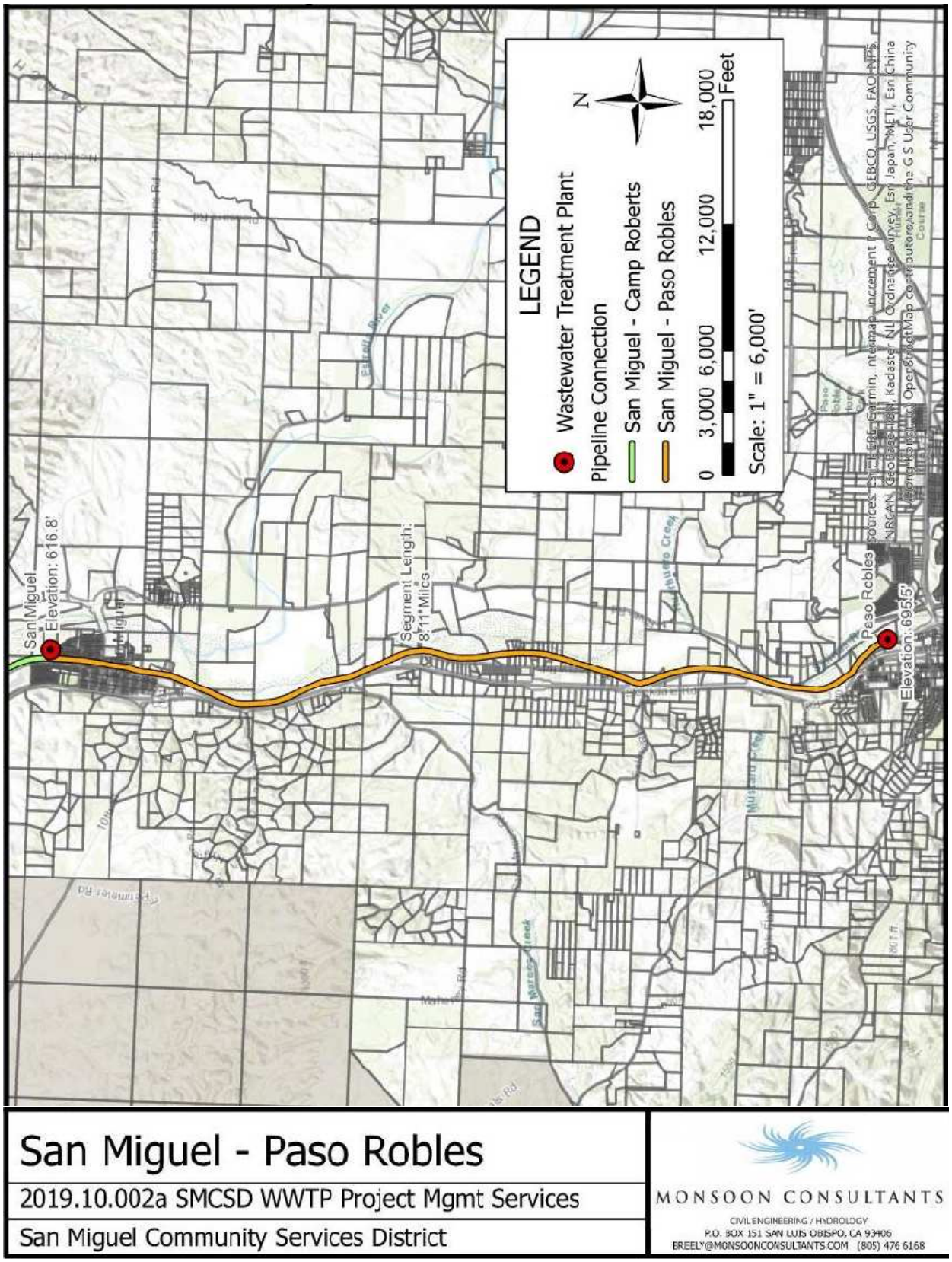


Figure 4.2. Connection from San Miguel to Paso Robles WWTP

Due to the length, stream crossings, number of parcels, and power required, the SMCSD has determined that pumping San Miguel's wastewater to the Paso Robles WWTP is not a reasonable alternative.

Incorporating New Flows to the SMCSD WWTP

As discussed previously, in addition to connecting San Miguel's wastewater to nearby WWTPs, discussions with the E & J Gallo Corporation were held to explore the feasibility of SMCSD receiving and treating process wastewater flows from their Courtside Cellars wine processing facility. The wine processing facility is located northwest of the SMCSD WWTP site on an adjacent parcel of land and under current conditions processes between 30,000-60,000 GPD of wastewater. A potential benefit of consolidating the wastewater flows from the Courtside Cellars with SMCSD wastewater flow includes increasing the supply of reclaimed water for irrigation of agricultural properties in the vicinity of the SMCSD. Both benefits are compatible with the goals of the SMCSD to achieve groundwater sustainability.

4c. Basis for WWTP Alternatives Considered

The WWTP future design flows were described in Section 3 and are summarized in Table 3.4. These flows were developed from a combination of historical data provided by the SMCSD, flow monitoring conducted as part of this study, data provided for the E & J Gallo Courtside Cellars wine processing facility, available information related to future land use, and discussions with SMCSD staff. The design flows and related loads are projected for the 30-year planning horizon. Recommended process elements and facility size based on a 30-year planning horizon, with consideration given to intermediate growth milestones, allows for more confidence since the duration takes future permit requirements, WWTP conditions, and financing cycles into consideration.

The alternatives that are described in the following sections of this document are designed to meet the present and future needs of the SMCSD. Based on the results of the engineering analysis and discussions with SMCSD Utilities Department staff, it was determined that the existing pond system should be utilized to the extent feasible in any WWTP expansion/upgrade configuration. With this direction, it was established that a portion of the existing treatment ponds will be utilized for influent flow equalization and/or primary treatment under all scenarios considered. Additionally, if feasible, the remaining treatment ponds will be repurposed for treated effluent polishing and storage of recycled water.

Based on the projected effluent standards and flow rates described previously in this document, several potential secondary and tertiary treatment processes were identified for evaluation. The following alternatives each provide the SMCSD with the opportunity to include water re-use and recycling options as previously described. For the purposes of evaluating potentially feasible alternatives for the consideration by the SMCSD for the WWTP expansion and upgrade, a total of eight (8) secondary treatment process and three (3) tertiary treatment process configurations were identified. A more detailed discussion of the alternatives analysis of various combinations of secondary and tertiary processes, which was performed in conjunction with this study, is included in Appendix J. In addition, a combined secondary - tertiary treatment process was also evaluated. The criteria used to evaluate each

of the treatment process options are summarized below and include both cost criteria (i.e. comparative capital and operating costs) as well as environmental and operational criteria.

1. Comparative Capital Costs
2. Comparative Operational Costs
3. Odor Mitigation
4. Staff Requirements
5. System Reliability and Durability
6. Construction Feasibility
7. Ease of Operation and Maintenance
8. Scalability
9. Effluent Water Quality
    a. Capacity to Meet Title 22 Recycled Water Quality Standards
    b. Capacity to Meet Vineyard Irrigation Water Quality Standards
10. Footprint/Land Requirements

Each of the treatment process alternatives includes a package of improvements which are common to all alternatives and variations of the secondary, tertiary, and biosolids treatment processes. A summary of the common improvements is provided in the following sections of this document.

4d. Summary of Common Improvements

SMCSD has recently purchased approximately 18 acres of unimproved land to the north and east of the existing WWTP for future expansion purposes. The new land is graphically depicted in Figure 4.3.



Figure 4.3. San Miguel WWTP Existing Property and Newly Acquired Expansion Area

Note that all WWTP expansion/upgrade options/alternatives detailed below will be built within the San Miguel WWTP property outlined in Figure 4.3 (either existing, expansion, or both). Infrastructure associated with the proposed recycled ("purple pipe") water distribution system will extend outside of the existing WWTP property and potentially outside the SMCSD boundary.

Although there are numerous primary, secondary, tertiary and biosolids treatment process alternatives that could potentially meet the goals of the SMCSD to meet future growth and regulatory demands with regard to wastewater treatment, there are a number of processes and infrastructure improvements that should be implemented regardless of what treatment process configuration is ultimately selected. These common improvements will work with any of the primary, secondary, tertiary, and biosolids treatment alternatives. These common elements include the following:

- Septage Receiving Station
- Headworks with Influent Screens & Grit Removal
- Influent Pumping Station
- Office and Laboratory Facilities
- Additional Maintenance & Equipment Storage/Shop Facilities
- Environmentally Controlled Electrical and Controls Facilities
- Upgrade & Modernization of the Electrical, Controls & SCADA Systems
- Treated/Recycled Effluent Pumping Station
- Back-up Power Generation Facilities

The common upgrades listed above are described in detail in Appendix K. Additionally, the primary treatment alternatives, secondary treatment alternatives, tertiary treatment alternatives, disinfection alternatives, and biosolids treatment alternatives considered for this project are all described in detail in Appendix J. Appendix J also provides an Alternatives Comparative Analysis for each of the treatment alternative categories listed.

4e. Effluent Reuse and Disposal Alternatives

Currently, WWTP effluent is discharged into three (3) percolation ponds (two required, one on standby) totaling 1.7 acres in area with a permitted treatment capacity of 200,000 GPD (0.2 MGD). Four (4) discharge alternatives were considered for this project:

Alternative No. 1: Percolation Ponds

a) Description: Continue the use of the existing percolation ponds. Add three (3) additional percolation ponds for a total of six (6) ponds (five required, one on standby) to achieve the projected WWTP capacity of 500,000 GPD (0.5 MGD).
b) Design Criteria: The specific design criteria used to formulate the Percolation Ponds Alternative described above include: Comparative Capital Costs, Comparative Operational Costs, Technical Complexity, Capacity to Meet SGMA Requirements, Footprint/Land Requirements.
c) Map: The percolation ponds will be located within the San Miguel WWTP property (either existing or newly acquired) outlined in Figure 4.3.
d) Environmental Impacts: There are no known negative environmental impacts imposed by the proposed WWTP option. However, continuing to use the existing percolation basins reduces the environmental impact associated with construction of new basins. All new infrastructure would be placed within the portion of the San Miguel WWTP property that is outside of FEMA Flood Zone A. Project construction will follow the County of San Luis Obispo guidelines regarding San Joaquin Kit Fox mitigation procedures.
e) Land Requirements: The option presented here minimizes the land required to be disturbed during the upgrade of the existing operations, as the continued use of the ponds will allow simultaneous operation of the existing WWTP during construction of the expansion.
f) Potential Construction Problems: There are no known potential construction problems associated with this design alternative.
g) Sustainability Considerations:
    i. Water and Energy Efficiency: This alternative is the current disposal method and does not include the use of recycled water.
    ii. This option provides for an economical and environmentally sustainable solution as it utilizes re-purposed facilities for the WWTP expansion/upgrade and requires the lowest construction footprint.
    iii. Effluent quality will be improved from the existing effluent quality with this alternative because the SMCSD will still be required to meet the waste discharge requirements using primary, secondary, and tertiary treatment.

h) Cost Estimates: This alternative would have lower construction and operation and maintenance costs than Alternative No. 4 because it only involves the construction of additional ponds on the WWTP property.
This option would not generate any additional income.

Alternative No. 2: Identify 23 acres of land to be used as sprayfields with a permitted capacity of 0.8 inches/day and use some or all of the existing percolation ponds as a backup for emergencies. This alternative would require the SMCSD to purchase additional land outside of the WWTP parcel area and therefore was not considered further.

Alternative No. 3: Discharge into the Salinas River. This alternative was considered briefly. Due to regulatory challenges and expenses, this was not considered to be a reasonable alternative.

Alternative No. 4: Recycled Water for Agricultural Irrigation

a) Description: Identify adjacent agricultural area for irrigation (Title 22 non-contact irrigation) and use some or all of the existing percolation ponds as a backup for emergencies. Under normal operating conditions, pump treated effluent directly to local vineyards that have lined irrigation ponds for storage. In the event that the vineyards cannot store the treated effluent, store treated effluent in lined storage ponds on the WWTP property.
b) Design Criteria: The specific design criteria used to formulate the Recycled Water Alternative described above include: Comparative Capital Costs, Comparative Operational Costs, Technical Complexity, Capacity to Meet SGMA Goals, Footprint/Land Requirements.
c) Map: The proposed distribution pipelines are shown in Figure 6.4. The lined storage ponds and percolation ponds will be located within the San Miguel WWTP property (either existing or newly acquired) and are shown in Figure 6.2.
d) Environmental Impacts: There are no known negative environmental impacts imposed by the proposed WWTP option. However, continuing to use the existing percolation basins reduces the environmental impact associated with construction of new basins. All new on-site infrastructure would be placed within the portion of the San Miguel WWTP property that is outside of FEMA Flood Zone A. Project construction will follow the County of San Luis Obispo guidelines regarding San Joaquin Kit Fox mitigation procedures.
e) Land Requirements: The option presented here requires more land to be disturbed than Alternative No. 1 as it will include the construction of recycled water conveyance pipelines. The continued use of the percolation ponds will allow simultaneous operation of the existing WWTP during construction of the expansion.
f) Potential Construction Problems: There are no known potential construction problems associated with this design alternative. This alternative includes the construction of pipelines to convey treated effluent to the vineyards and will therefore have a much larger construction footprint than Alternative No. 1.
g) Sustainability Considerations:

i. Water and Energy Efficiency: Treated effluent will meet Title 22 requirements for non-contact irrigation of vineyards. The reclaimed water supply would be used to offset existing groundwater pumping from the Paso Robles Groundwater Basin and is consistent with the goals of the Paso Robles Groundwater Sustainability Agencies (GSAs) to reduce groundwater pumping in the future to help achieve groundwater sustainability under the requirements of SGMA. Reducing pumping impacts on the groundwater table may also result in rising aquifer levels and potentially re-establishing groundwater-dependent ecosystems.

ii. The distribution of reclaimed water by the SMCSD to large land areas, in lieu of disposing of the treated effluent into percolation basins, will eliminate the localized salt loading to the shallow subsurface that occurs under existing conditions.

iii. It is understood that any effluent reuse and disposal alternatives considered will need to incorporate the current and future (anticipated) regulatory landscape, including recent State policies regarding the drought, SGMA, and salt and nutrient management planning. The existing regulatory requirements governing effluent reuse and disposal in California are summarized in Appendix L.

iv. This option provides for an economical and environmentally sustainable solution as it utilizes re-purposed facilities for the WWTP expansion/upgrade.

h) Cost Estimates: This alternative would have higher construction and operation and maintenance costs because it involves the construction of recycled water conveyance pipelines in addition to the construction of additional ponds on WWTP property.

The SMCSD plans to generate income by selling the Title 22 treated effluent to local vineyard owners for non-contact drip irrigation. Preliminary discussion with local vineyard owners is currently underway to determine the monetary value of recycled water and the terms of agreement for a long-term contract.

The SMCSD has selected Alternative No. 4 as the preferred alternative, as it is the only alternative that includes recycled water and is compatible with the requirements of SGMA. As part of the planning and engineering phase of the project, the SMCSD would like to incorporate effluent reuse and disposal using agricultural irrigation when recycled water demand exists, and seasonal land disposal (i.e. percolation ponds) when recycled water demand does not exist. The SMCSD is surrounded by agricultural land use, with most of this land being devoted to wine grape vineyards. The SMCSD has been in discussions with several of the larger vineyard owners which are near the SMCSD WWTP that have expressed a strong interest in the possibility of utilizing recycled effluent to make up a portion of their annual crop irrigation demands.

The following section describes treatment alternatives that would provide the treatment needed to implement the proposed Title 22 treated effluent discharge alternative and meet the Regional Board WDRs for the system.

4f. Shortlisted WWTP Improvement Alternatives

Based on the results of the alternatives comparative analysis that was performed and described in the Appendices of this document, three (3) potential configurations were identified for the proposed SMCSD WWTP upgrade and expansion. Each of these configurations incorporates several processes and improvements which are common, with the primary difference between the "Shortlisted" configurations being the secondary/tertiary treatment processes. Each of the configurations that were "Shortlisted" are compatible with the goals of the SMCSD to meet all foreseeable wastewater treatment requirements while also having the capacity to produce a reclaimed water supply that meets Title 22 requirements for non-contact agricultural irrigation.

The three (3) Top Ranked alternatives include some of the same components. All three configurations would include the construction of a new headworks structure that includes, at a minimum, a bar (coarse) screen and a grit removal system. In addition, a new influent lift station will be constructed. Tertiary treated effluent will be disinfected using the UV disinfection process which will result in an effluent that meets the Title 22 requirements for non-contact irrigation of vineyards. Sludge will be conveyed to an aerobic digester for further treatment, stabilization, and volume reduction before being dewatered using a screw press or sludge container filter (i.e. sludgebox). The dewatered sludge will be transported to a local landfill for disposal. A brief description of each of the three (3) Top Ranked configurations is presented in the following sections of this document.

In addition to the various treatment processes that will be presented below, the project will include several ancillary site improvements and facilities. A brief description of these "common improvements" is included above. These improvements are common to each of the Top Ranked configurations described herein and include the following:

- Septage Receiving Station
- Office and Laboratory Facilities
- Additional Maintenance and Equipment Storage/Shop Facilities
- Environmentally Controlled Electrical & Controls Facilities
- Upgrade & Modernization of the Electrical, Controls, & SCADA Systems
- Upgrade Power Generation Facilities

Retrofitted Aerated Pond WWTP Configuration

a) Description: The Retrofitted Aerated Pond WWTP configuration would include the conversion of the existing primary treatment ponds (Primary Pond No. 1 & 2) from a surface aeration system to a hybrid sequencing batch reactor system with submerged fine & coarse bubble aeration systems and provisions for flow control including the installation of baffles and bio-curtains. The retrofitted aerated ponds would provide secondary treatment, with tertiary treatment provided through the addition of a disc filtration system. A new headworks structure would be constructed that includes a bar (coarse) screen and a grit removal system. In addition, a new influent lift station will be constructed. Tertiary treated effluent will be disinfected using the UV disinfection

process which will result in an effluent that meets the Title 22 requirements for non-contact irrigation of vineyards. Sludge which accumulates in the retrofitted aerated ponds will require periodic removal. Sludge will be conveyed to an aerobic digester for further treatment, stabilization, and volume reduction before being dewatered using a screw press or sludge container filter (i.e. sludgebox). The dewatered sludge will be transported to a local landfill for disposal.

A graphical depiction of the primary components of the Retrofitted Aerated Pond WWTP configuration is presented in Figure Nos. 4.4 and 4.5.

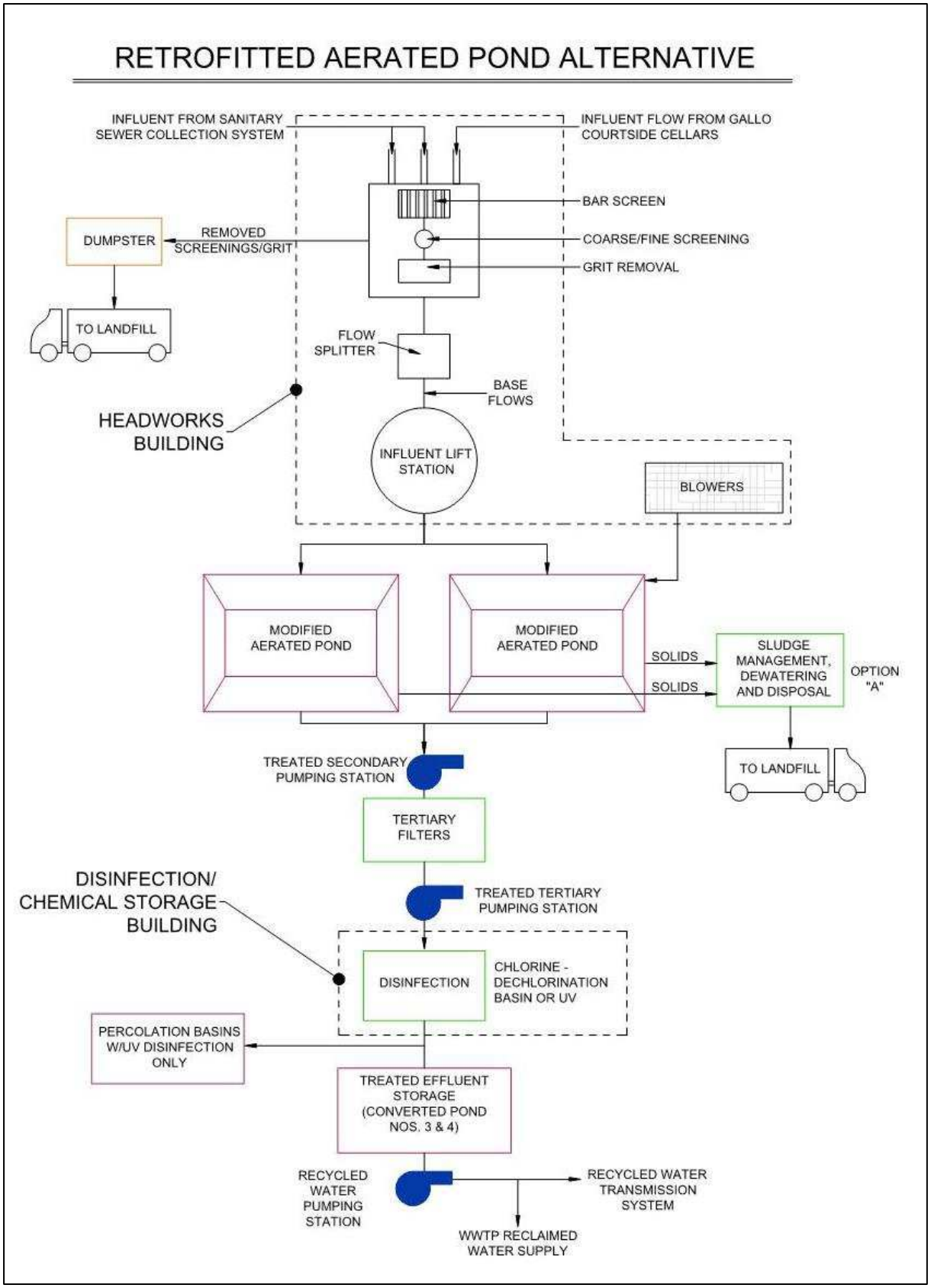


Figure 4.4. Retrofitted Aerated Pond Alternative

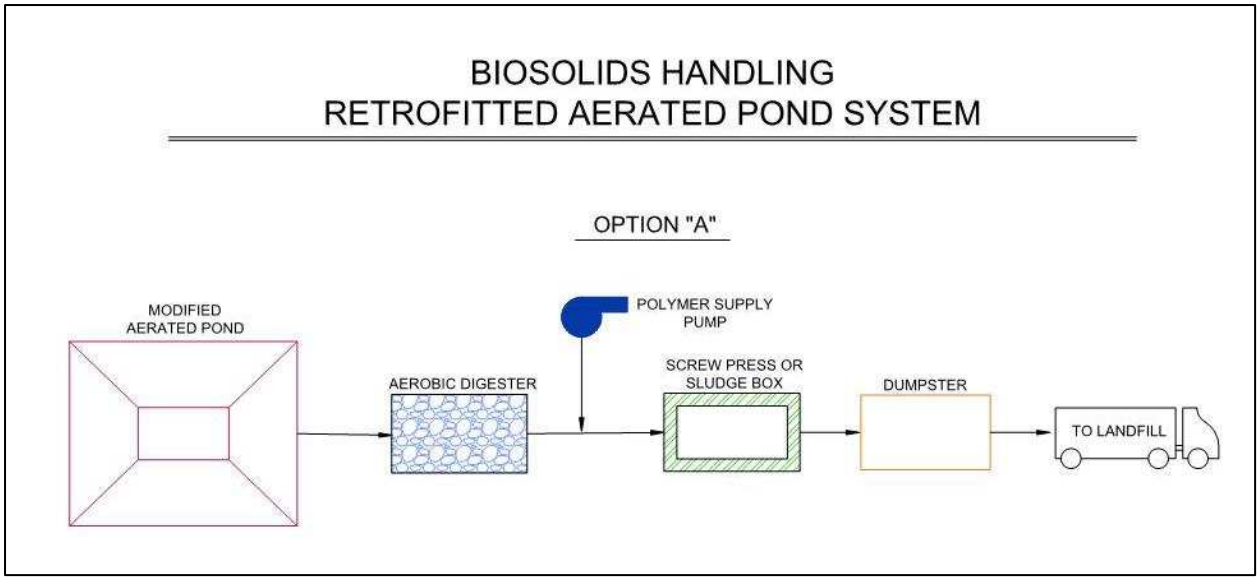


Figure 4.5. Biosolids Handling for Retrofitted Aerated Pond System

b) Design Criteria: The specific design criteria used to formulate the Retrofitted Aerated Pond WWTP Alternative described above include: Comparative Capital Costs, Comparative Operational Costs, Staff Requirements, Scalability, Odor Mitigation, Effluent Water Quality, Technical Complexity, Capacity to Meet Title 22 Recycled Water Quality Standards, Capacity to Meet Vineyard Irrigation Water Quality Standards, Footprint/Land Requirements, System Reliability and Durability.

c) Map: The Primary Treatment operations will be located within the San Miguel WWTP property (either existing or newly acquired) outlined in Figure 4.3.

d) Environmental Impacts: There are no known negative environmental impacts imposed by the proposed WWTP option. However, re-purposing of the existing partial mix surface aerated ponds to an aerated primary treatment basin minimizes the environmental impact associated with construction of new basins. All new infrastructure would be placed within the portion of the San Miguel WWTP property that is outside of FEMA Flood Zone A. Project construction will follow the County of San Luis Obispo guidelines regarding San Joaquin Kit Fox mitigation procedures.

e) Land Requirements: The option presented here minimizes the land required to be disturbed during the upgrade of the existing operations, as the re-purposing of the ponds will allow simultaneous operation of the existing WWTP during construction of the expansion.

f) Potential Construction Problems: There are no known potential construction problems associated with this design alternative.

g) Sustainability Considerations: The proposed Retrofitted Aerated Pond WWTP option takes into account the following sustainability considerations:

    i) Water and Energy Efficiency: Treated effluent will meet Title 22 requirements for non-contact irrigation of vineyards. The reclaimed water supply would be used to offset existing groundwater pumping from the Paso Robles Groundwater Basin and is consistent with the goals of the Paso Robles GSAs to reduce groundwater pumping in the future to help achieve groundwater sustainability under the requirements of SGMA. Reducing

pumping impacts on the groundwater table may also result in rising aquifer levels and potentially re-establishing groundwater-dependent ecosystems.
This option is the second-most energy intensive of the three alternatives.

ii) The distribution of reclaimed water by the SMCSD to large land areas, in lieu of disposing of the treated effluent into percolation basins, will eliminate the localized salt loading to the shallow subsurface that occurs under existing conditions.

iii) This option provides for an economical and environmentally sustainable solution as it utilizes re-purposed facilities for the WWTP expansion/upgrade and requires the lowest construction footprint.

h) Cost Estimates: In conjunction with the comparative analyses of each of the Top Ranked WWTP configurations, a preliminary cost estimate has been created for the Retrofitted Aerated Pond WWTP configuration. The preliminary cost estimate includes construction costs, non-construction costs, and annual O&M costs. Details pertaining to the estimated construction costs and estimated annual energy costs associated with this option are provided in Appendix M.

Table 4.5. Retrofitted Aerated Pond System Estimated Capital Cost

Cost Schedule	Total $
Construction	$ 12,006,437.80
Non-Construction	N/A
Annual O&M	$ 609,570.00

Table 4.6. Retrofitted Aerated Pond System Estimated O&M Costs

O&M Cost Estimate	$/Year
Personnel	$ 225,000.00
Administrative	$ 75,000.00
Water Purchase of Water Treatment	N/A
Insurance	$ 20,000.00
Energy (Fuel and/or Electrical)	$ 199,570.00
Process Chemicals	$ 5,000.00
Monitoring and Testing	$ 50,000.00
Professional Services	$ 5,000.00
Residuals Disposal	$ 20,000.00
Miscellaneous	$ 10,000.00
Total	$ 609,570.00

Membrane Bioreactor WWTP Configuration

a) Description: The Membrane Bioreactor WWTP configuration would include the conversion of the existing primary treatment ponds (Primary Pond No. 1 & 2) to influent flow equalization basins with submerged fine & coarse bubble aeration systems to provide a nominal level of primary treatment and for odor control purposes. Secondary and tertiary treatment would be achieved with the installation of a micro screening system followed by a membrane bioreactor. The membrane bioreactor would be modular so that the system can be initially sized to match existing flow conditions and expanded as required in the future to meet additional flow and loading requirements. A new headworks structure would be constructed that includes a bar (coarse) screen and a grit removal system. Additionally, this system requires fine screening for membrane protection as part of the headworks. In addition, a new influent lift station will be constructed. Tertiary treated effluent will be disinfected using the UV disinfection process which will result in an effluent that meets the Title 22 requirements for non-contact irrigation of vineyards. Sludge which is produced from the MBR will be conveyed to an aerobic digester for further treatment, stabilization, and volume reduction before being dewatered using a screw press or sludge container filter (i.e. sludgebox). The dewatered sludge will be transported to a local landfill for disposal.

   A graphical depiction of the primary components of the Membrane Bioreactor WWTP configuration is presented in Figure Nos. 4.6 and 4.7.

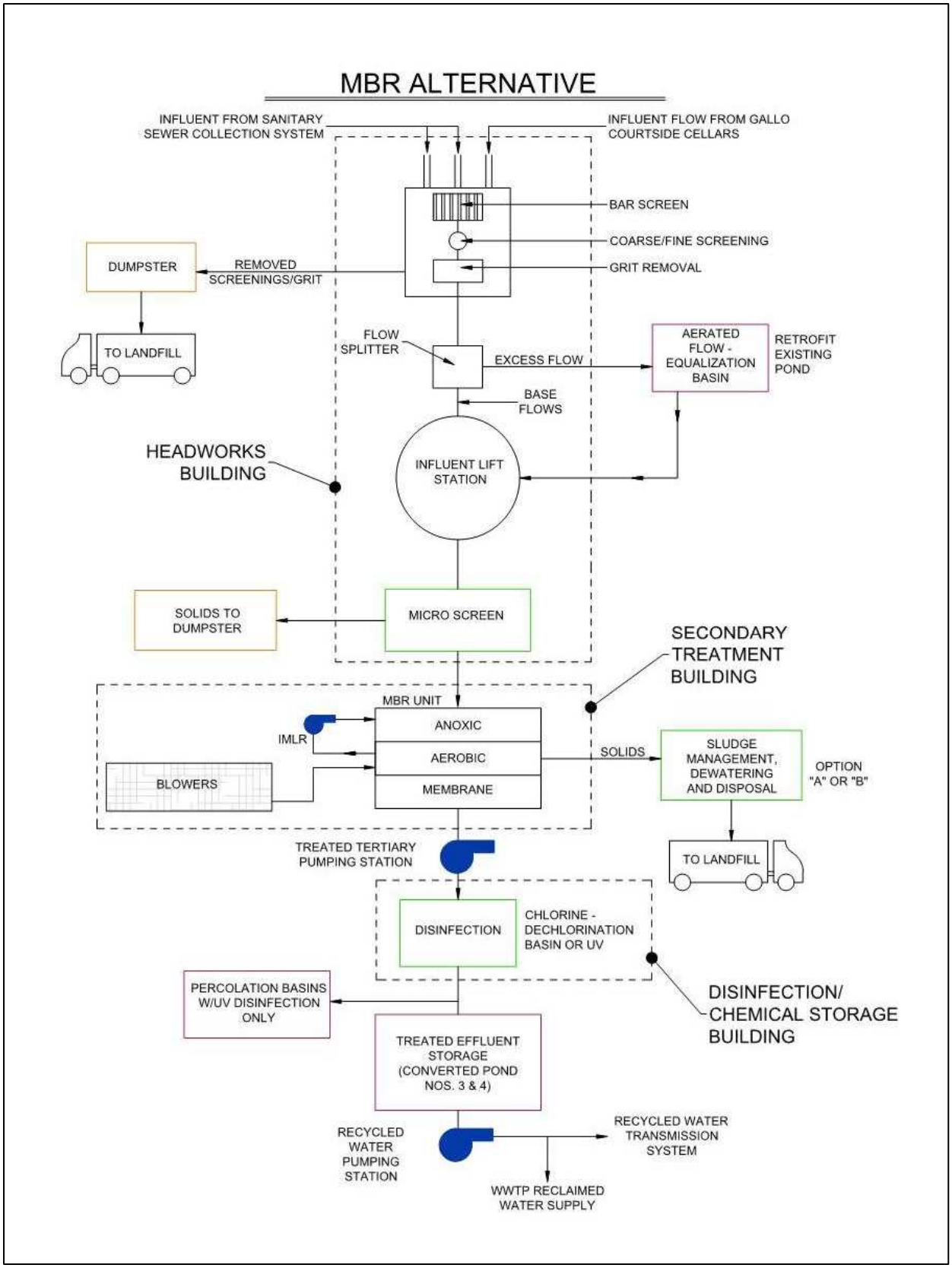


Figure 4.6. Membrane Bioreactor (MBR) Alternative

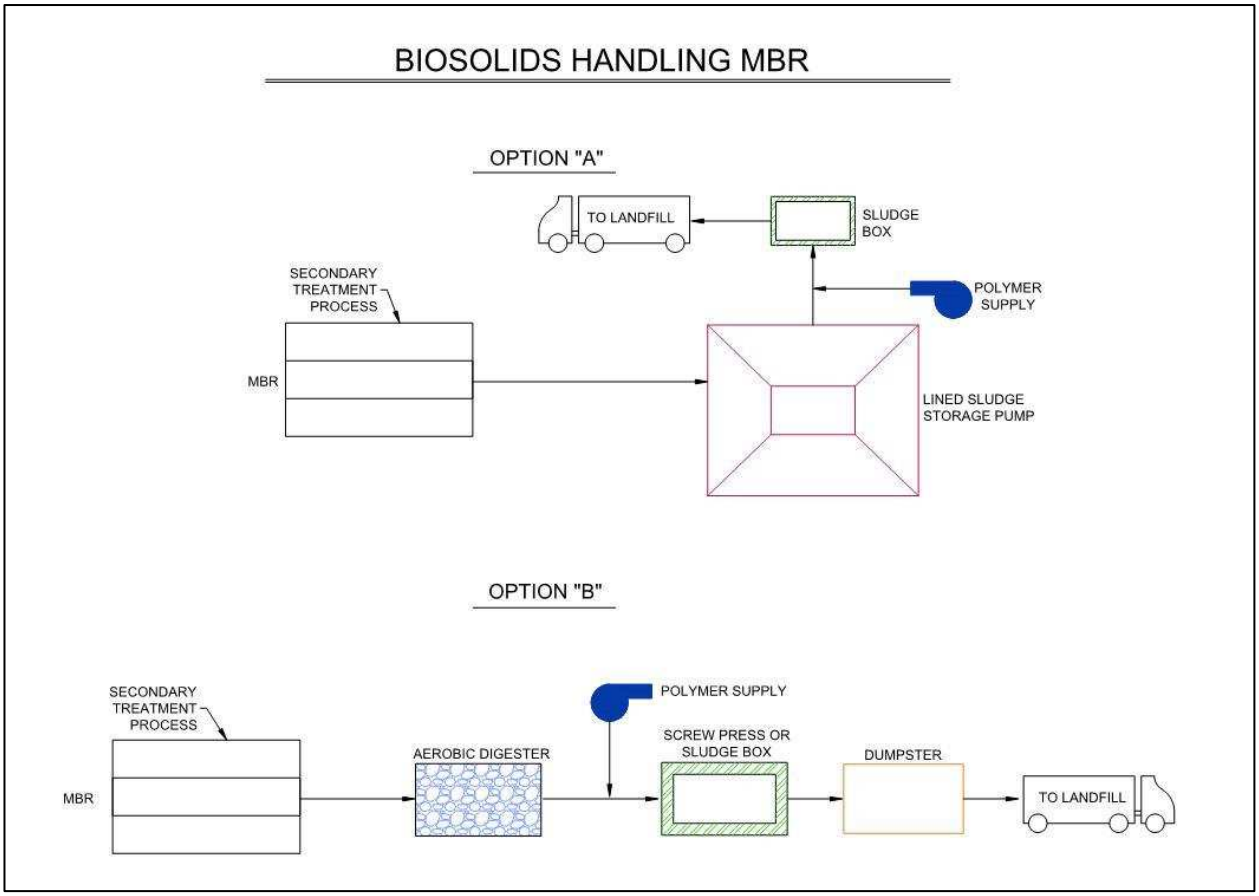


Figure 4.7. Bio-Solids Handling for Membrane Bioreactor (MBR) Alternative

b) Design Criteria: The specific design criteria used to formulate the Membrane Bioreactor Alternative described above include: Comparative Capital Costs, Comparative Operational Costs, Staff Requirements, Scalability, Odor Mitigation, Effluent Water Quality, Technical Complexity, Capacity to Meet Title 22 Recycled Water Quality Standards, Capacity to Meet Vineyard Irrigation Water Quality Standards, Footprint/Land Requirements, System Reliability and Durability.

c) Map: The Primary Treatment operations will be located within the San Miguel WWTP property (either existing or newly acquired) outlined in Figure 4.3.

d) Environmental Impacts: There are no known negative environmental impacts imposed by the proposed WWTP option. However, re-purposing of the existing partial mix surface aerated ponds to an aerated primary treatment basin minimizes the environmental impact associated with construction of new basins. All new infrastructure would be placed within the portion of the San Miguel WWTP property that is outside of FEMA Flood Zone A. Project construction will follow the County of San Luis Obispo guidelines regarding San Joaquin Kit Fox mitigation procedures.

e) Land Requirements: The option presented here minimizes the land required to be disturbed during the upgrade of the existing operations, as the re-purposing of the ponds will allow simultaneous operation of the existing WWTP during construction of the expansion.

f) Potential Construction Problems: There are no known potential construction problems associated with this design alternative.

g) Sustainability Considerations: The proposed Membrane Bioreactor WWTP option takes into account the following sustainability considerations:

i) Water and Energy Efficiency: Treated effluent will meet Title 22 requirements for non-contact irrigation of vineyards. The reclaimed water supply would be used to offset existing groundwater pumping from the Paso Robles Groundwater Basin and is consistent with the goals of the Paso Robles GSAs to reduce groundwater pumping in the future to help achieve groundwater sustainability under the requirements of SGMA. Reducing pumping impacts on the groundwater table may also result in rising aquifer levels and potentially re-establishing groundwater-dependent ecosystems.
This option is the most energy intensive of the three alternatives.

ii) The distribution of reclaimed water by the SMCSD to large land areas, in lieu of disposing of the treated effluent into percolation basins, will eliminate the localized salt loading to the shallow subsurface that occurs under existing conditions.

iii) This option provides for an economical and environmentally sustainable solution as it utilizes re-purposed facilities for the WWTP expansion/upgrade.

h) Cost Estimates: In conjunction with the comparative analyses of each of the Top Ranked WWTP configuration, a preliminary cost estimate has been created for the Membrane Bioreactor WWTP configuration. The preliminary cost estimate includes construction costs, non-construction costs, and annual O&M costs. Details pertaining to the estimated construction costs and estimated annual energy costs associated with this option are provided in Appendix N.

Table 4.7. Membrane Bio-Reactor System Estimated Capital Cost

Cost Schedule	Total $
Construction	$ 12,161,437.80
Non-Construction	N/A
Annual O&M	$ 626,810.00

Table 4.8. Membrane Bio-Reactor System Estimated O&M Costs

O&M Cost Estimate	$/Year
Personnel	$ 225,000.00
Administrative	$ 75,000.00
Water Purchase of Water Treatment	N/A
Insurance	$ 20,000.00
Energy (Fuel and/or Electrical)	$ 216,810.00
Process Chemicals	$ 5,000.00
Monitoring and Testing	$ 50,000.00
Professional Services	$ 5,000.00
Residuals Disposal	$ 20,000.00
Miscellaneous	$ 10,000.00
Total	$ 626,810.00

Sequencing Batch Reactor WWTP Configuration

a) Description: The Sequencing Batch Reactor WWTP configuration would include the conversion of the existing primary treatment ponds (Primary Pond No. 1 & 2) to influent flow equalization basins with submerged fine & coarse bubble aeration systems to provide a nominal level of primary treatment and for odor control purposes. Secondary treatment would be achieved with the installation of a sequencing batch reactor system with tertiary treatment provided through the addition of a disc filtration system. The sequencing batch reactor would be modular so that the system can be initially sized to match existing flow conditions and expanded as required in the future to meet additional flow and loading requirements. A new headworks structure would be constructed that includes a bar (coarse) screen and a grit removal system. In addition, a new influent lift station will be constructed. Tertiary treated effluent will be disinfected using the UV disinfection process which will result in an effluent that meets the Title 22 requirements for non-contact irrigation of vineyards. Sludge which is produced from the SBR will be conveyed to an aerobic digester for further treatment, stabilization, and volume reduction before being dewatered using a screw press or sludge container filter (i.e. sludgebox). The dewatered sludge will be transported to a local landfill for disposal.

   A graphical depiction of the primary components of the Sequencing Batch Reactor WWTP configuration is presented in Figure Nos. 4.8 and 4.9.

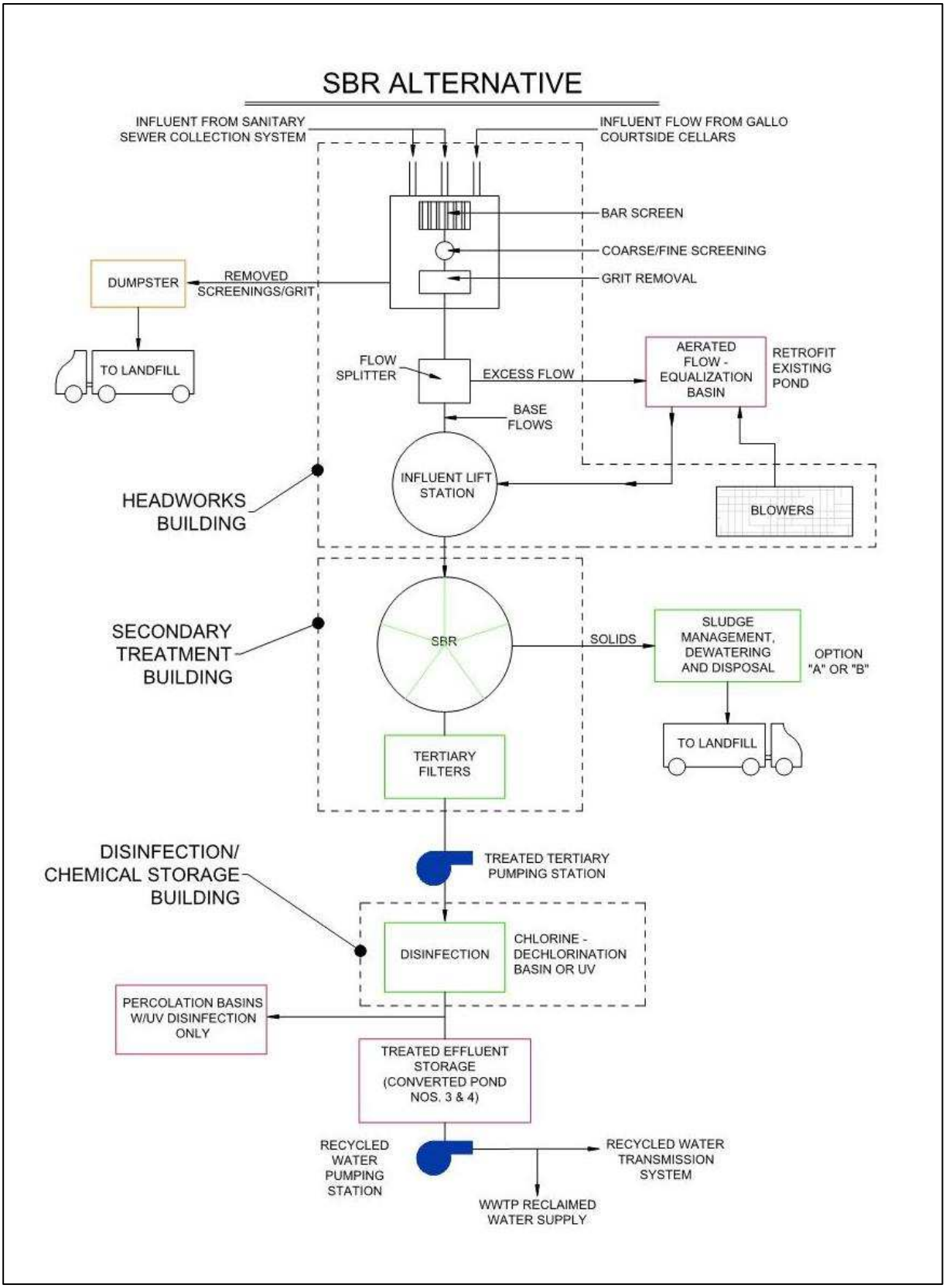


Figure 4.8. Sequencing Batch Reactor (SBR) Alternative

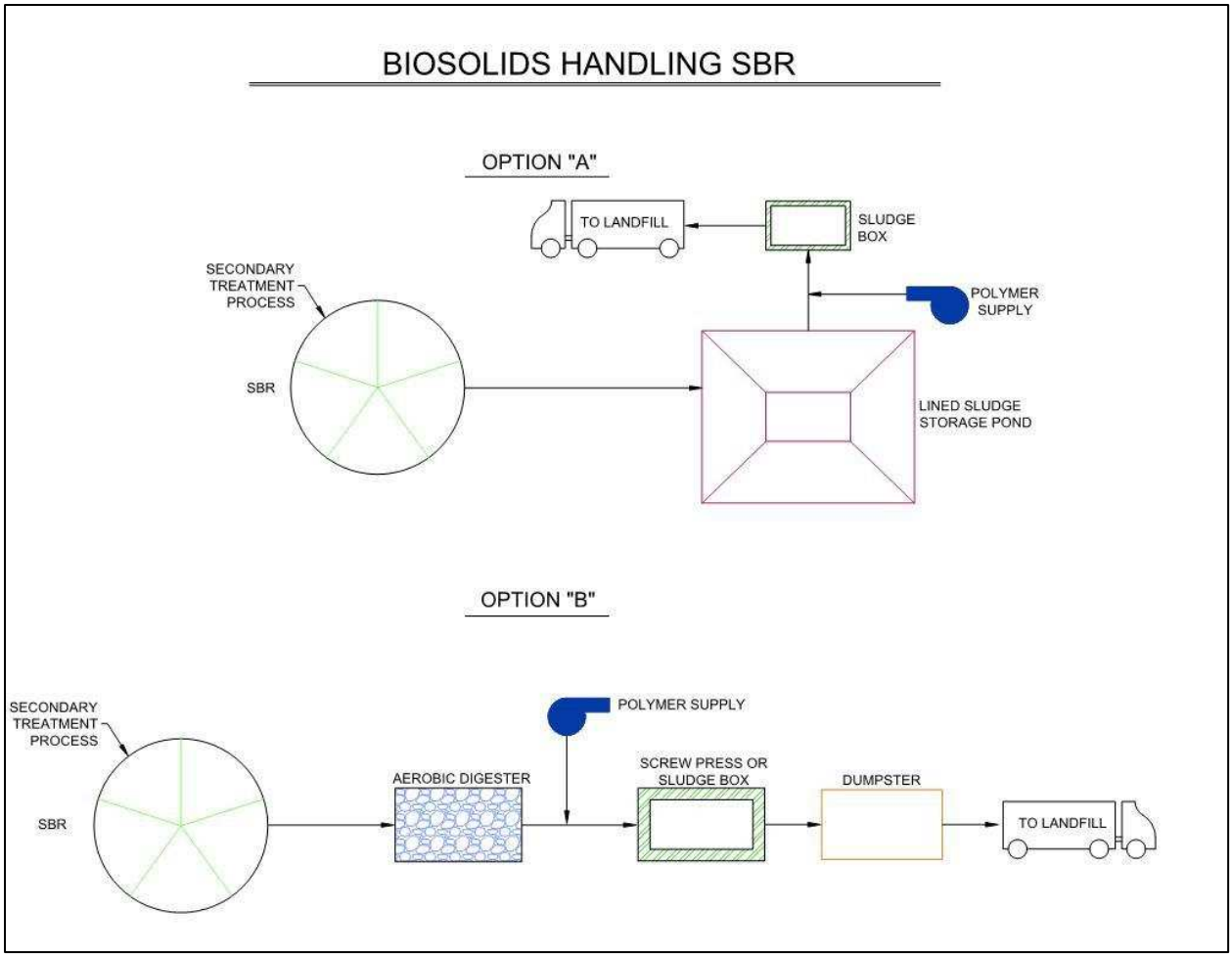


Figure 4.9. Bio-Solids Handling for Sequencing Batch Reactor

b) Design Criteria: The specific design criteria used to formulate the Sequencing Batch Reactor Alternative described above include: Comparative Capital Costs, Comparative Operational Costs, Staff Requirements, Scalability, Odor Mitigation, Effluent Water Quality, Technical Complexity, Capacity to Meet Title 22 Recycled Water Quality Standards, Capacity to Meet Vineyard Irrigation Water Quality Standards, Footprint/Land Requirements, System Reliability and Durability.

c) Map: The Primary Treatment operations will be located within the San Miguel WWTP property (either existing or newly acquired) outlined in Figure 4.3.

d) Environmental Impacts: There are no known negative environmental impacts imposed by the proposed WWTP option. However, re-purposing of the existing partial mix surface aerated ponds to an aerated primary treatment basin minimizes the environmental impact associated with construction of new basins. All new infrastructure would be placed within the portion of the San Miguel WWTP property that is outside of FEMA Flood Zone A. Project construction will follow the County of San Luis Obispo guidelines regarding San Joaquin Kit Fox mitigation procedures.

e) Land Requirements: The option presented here minimizes the land required to be disturbed during the upgrade of the existing operations, as the re-purposing of the ponds will allow simultaneous operation of the existing WWTP during construction of the expansion.

f) Potential Construction Problems: There are no known potential construction problems associated with this design alternative.

g) Sustainability Considerations: The proposed Sequencing Batch Reactor WWTP option takes into account the following sustainability considerations:

   i) Water and Energy Efficiency: Treated effluent will meet Title 22 requirements for non-contact irrigation of vineyards. The reclaimed water supply would be used to offset existing groundwater pumping from the Paso Robles Groundwater Basin and is consistent with the goals of the Paso Robles GSAs to reduce groundwater pumping in the future to help achieve groundwater sustainability under the requirements of SGMA. Reducing pumping impacts on the groundwater table may also result in rising aquifer levels and potentially re-establishing groundwater-dependent ecosystems.
   This option is the least energy intensive of the three alternatives.

   ii) The distribution of reclaimed water by the SMCSD to large land areas, in lieu of disposing of the treated effluent into percolation basins, will eliminate the localized salt loading to the shallow subsurface that occurs under existing conditions.

   iii) This option provides for an economical and environmentally sustainable solution as it utilizes re-purposed facilities for the WWTP expansion/upgrade.

h) Cost Estimates: In conjunction with the comparative analyses of each of the Top Ranked WWTP configuration, a preliminary cost estimate has been created for the Sequencing Batch Reactor WWTP configuration. The preliminary cost estimate includes construction costs, non-construction costs, and annual operations and maintenance (O&M) costs. Details pertaining to the estimated construction costs and estimated annual energy costs associated with this option are provided in Appendix O.

Table 4.9. Sequencing Batch Reactor System Estimated Capital Cost

Cost Schedule	Total $
Construction	$ 12,065,437.80
Non-Construction	N/A
Annual O&M	$ 595,806.00

Table 4.10. Sequencing Batch Reactor System Estimated O&M Costs

O&M Cost Estimate	$/Year
Personnel	$225,000.00
Administrative	$ 75,000.00
Water Purchase of Water Treatment	N/A
Insurance	$ 20,000.00
Energy (Fuel and/or Electrical)	$185,806.00
Process Chemicals	$ 5,000.00
Monitoring and Testing	$ 50,000.00
Professional Services	$ 5,000.00
Residuals Disposal	$ 20,000.00
Miscellaneous	$ 10,000.00
Total	$595,806.00

5 SELECTION OF AN ALTERNATIVE

As described above, each of the Top Ranked WWTP configurations includes the processes and infrastructure to produce a significant volume of reclaimed wastewater on an annual basis that meets the Title 22 requirements for non-contact vineyard irrigation use. In conjunction with the preparation of this engineering report, the SMCSD's engineers contacted several owners of large vineyards in reasonable proximity to the SMCSD WWTP to investigate the feasibility of making future reclaimed water supplies available for vineyard irrigation use. Based on the results of those investigations and discussions, it was determined that there is definite interest on the part of the local vineyard property owners in acquiring a source of reclaimed wastewater for irrigation purposes. The reclaimed water supply would be used to offset existing groundwater pumping from the Paso Robles Groundwater Basin and is consistent with the goals of the Paso Robles GSAs to reduce groundwater pumping in the future to help achieve groundwater sustainability under the requirements of SGMA, which was signed into California Law in 2014.

In addition to the potential benefits to the Paso Robles Groundwater Basin that could occur by offsetting existing and future agricultural groundwater pumping, the distribution of reclaimed water by the SMCSD to large land areas, in lieu of disposing of the treated effluent into percolation basins, will eliminate the localized salt loading to the shallow subsurface that occurs under existing conditions. As is evident in Figure Nos 5.1 and 5.2, the existing WWTP effluent contains sodium and chloride concentrations in excess of those found in the local water supply.

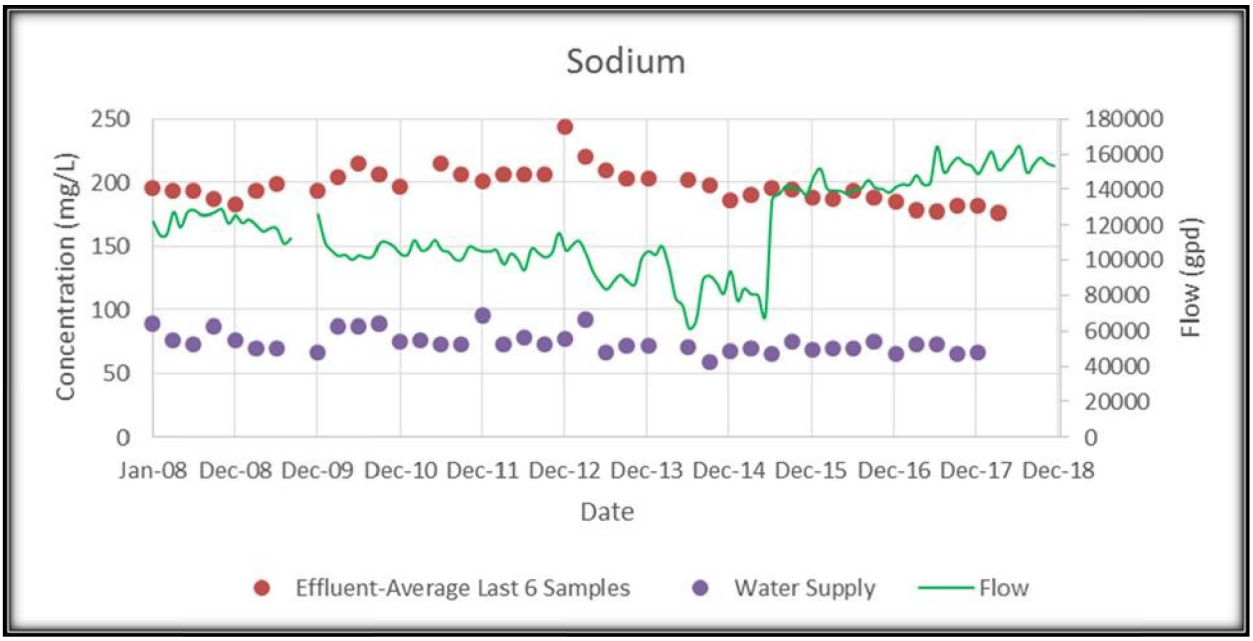


Figure 5.1. Sodium Excess Concentration Levels Observed in Effluent Sampling

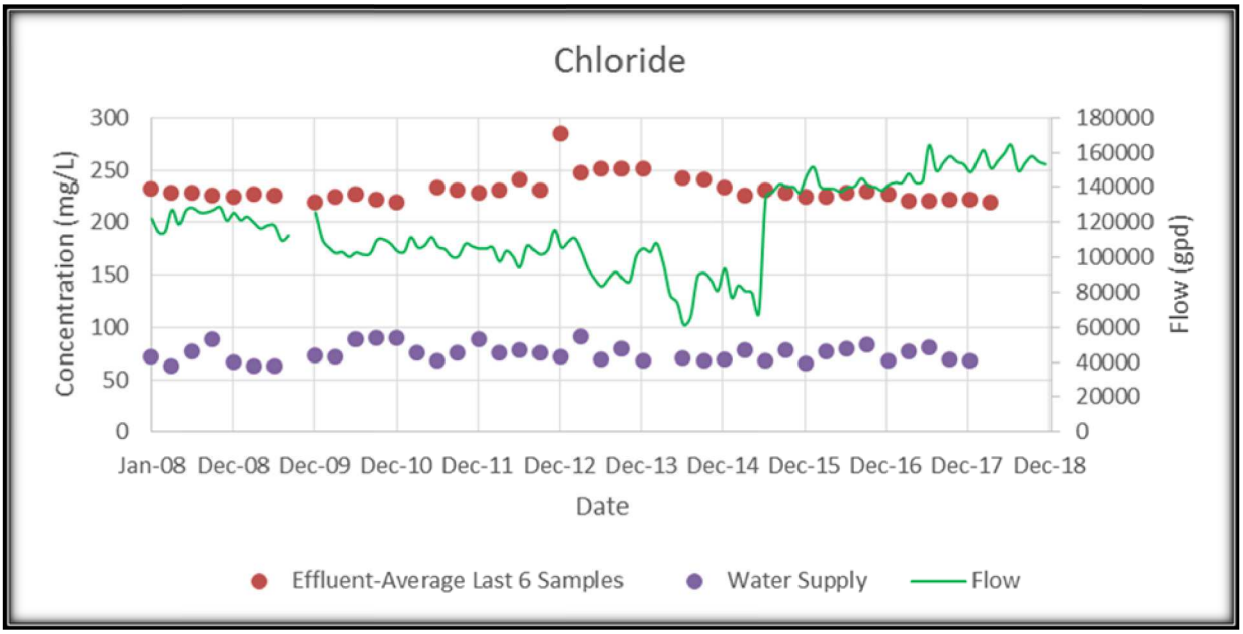


Figure 5.2. Chloride Excess Concentration Levels Observed in Effluent Sampling

No significant reduction in salt (or TDS) concentrations is anticipated to occur with the construction of any of the previously described Top Ranked WWTP configurations. However, under a scenario whereby the reclaimed water supply would be conveyed to local vineyards and blended with irrigation groundwater supplies from vineyard supply wells, blended irrigation water could be produced that is suitable for vineyard irrigation. The resulting loading of salts (and other TDS) could be substantially reduced as the blended reclaimed water is distributed over extremely large land areas and preclude the

localized percolation of waters with elevated salt concentrations. The potential benefits of this approach include the following:

- Recycled water that meets Title 22 disinfected secondary standards can be used for vineyard drip irrigation systems
- Mixing recycled water with well water produced by vineyards will produce an irrigation supply that is suitable for vine health
- Eliminate the percolation of the effluent with high salt concentrations into the groundwater aquifer
- Distribute the produced mass of salt over a significant area (minimal adverse impact to the groundwater basin)
- Reduced pumping from nearby vineyard irrigation wells
- Potential significant long-term income source for SMCSD

For the purposes of the engineering study, a conceptual design for a reclaimed water ("purple pipe") distribution system was developed. This conceptual design was based on multiple discussions with SMCSD staff, several local large vineyard owners, and representatives from E & J Gallo Winery's Courtside Cellars. The conceptual design will incorporate tertiary treatment processes which will allow the SMCSD to produce a recycled water supply that will be suitable for agricultural crop and landscape irrigation. When the new WWTP comes online, the SMCSD will be able to supply treated effluent to large vineyard operations in the immediate vicinity of the SMCSD, as well as potentially provide irrigation water supplies to parks, schools and HOA's within the SMCSD boundary. This treated effluent supply will directly offset the use of groundwater by decreasing the amount of groundwater being pumped from the Paso Robles Groundwater Basin, not only by the SMCSD but by adjacent vineyard operations.

Incorporating wastewater flows from Courtside Cellars, when the new WWTP is fully operational, the SMCSD will be able to provide in excess of 200 AF/YR of treated effluent that can be used to directly replace groundwater pumping in the northwestern portion of the Paso Robles groundwater basin. That amount will increase to approximately 520 AF/YR over the next 30 years. A graphical depiction of the proposed recycled water transmission and distribution system is included as Figure 5.3. The estimated capital costs which are associated with this system are included in the capital cost estimates for each of the Top Ranked WWTP configurations.

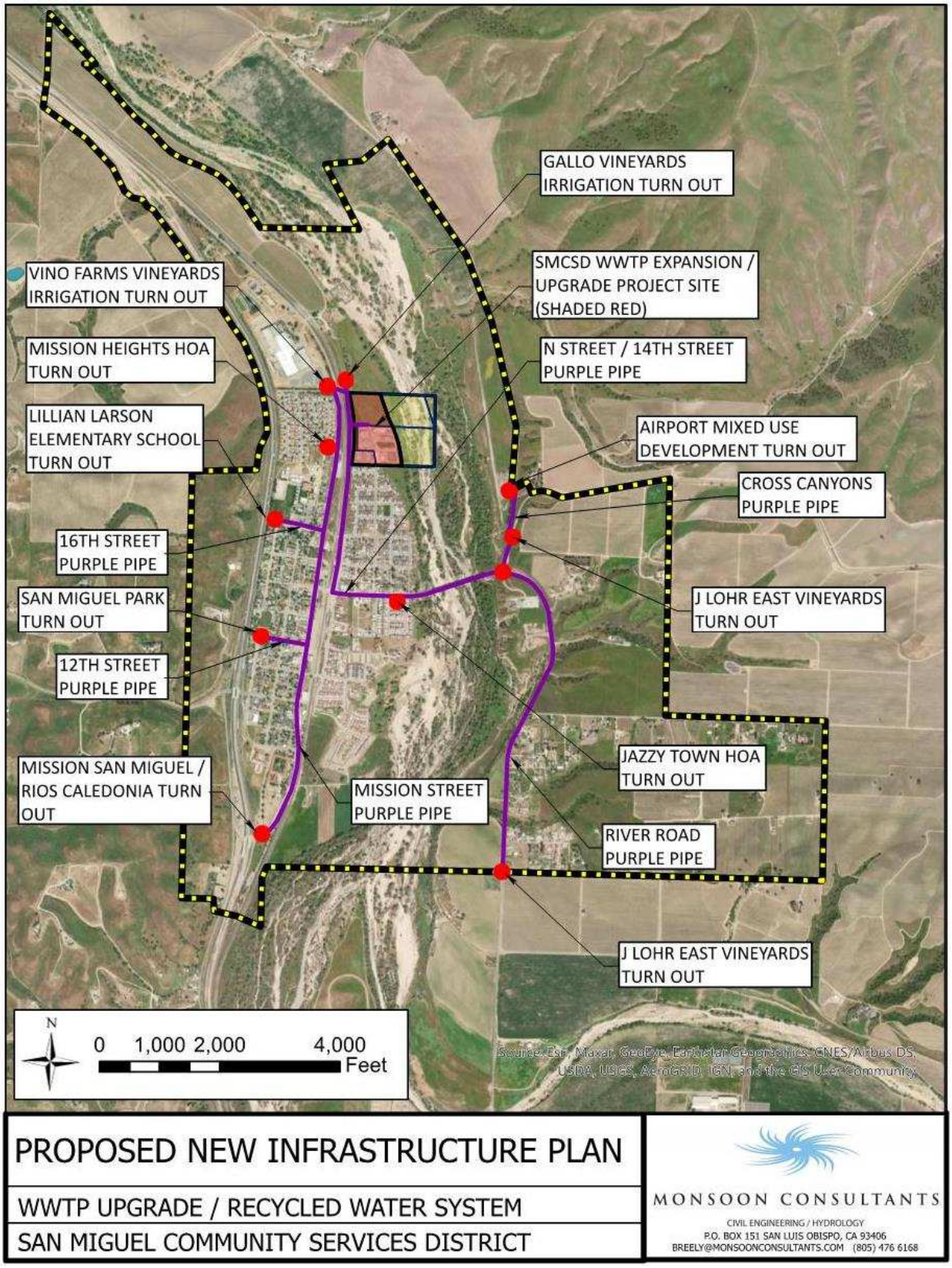


Figure 5.3. Proposed SMCSD Title 22 Recycled Water Transmission Pipeline Alignment

For the purposes of determining which of the Top Ranked WWTP configurations will best meet the requirements of the SMCSD in both the near term and in the future, a comparative analysis was performed on the three (3) "Short Listed" alternatives described at the end of Section 4 above. The comparative analysis includes consideration of both life cycle costs and non-monetary factors and is described in the following sections.

5a. Life Cycle Cost Analysis

A life cycle present worth cost analysis was performed on each of the three alternatives described above to evaluate the present and future costs for the comparison of alternatives. Results of the analysis are shown in the table below.

Table 5.1. Life Cycle Cost Analysis

	A	B	C	D	E	A+C+E
Project Alternatives	**Capital Cost***	**Annual O&M**	**P.W. O&M P/A, 1.2%, 20 years** (PW Factor = 17.4972)	**Salvage Value***	**P.W. Salvage P/F, 1.2%, 20 yrs.** (PW Factor = 0.7711)	**Net Present Worth**
Retrofitted Aerated Pond	$12,006,438	$609,570	$10,665,762	$2,401,288	$1,851,517	$24,523,717
Membrane Bioreactor	$12,161,438	$626,810	$10,967,414	$2,432,288	$1,875,419	$25,004,271
Sequencing Batch Reactor	$12,065,438	$595,806	$10,424,931	$2,413,088	$1,860,615	$24,350,984

Notes:

**Capital Cost:* Includes total construction and non-construction costs to complete the project

**Salvage Value:* Estimate based on the assumed life of an alternative. The Salvage Value can simply be straight-line depreciated for the analysis period (typically 20 years). For example: a project with a 25-year useful life will have a Salvage Value of 20% of the Capital Cost after 20 years.

5b. Non-Monetary Factors

Non-monetary factors that were included in the alternatives analysis include groundwater basin sustainability considerations, odor mitigation, staff requirements, reliability, construction feasibility, ease of O&M, adaptability/scalability, effluent quality, and footprint.

5c. Evaluation of Alternatives

The same ten (10) distinct evaluation criteria that were used to evaluate the various treatment process alternatives were applied with consideration given based on the needs and requirements of the WWTP infrastructure and operations/maintenance requirements. A weighted score, based on a maximum of 100, was assigned to each criterion. Criteria deemed to have greater importance were weighted higher. The criteria were based on treatment compatibility with the SMCSD's goals to capture the critical elements of each unit process. In the Ranking Matrix, each alternative was assigned scores for each criterion using a 1-5 scale, in accordance with the following:

Table 5.2. Ranking Criterion Matrix

Score	Definition
5	Satisfies Projects needs with multiple advantages
4	Satisfies Projects needs with few advantages
3	Satisfies Projects needs
2	Satisfies Projects needs with few disadvantages
1	Satisfies Projects needs with multiple Disadvantages

The results of the comparative analysis are summarized in Table 5.3. Based on the results of the analysis, the highest-ranking WWTP configuration was determined to be the Membrane Bioreactor alternative.

Table 5.3. WWTP Configuration Ranking Matrix

Criteria	Weight(%)	Recommended Treatment Systems					
		Retro-Fitted Aerated Ponds		Sequencing Batch Reactor (SBR)		Membrane BioReactor	
		Raw	Weighted	Raw	Weighted	Raw	Weighted
Capital Cost	20	4	0.8	4	0.8	3.5	0.7
Operating Cost	20	3	0.6	4	0.8	3	0.6
Odor Mitigation	5	3	0.15	5	0.25	5	0.25
Staff Requirement	5	4	0.2	3	0.15	4	0.2
Reliability	10	3.5	0.35	4	0.4	5	0.5
Construction Feasibility	10	5	0.5	4	0.4	4	0.4
Ease of O&M	5	3	0.15	3	0.15	4	0.2
Adaptability/ Scalability	5	3	0.15	4	0.2	4.5	0.225
Effluent Quality	10	3.5	0.35	4	0.4	5	0.5
Footprint	10	5	0.5	4	0.4	4	0.4
Total	**100**		**3.75**		**3.95**		**3.975**

Based upon the evaluation performed, the Membrane Bioreactor alternative has been determined to be the appropriate solution for the proposed expansion/upgrade of the existing SMCSD WWTP. This alternative will both meet the SMCSD's service requirements for a 30-year horizon and provide reclaimed water to the surrounding agricultural community and potentially local parks, schools, and landscaped areas for irrigation purposes. Utilizing reclaimed water for irrigation will allow for reductions in groundwater pumping from the Paso Robles Groundwater Basin.

6 PROPOSED PROJECT

The propose SMCSD WWTP expansion/upgrade project increases the SMCSD wastewater treatment capacity from the currently permitted amount of 200,000 GPD, to that required to serve the community and its growth through the year 2050 (i.e. 500,000 GPD capacity). The proposed project also includes provisions to treat the WWTP effluent to a level suitable for the irrigation of vineyards with no contact with the edible portion of the plant (e.g. drip irrigation) per Title 22 requirements. The proposed solution provides adequate wastewater treatment capabilities for the current, and foreseeable service area while also providing a sustainable irrigation source for the surrounding agricultural community. The SMCSD is currently negotiating a service agreement with the surrounding agricultural community to monetize the treated effluent. The preliminary design of the proposed WWTP solution is detailed below. A site map detailing the location of proposed WWTP, relative to the SMCSD service area, is provided in Figure 6.1.

The District is considering purchasing two parcels (APNs 021-051-020 and 021-051-022), which are currently owned by the Union Pacific Railroad. APN 021-051-020 is located immediately west of the existing and expansion WWTP properties. APN 021-051-022 is located directly south of APN 021-051-020 and connects to 16th Street at the southerly end of the parcel. Acquisition of these two parcels will provide the District with approximately 6.8 additional acres of land outside of the 100-year floodplain for future WWTP expansion.

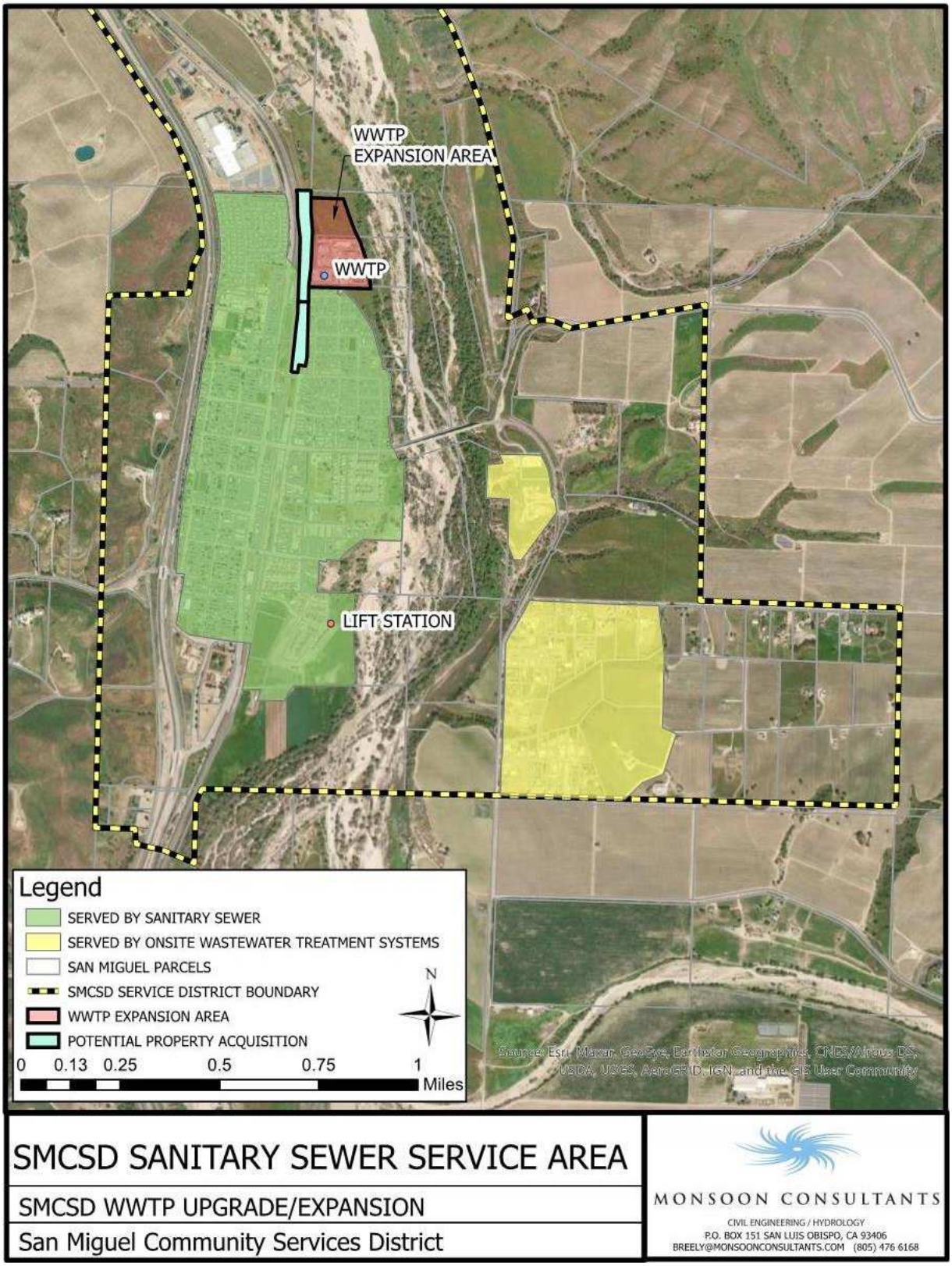


Figure 6.1. Location Map Detailing SMCSD Service Area, Location of Existing WWTP, and Location of Proposed WWTP Expansion.

6a. Preliminary Project Design

Preliminary design details specifically pertaining to Wastewater/Reuse (collection system/reclaimed water system layout, pumping stations, and treatment) and Solid Waste for the full-buildout, 500,000 GPD capacity WWTP are provided in the sections that follow. In addition to the proposed facilities and equipment directly providing wastewater treatment, the proposed SMCSD WWTP expansion/upgrade includes the following supporting facilities deemed necessary for the safe and efficient operations through the year 2050: septic receiving station, office and laboratory facilities, additional maintenance and equipment storage/shop facilities, upgrade and modernization of the electrical, controls and SCADA systems, and upgrade of backup power generation facilities. The SMCSD has already acquired the land where the expanded WWTP will be built.

i. Drinking Water

The proposed WWTP upgrade and expansion project will benefit local drinking water supplies in several ways. One benefit is the reduction in groundwater pumping within the Paso Robles Groundwater Basin, which will occur as a result of the utilization of treated effluent recycled water in lieu of pumping by local vineyards, schools, parks, and other landscaped features. An additional benefit to the drinking water supply will be a reduction in total nitrogen being introduced into the subsurface as a result of the advanced treatment technologies being proposed for implementation.

ii. Wastewater/Reuse

The SMCSD proposes to upgrade/expand its current WWTP in two primary phases. Phase One will produce effluent that meets or exceeds permitting requirements per the Regional Board. Furthermore, given the desire to reuse the WWTP effluent as agricultural irrigation, the effluent will meet or exceed Title 22 requirements as a non-edible contact irrigation source. Phase One of the project is detailed in Collection System/Reclaimed Water System Layout, Pumping Stations, and Treatment sections below.

The SMCSD plans to complete Phase Two immediately after Phase One. Phase Two will be built in collaboration with the surrounding agricultural community. For the purposes of this engineering study, a conceptual design for a reclaimed water distribution system was developed. This conceptual design was based on multiple discussions with SMCSD staff, several local large vineyard owners, and representatives from E & J Gallo Winery's Courtside Cellars. When the new WWTP comes online, the SMCSD will be able to supply treated effluent to large vineyard operations in the immediate vicinity of the SMCSD, as well as potentially provide irrigation water supplies to parks, schools and HOA's within the SMCSD boundary. This treated effluent supply (via a "purple pipe" distribution system) will directly offset the use of fresh groundwater, thereby decreasing the amount of groundwater being pumped from the Paso Robles Groundwater Basin, not only by the SMCSD but also by adjacent vineyard operations.

As discussed previously, the SMCSD is also in discussions with E & J Gallo Winery to take and treat the Courtside Cellars wastewater to a tertiary level and add it the supply of treated effluent for in lieu use. When the new WWTP is fully operational, the SMCSD will be able to provide in excess of 200 AF/YR of

treated effluent that can be used to directly replace groundwater pumping in the northwestern portion of the Paso Robles groundwater basin. That amount will increase to approximately 520 AF/YR over the next 30 years.

The proposed SMCSD WWTP preliminary site plan is provided in Figure 6.2. The treatment processing equipment facility pad will provide space for the Membrane Bioreactor and equipment, treatment building with blowers, RAS pumps, sodium hypochlorite/citric acid equipment, and disinfection aerobic digesters, biosolids dewatering system, and in-vessel UV disinfection. Specific components proposed for the WWTP are detailed in the following sections of this document.

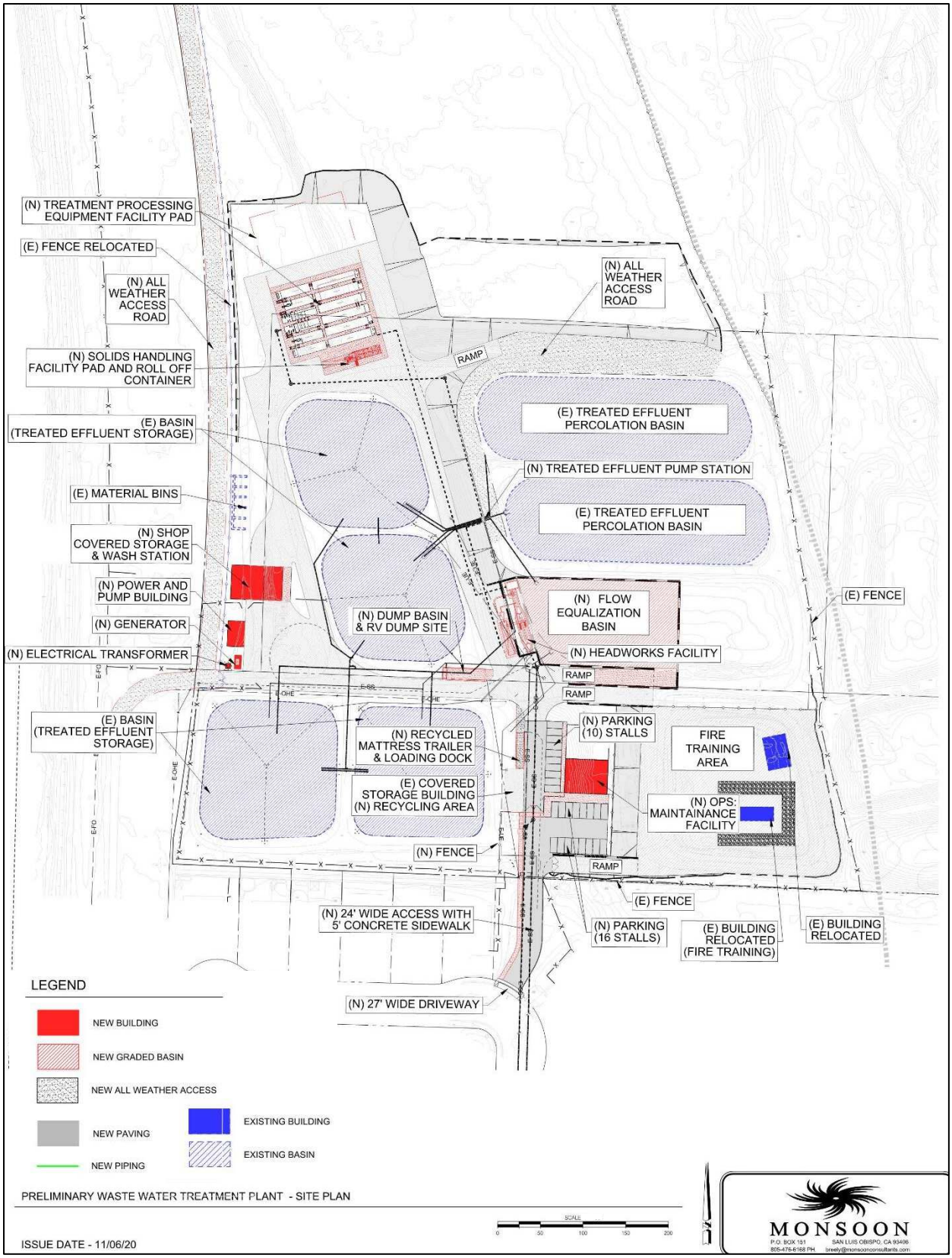


Figure 6.2. Preliminary Site Layout of Proposed SMCSD WWTP

Collection System/Reclaimed Water System Layout

The preliminary layout of the proposed WWTP is provided in Figure 6.2 above. The proposed treatment process is schematically shown in Figure 6.3.

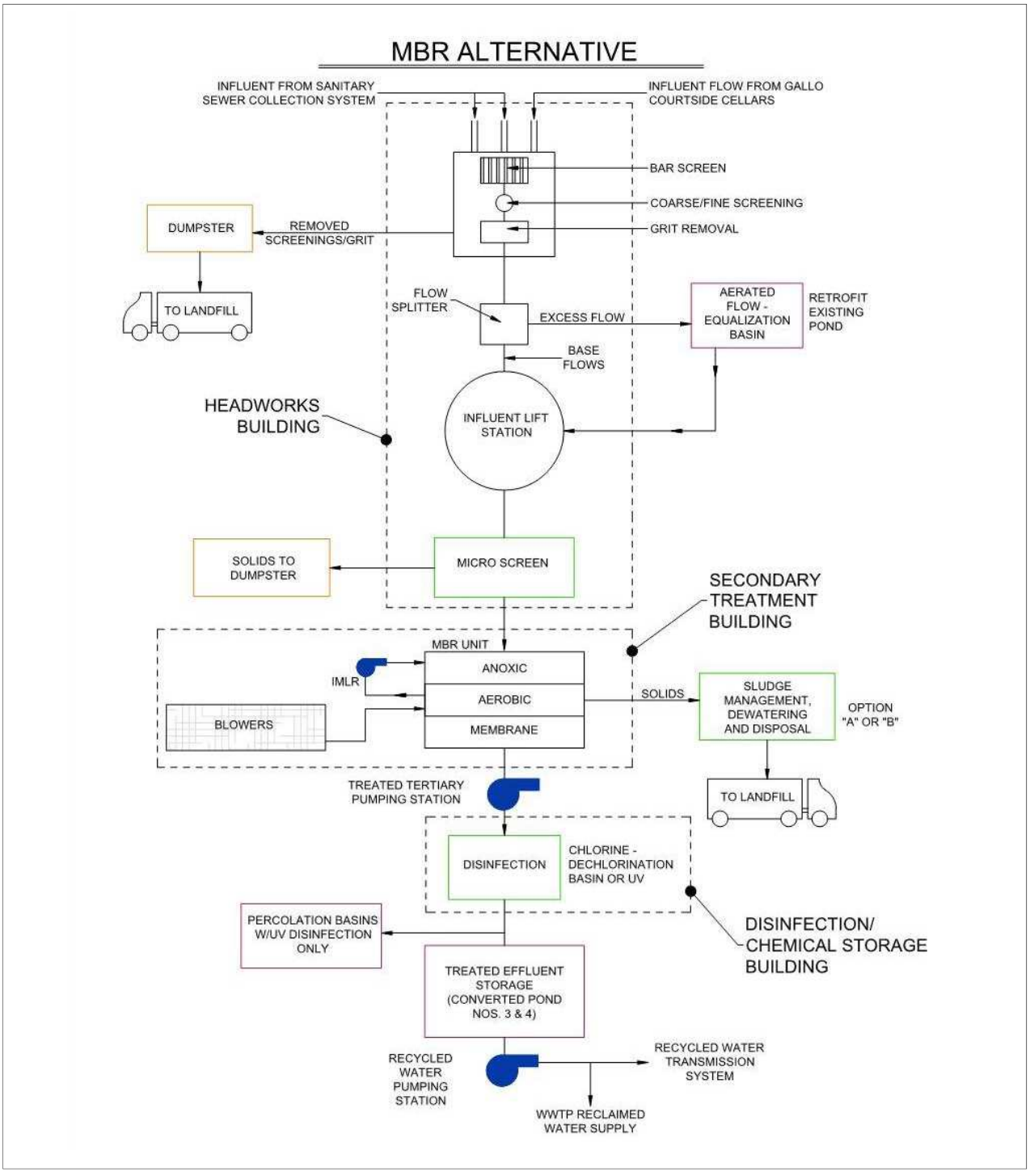


Figure 6.3. Schematic Process Flow for Proposed WWTP

While all construction, including installation of piping, valving, fittings, pumps, etc. will be maintained within the limits of the existing SMCSD WWTP property, the detailed design of pipe layout has yet to be performed.

Pumping Requirements

There are ten pumps included in the effluent treatment portion of the proposed WWTP. Additionally, there is one pump associated with the biosolids handling and 2 pumps proposed for final treated effluent management. As the existing pumps have reached their design life, the proposed WWTP will utilize all new pumps and pump componentry. The pumps that will need to be purchased and installed as part of the proposed project are detailed in Table 6.1.

Table 6.1. Pumps Required as Part of the Proposed WWTP

Proposed Pump Schedule					
Purpose	**QTY**	**Type**	**Size (HP)**	**Location**	**Power Req'd (KWH/day)**
Lift Station	2	Submersible	20	Lift Station	358
Grit Classifier Pump	1	Centrifugal	5	Headworks	11
Filtrate Pump	2	Centrifugal	5	MBR	120
RAS Pump	2	Centrifugal	7.5	MBR	187
IR Pump	2	Centrifugal	5	MBR	58
Dosing Pump	1	Centrifugal	0.25	MBR	9
Polymer Dosing Pump	1	Centrifugal	0.5	Sludge Management	3
Recycled Water Pump	2	Submersible	25	Treated Effluent/Recycled Water Pump Station	358

Treatment

The proposed SMCSD WWTP expansion/upgrade will increase the permitted daily capacity of the WWTP from 200,000 GPD to 500,000 GPD. The proposed capacity of 500,000 GPD has been shown to meet or exceed the SMCSD's wastewater needs through the year 2050. To achieve safe and efficient wastewater treatment service through 2050, the following treatment equipment and facilities will be implemented.

Headworks

Construction of the new headworks structure will include course bar screens, a grit removal system, and fine screening provisions. Influent screens provide a physical barrier between the influent sewer and the WWTP site piping and equipment. The influent bar screens operate automatically based on either time or differential water level across the screen. The screenings that are removed from the wastewater by the mechanical screens are deposited onto a conveyor, and the conveyor moves the screenings to a washer compactor where the wet screenings are sprayed with water as they are slowly compacted using a shafted screw. The screenings are dewatered as they are pushed by the screw into a discharge chute. The water

removed from the screenings is directed back to the influent and the washed and compacted screenings are deposited into a dumpster for disposal at a landfill. Critical supporting equipment for screens includes washers, compactors, and dewatering equipment to return organics to the downstream processes, reduce odors, reduce screening volume, and reduced corresponding disposal cost. Grit removal is performed to protect downstream mechanical equipment from abrasion, reduce potential for deposits in pipelines and channels, and reduce frequency of sludge digester leaning caused by grit accumulation. Grit removal is most commonly placed after screening and prior to primary sedimentation and secondary treatment.

Primary Treatment

Conversion of an existing primary treatment pond (Primary Pond No. 1) to an influent equalization basin with submerged fine and course bubble aeration systems will be performed to provide a nominal level of primary influent treatment and odor control. This option was selected in conjunction with the SMCSD WWTP operations staff to both optimize land usage as well as minimize project costs.

Influent Lift Station

Construction of a new influent lift station will be required as part of this work.

Secondary and Tertiary Treatment

Installation of a micro-screening system in series with a modular membrane bioreactor (MBR). The modularity of the MBR will be employed initially to meet current SMCSD demands, while providing the ability to expand for projected future needs through the year 2050. MBR technology includes biological treatment with activated sludge. Solids separation is accomplished with membranes integral to the biological system rather than conventional secondary clarifiers. The submerged membranes are operated under vacuum with product water drawn through the membranes with permeate pumps or using a gravity-assist siphon system. The solids remaining on the surface of the membranes are returned to the head of the aeration basins. A portion of the solids are wasted just as with conventional activated sludge. MBR membranes provide a barrier to solids; therefore, an MBR produces higher quality product water (better than conventional tertiary filtration) and does so more consistently than conventional activated sludge clarifiers, which are subject to upsets. The positive solids barrier also allows operation at high solids loading rates, which results in a smaller treatment footprint.

Disinfection

Installation of an Ultraviolet (UV) disinfection system is proposed as part of this work. Ultraviolet (UV) disinfection uses UV radiation (light) to destroy or inactivate disease-causing organisms. The disinfection proposed here will be manifested in pressurized systems, where the UV lamps are contained within vessels and water is pumped through the system of vessels at a specified flow rate. The system will utilize low pressure and high intensity lamps, requiring fewer lamps than the previous low-pressure systems and

less energy than medium-pressure systems. The UV system is to include an in-situ lamp chemical wiping mechanism to minimize the need to remove lamps for manual cleaning.

Disposal/Reuse

WWTP effluent will primarily be handled through reuse. The selection of an ultraviolet disinfection system as part of the WWTP expansion/upgrade affords the SMCSD the opportunity to sell the treated effluent as applicable for use as drip irrigation for non-edible agriculture, per Title 22. As such, the proposed project includes the installation of two 8-inch HDPE water transmission and distribution pipelines (purple pipes) to distribute the WWTP effluent to large vineyards to the east and west of the of the proposed facility. The length of each pipe segment is reported in Table 6.2. The reclaimed water supply would be used to offset existing groundwater pumping from the Paso Robles Groundwater Basin and is consistent with the goals of the Paso Robles GSAs to reduce groundwater pumping in the future to help achieve groundwater sustainability under the requirements of SGMA. A graphical depiction of the proposed recycled water transmission and distribution system is included as Figure 6.4.

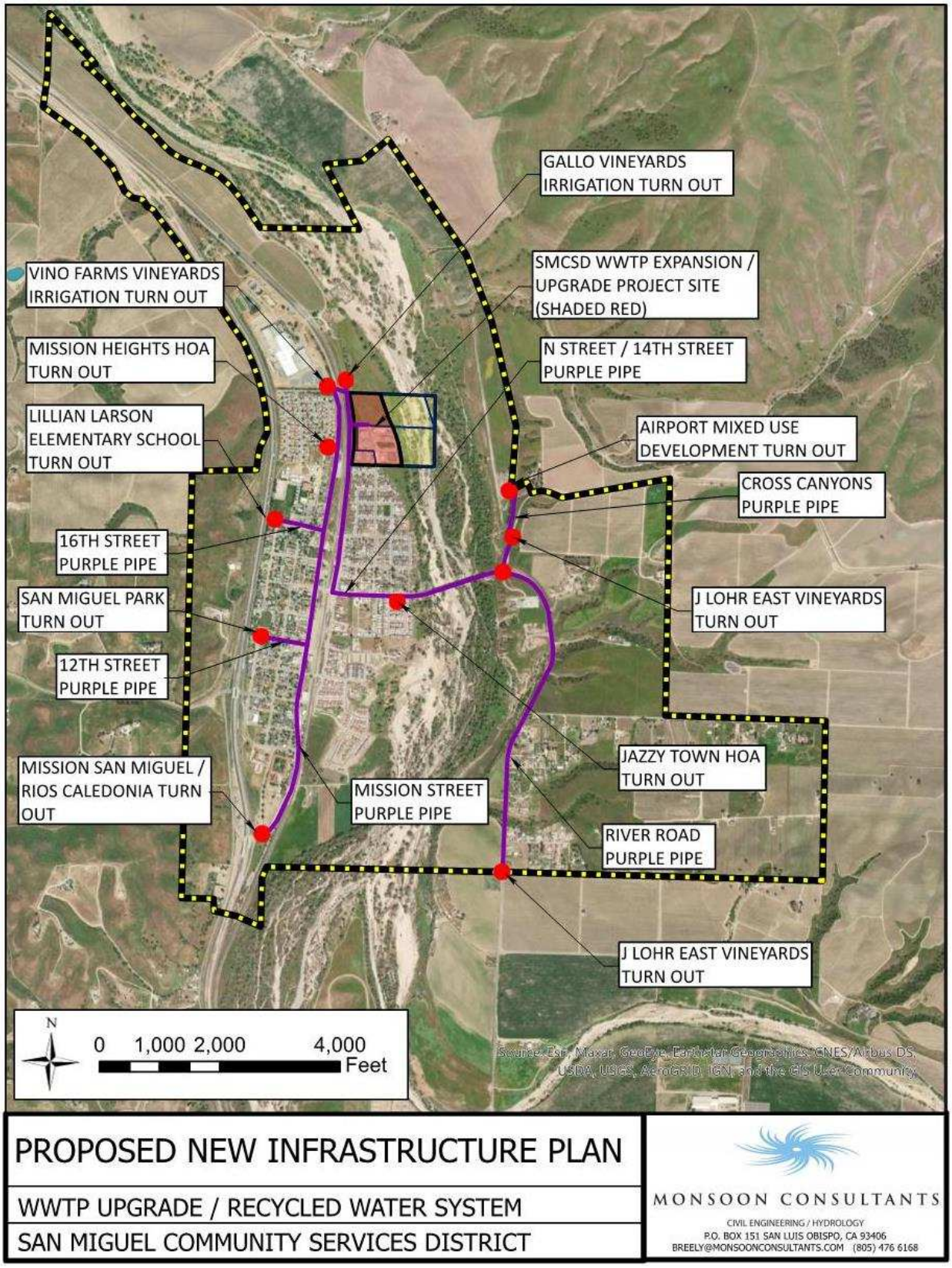


Figure 6.4. Recycled Water Transmission Pipeline Alignment

Table 6.2. Recycled Water Transmission Pipeline Lengths

Pipe Segment	Length (ft)
Mission St Purple Pipe	7,695
12th St Purple Pipe	786
16th St Purple Pipe	833
N/14th St Purple Pipe	2,912
River Rd Purple Pipe	5,577
Cross Canyons Purple Pipe	1,520

Through discussion with local vineyards, the SMCSD has determined that the vineyards have the capacity to store all the treated effluent up to the 30-year buildout (0.5 MGD) in lined irrigation ponds. If the vineyards are unable to store the effluent, treated effluent will be stored in lined ponds on the WWTP property. In the event that there is no demand or storage space for treated effluent, secondary effluent discharge will be handled via land disposal (i.e. percolation ponds).

iii. Solid Waste

Upon conveyance from the MBR, the solid waste accumulated at the WWTP will be processed by use of a new aerobic digester. Dewatering will be handled by a new screw press or sludge container filter. Ultimately, the stabilized and dewatered sludge will be transported to a local landfill for disposal. A schematic detailing the proposed biosolids processing and disposal is provided in Figure 6.5.

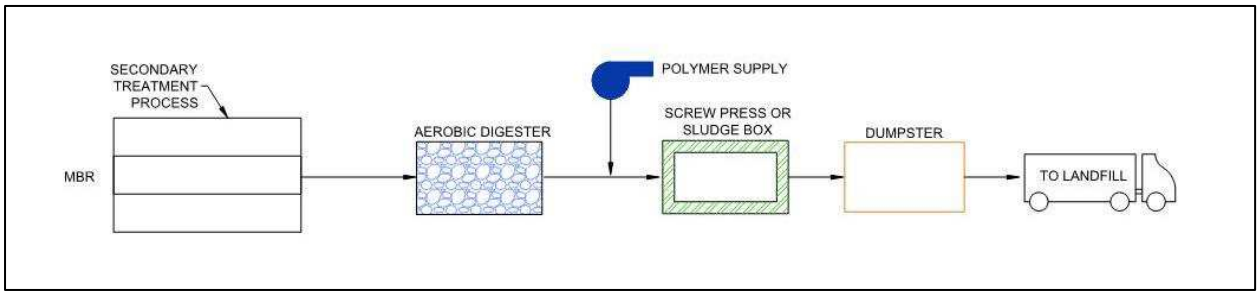


Figure 6.5. Schematic of proposed Biosolids Handling and Disposal

The details of the biosolids handling components selected as part this proposal are described below.

Aerobic Digester

An aerobic digestor will be installed to reduce the volume of sewage sludge and stabilize the biosolids for subsequent processing. The aerobic digester design proposed here is an open-air concrete basin capable of up to 90% volume reduction given a 21- to 40-day retention at 15-35 degrees Celsius. The aerobic digestor will include aeration, by use of both course and fine bubbles, to supply oxygen to the bacteria breaking down the sludge, deal with odor prevention, and keep the digester contents mixed.

Sludge Dewatering

A dewatering screw press or gravity container filter (i.e. sludge box) will be installed as part of the sludge management system proposed in this work.

Disposal

After drying and stabilization, the biosolids will be transported to a local landfill for disposal.

iv. Stormwater

The proposed WWTP upgrade/expansion project will require that a significant amount of the existing site be regraded to accommodate the new and upgraded facilities and bring the facilities out of the 100-year floodplain. In conjunction with the site redesign process, the SMCSD intends to reshape the site to maximize the capture and storage of stormwater for the purposes of beneficial reuse. The details of how these stormwater control and reuse features will be implemented will be determined during the design phase of the project.

6b. Project Schedule

The SMCSD understands that the upgrade and expansion of the WWTP and appurtenant facilities must be accomplished in an accelerated timeframe to avoid a situation which would result in wastewater treatment capacity limitations. Among other things, the lack of sufficient treatment capacity could result in the SMCSD's inability to provide service to new housing projects being built within the SMCSD boundaries. Therefore, the SMCSD intends to pursue an aggressive project schedule which is depicted in Table 6.3. As is depicted in the schedule, the District anticipates construction the project in three (3) phases in anticipation of funding limitations. The initial phase will include general site development (i.e. grading, drainage, access drives, site utilities, etc; new plant entrance and staff / visitor parking; new operations & administration facility; new electrical & controls facility; headworks, pre-engineered MBR plant (0.35 MGD); biosolids handling facilities; UV treated effluent disinfection; treated effluent pumping station; on-site recycled water distribution & fire protection infrastructure; and other critical project elements required to bring the new plant to an operational status. Phase 1 improvements are planned to be completed by December 2021. Improvements to be constructed in Phase 2 will include the construction of the septage & RV dump station; mattress recycling station; maintenance shop & equipment storage facility; and the permanent paved surfacing of the interior access drives and circulation / haul roads. Phase 2 improvements are planned to be completed by July 2022. Improvements to be constructed in Phase 3 will include the expansion of the pre-engineered MBR plant to 0.50 MGD; the construction of a building to enclose and environmentally control the pre-engineered MBR and solids handling process equipment; and construct the recycled water ("purple pipe'') distribution system. Other improvements, including the installation of site security fencing; upgrading the existing WWTP fueling station; relocation of existing metal buildings; site stormwater management & erosion control facilities; site landscaping; and other miscellaneous site improvements, will be performed by District staff and funded through local funds.

Table 6.3. Project Schedule

PROJECT MILESTONE	ESTIMATED START DATE	ESTIMATED COMPLETION DATE
Update District Water & Wastewater Masterplan to include WWTP Expansion & Renovation	19-Jun-17	17-Nov-17
Receive Notification from Central Coast Regional Waterboard that WWTP Expansion & Upgrade is Required	18-Jun-18	18-Jun-18
Complete Water & Wastewater Rate Study	15-Dec-16	27-Jul-18
Acquisition of Land for WWTP Expansion & Upgrade	14-Dec-17	23-Apr-18
Implement Proposition 218 Process	6-Apr-18	24-May-18
District Board Adopts Water & Wastewater Rate Increase	27-Jul-18	27-Jul-18
Complete WWTP Expansion & Upgrade Engineering Study	27-Sep-18	31-Oct-20
Complete Preliminary Engineering & Design Development for WWTP	19-Apr-19	31-Dec-20
Initiate Project Construction Financing Activities / Submit Applications to Funding Agencies	1-Feb-20	1-Jun-21
Complete Environmental (CEQA & NEPA) Review	27-Feb-20	31-Jan-21
Selection of Final WWTP Expansion & Upgrade Configuration and Process Equipment Vendors	1-Mar-20	1-Apr-21
Complete Final Design, Construction, Bidding & Contract Documents	1-Jun-20	30-Apr-21
Complete and Submit Required Permit Applications to Appropriate Agencies	1-Oct-20	31-May-21
Secure Required Permits to Construct	1-Apr-21	30-Jun-21
Secure Funding for Construction	1-Sep-20	30-Jun-21
Secure Permanent Project Financing	1-Apr-21	30-Nov-21
Advertise Project Solicitation for Bids & Award Construction Contract	1-Jun-21	31-Jan-22
Project Construction - Phase 1	1-Jul-21	31-Dec-21
Project Construction - Phase 2	1-Jan-22	30-Apr-22
Project Construction - Phase 3 (Phase 3 based on population growth rates)	TBD	TBD
Project Construction - District Force Account	1-Jan-21	30-Apr-22
Final Project Completion, Contract Close-Out & Project Acceptance	1-May-22	30-Jun-22

6c. Permit Requirements

Final permitting requirements will be determined from the results of the CEQA/NEPA study and will likely come from the following agencies:

- County of San Luis Obispo (for approval of grading/building permits and conditional use permit for Residential Suburban parcel)
- State Water Resources Control Board
- Central Coast Regional Water Quality Control Board (for new WDR general permit)
- San Luis Obispo County Air Pollution Control District
- California Department of Fish and Game
- Union Pacific Railroad
- Caltrans
- California Department of Water Resources

It is anticipated that the proposed disposal/reuse (purple pipe) system will also require permitting from the agencies listed above. Where the proposed pipelines follow public roads, the SMCSD will be required to meet all public improvement standards required by the County of San Luis Obispo and follow the requirements set forth in the 2019 California Building Code. The SMCSD will need to acquire right of way encroachment permits from the County of San Luis Obispo, Union Pacific Railroad, and Caltrans (where the pipeline crosses the railroad and US-101). The SMCSD is in preliminary discussion with local vineyard owners to determine the terms of agreement for construction and maintenance of the treated effluent distribution system.

6d. Sustainability Considerations

The proposed WWTP Upgrade & Expansion Project incorporates the following sustainability considerations:

i) Treated effluent will meet Title 22 requirements for non-contact irrigation of vineyards and landscape & turf irrigation. The reclaimed water supply would be used to offset existing groundwater pumping from the Paso Robles Groundwater Basin and is consistent with the goals of the Paso Robles GSAs, as stated in the GSP, to reduce groundwater pumping in the future to help achieve groundwater sustainability under the requirements of SGMA. Reducing pumping impacts on the groundwater table may also result in rising aquifer levels and potentially re-establishing groundwater-dependent ecosystems.

ii) The distribution of reclaimed water by the SMCSD to large land areas, in lieu of disposing of the treated effluent into percolation basins, will eliminate the localized salt loading to the shallow subsurface that occurs under existing conditions.

iii) This option provides for an economical and environmentally sustainable solution as it utilizes re-purposed facilities for the WWTP expansion/upgrade.

iv) The project will incorporate enhanced stormwater capture, storage and reuse features that will increase the quality of the surface and groundwater systems in the area and the Salinas River.

6e. Total Project Cost Estimate

The following Table 6.4 summarizes the total estimated capital & construction related costs for both the proposed SMCSD WWTP upgrade and expansion and proposed disposal/reuse system. Tables 6.5 through 6.8 break down the costs associated with each project phase. The total project cost estimate is included in Table 6.9.

Table 6.4. Total capital cost for WWTP upgrade/expansion

SAN MIGUEL WWTP RENOVATION & EXPANSION CAPITAL COST - SUMMARY		
PROJECT PHASE	**DESCRIPTION OF PRIMARY IMPROVEMENTS**	**ESTIMATED CAPITAL COST**
1	General site development, grading, new plant entrance & staff / visitor parking, yard piping, operations / administration facility, electrical & controls Facility, headworks, MBR pre-engineered treatment plant, biosolids handling facility, treated effluent pumping station	$9,753,145
2	Pave interior access roads, septage & RV dump station, mattress recycling station, shop & equipment storage facility	$1,011,633
3	Expand MBR pre-engineered treatment plant to 0.50 MGD, construct enclosure for MBR & solids handling equipment, construct recycled water (purple pipe) distribution infrastructure	$4,475,000
DISTRICT FORCE ACCOUNT WORK	Site perimeter & interior security fencing, upgrade WWTP fueling station, site landscaping, stormwater drainage & erosion control facilities, misc. site improvements, relocate existing metal buildings, on-site recycled water distribution & fire protection system.	$169,170
	TOTAL ESTIMATED CONSTRUCTION COST	$15,408,948

Table 6.5. Total capital cost for WWTP upgrade/expansion – Phase 1

SAN MIGUEL WWTP RENOVATION & EXPANSION CAPITAL COST - PHASE 1				
WORK ITEM	**UNIT**	**UNIT PRICE**	**QUANTITY**	**ESTIMATED COST**
GENERAL WWTP SITE DEVELOPMENT				
SITE DEMOLITION & PREPARATION	LS	$75,000	1	$75,000
GATED ENTRANCE W/ AUTOMATED OPENER	LS	$35,000	1	$35,000
CONVERT (E) POND NOS. 1-4 TO TREATED (RECYCLED) WATER STORAGE	EA	$10,000	4	$40,000
EARTHWORK (CUT = FILL)	CY	$10.00	19386	$193,860
EARTHWORK (EXCESS CUT TO BE WASTED ON SITE)	CY	$7.50	82	$615
CRUSHED ROCK "ALL-WEATHER" SURFACING FOR ACCESS ROADS (INSIDE PROJECT)	SF	$1.50	15540	$23,310
CURB & GUTTER	LF	$25	666	$16,650
SIDEWALK	SF	$10	2533	$25,330
CONCRETE DRIVEWAY APPROACH	SF	$9	365	$3,285
ASPHALT PAVEMENT AREA (5" AC OVER 6" CLASS II AGG. BASE) - (OPS/ADMIN FACILITY & ENTRANCE ONLY)	SF	$8.00	12000	$96,000
CONCRETE WALLS - ACCESS ROAD RAMPS	SF	$50	800	$40,000
CONCRETE FOOTINGS - ACCESS ROAD RAMPS	LF	$200	100	$20,000
CONCRETE WALLS - FLOW EQUALIZATION BASIN	SF	$50	9790	$489,500
CONCRETE FOOTINGS - FLOW EQUALIZATION BASIN	LF	$200	472	$94,400
CONCRETE SLAB - FLOW EQUALIZATION BASIN	SF	$15	17367	$260,505
CONCRETE WALLS - HEADWORKS	SF	$50	2569	$128,450
CONCRETE FOOTING - HEADWORKS	LF	$200	140	$28,000
CONCRETE SLAB - HEADWORKS	SF	$15	1650	$24,750
CONCRETE SLAB - ROLLOFF GRIT REMOVAL	SF	$15	644	$9,660
CONCRETE SLAB - MBR AND SOLIDS HANDLING	SF	$15	12112	$181,680
YARD PIPING (PRESSURE)	LF	$65	400	$26,000
CHECK VALVES	EA	$750	1	$750
ELBOWS	EA	$450	2	$900
TEES	EA	$500	1	$500
SANITARY SEWER (GRAVITY)	LF	$100	620	$62,000
MANHOLES	EA	$4,500	6	$27,000
SITE UTILITY SERVICES (WATER / SEWER / ELECTIC / COMM / GAS)	LS	$35,000	1	$35,000

Table 6.5 (continued). Total capital cost for WWTP upgrade/expansion – Phase 1

WORK ITEM	UNIT	UNIT PRICE	QUANTITY	ESTIMATED COST
SITE LIGHTING	LS	$50,000	1	$50,000
SITE ELECTRICAL SYSTEM UPGRADE	LS	$75,000	1	$75,000
SITE INSTRUMENTATION, CONTROLS & SCADA SYSTEMS UPGRADE	LS	$75,000	1	$75,000
BACK-UP GENERATOR (INCLUDING ACOUSTIC ENCLOSURE & APC EQUIPMENT)	LS	$300,000	1	$300,000
GROUNDWATER MONITORING WELLS / INSTRUMENTATION	EA	$55,000	3	$165,000
BUILDINGS / ENCLOSURES / STRUCTURES				
BUILDING - FINISHED SPACE (OFFICES / MEETING / LAVS / LAB / ETC)	SF	$150	2000	$300,000
BUILDING - ELECTRICAL & CONTROLS	SF	$100	1000	$100,000
TERTIARY TREATMENT / PROCESS SYSTEMS				
BAR / COARSE SCREENING SYSTEM	LS	$200,000	1	$200,000
GRIT REMOVAL SYSTEM	LS	$165,000	1	$165,000
INFLUENT LIFT STATION - PUMPS & EQUIPMENT	LS	$200,000	1	$200,000
PACKAGED MBR PLANT W/ FINE SCREENING (.325 MGD PEAK DAY)	LS	$4,800,000	1	$4,800,000
UV EFFLUENT DISINFECTION SYSTEM	LS	$560,000	1	$560,000
PACKAGED BIOSOLIDS DEWATERING SYSTEM	LS	$500,000	1	$500,000
RECYCLED WATER SYSTEM				
RECYCLED WATER PUMPING STATION - STRUCTURE	LS	$75,000	1	$75,000
RECYCLED WATER PUMPING STATION - EQUIPMENT	LS	$200,000	1	$200,000
WWTP RECYCLED WATER DISTRIBUTION SYSTEM (INCLUDING PIPING, HYDRANTS, VALVES, ETC)	LS	$50,000	1	$50,000
ESTIMATED TOTAL CAPITAL COST				$9,753,145

Table 6.6. Total capital cost for WWTP upgrade/expansion – Phase 2

SAN MIGUEL WWTP RENOVATION & EXPANSION CAPITAL COST - PHASE 2				
WORK ITEM	**UNIT**	**UNIT PRICE**	**QUANTITY**	**ESTIMATED COST**
GENERAL WWTP SITE DEVELOPMENT				
ASPHALT PAVEMENT AREA (5" AC OVER 6" CLASS II AGG. BASE) (WWTP INTERIOR ACCESS ROADS)	SF	$8.00	60721	$485,768
CONCRETE WALLS - SEPTAGE & RV DUMP STATION	SF	$50	260	$13,000
CONCRETE FOOTINGS - SEPTAGE & RV DUMP STATION	LF	$100	112	$11,200
CONCRETE SLAB - SEPTAGE & RV DUMP STATION	SF	$15	785	$11,775
CONCRETE WALLS - MATTRESS RECYCLING STATION	SF	$50	196	$9,800
CONCRETE FOOTINGS - MATTRESS RECYCLING STATION	LF	$100	90	$9,000
CONCRETE SLAB - MATTRESS RECYCLING STATION	SF	$15	606	$9,090
SANITARY SEWER (GRAVITY)	LF	$100	120	$12,000
BUILDINGS / ENCLOSURES / STRUCTURES				
BUILDING - SHOP	SF	$125	1500	$187,500
BUILDING - EQUIPMENT & SUPPLY STORAGE	SF	$75	3500	$262,500
ESTIMATED TOTAL CAPITAL COST				$1,011,633

Table 6.7. Total capital cost for WWTP upgrade/expansion – Phase 3

SAN MIGUEL WWTP RENOVATION & EXPANSION CAPITAL COST - PHASE 3				
WORK ITEM	**UNIT**	**UNIT PRICE**	**QUANTITY**	**ESTIMATED COST**
BUILDINGS / ENCLOSURES / STRUCTURES				
ENCLOSURE - MBR PROCESS EQUIPMENT / BLOWERS / CHEMICALS	SF	$75	13000	$975,000
TERTIARY TREATMENT / PROCESS SYSTEMS				
PACKAGED MBR PLANT W/ FINE SCREENING (EXPAND FROM .325 TO 0.50 MGD PEAK DAY)	LS	$1,500,000	1	$1,500,000
RECYCLED WATER SYSTEM				
RECYCLED WATER (PURPLE PIPE) DISTRICT SYSTEM	LS	$2,000,000	1	$2,000,000
ESTIMATED TOTAL CAPITAL COST				$4,475,000

Table 6.8. Total capital cost for WWTP upgrade/expansion – District Force Account

SAN MIGUEL WWTP RENOVATION & EXPANSION CAPITAL COST - DISTRICT FORCE ACCOUNT				
WORK ITEM	**UNIT**	**UNIT PRICE**	**QUANTITY**	**ESTIMATED COST**
GENERAL WWTP SITE DEVELOPMENT				
SITE PERIMETER NEW FENCING	LF	$35	1786	$62,510
SITE PERIMETER RELOCATED FENCING	LF	$20	1083	$21,660
LANDSCAPING / STORMWATER DRAINAGE & MISC SITE IMPROVEMENTS	LS	$25,000	1	$25,000
SITE FUELING STATION UPGRADE	LS	$45,000	1	$45,000
BUILDINGS / ENCLOSURES / STRUCTURES				
RELOCATE EXISTING METAL BUILDINGS	EA	$7,500	2	$15,000
ESTIMATED TOTAL CAPITAL COST				$169,170

Table 6.9. Total Project Costs for WWTP upgrade/expansion

Project Cost Estimate- MBR Alternative		
Item		**Amount**
SMCSD Expansion Property		$239,000.00
Property Purchase / Lease Agreement UPRR*		$150,000.00
Easement Acquisition / Right of Way / Water Rights Agreements		N/A
Bond Counsel/Legal Counsel/Interim Financing Expense		$20,000.00
Environmental Report Services (CEQA/NEPA)		$100,000.00
Engineering Services	**Subtotal**	
Exhibit A		
A1.01 Study and Report Phase	$175,000.00	
A1.02/3 Design Phase	$300,000.00	
A1.04 Bidding Negotiating Phase	$10,000.00	
A1.05 Construction Phase	$25,000.00	
A1.06 Post Construction Phase	$10,000.00	
Exhibit D		
D1.01 Residential Project Representative	$50,000.00	
Total- Engineering Services		$570,000.00
Owner Direct Procurement Agreements	**Subtotal**	
Materials Testing Lab and Special Inspection (const. phase)	$50,000.00	
Electrical Power/Natural Gas Service Fee for New Connection	$25,000.00	
Permits	$25,000.00	
Other	N/A	
Total- Direct Procurement		$100,000.00
Construction Contract (see Table 6.4) (Phases 1 & 2 Only)		$10,764,778.00
Contingency (10%)		$1,076,478.00
Total Estimated Project Cost		$11,841,256.00

*N Street entrance option

6f. Annual Operating Budget

i. Income

The SMCSD completed a water and wastewater rate study in 2018. Based on the results of the rate study, a Prop 218 process was implemented which resulted in the SMCSD adopting new water and wastewater rates in 2018. For Fiscal Year 2019-2020, effective wastewater monthly rates are summarized in Table 6.6.

Table 6.10. SMCSD Wastewater Rates (FY 19-20)

Wastewater Monthly Rates	
	FY 19-20
Single-Family Residential	
Fixed	$89.77
Multi-Family Residential	
Fixed (per unit)	$56.10
Commercial	
Fixed Charge	$67.55
Volumetric (Per CCF of Water Billed)	
Low Strength	$5.32
Medium Strength	$6.03
High Strength	$9.09
Lift Station Charges	
River Zone Charge	$24.05

In March 2020, the SMCSD was providing service to 900 water and 782 wastewater connections (14 business, 742 single family residential, 25 multi-family residential). San Miguel has a total of 809 equivalent dwelling units (EDUs). The annual revenue which is estimated to be generated from the SMCSD's wastewater enterprise during FY 2019-2020 is approximately $1,361,000. Wastewater related expenses for the same period are estimated to be approximately $1,143,000.

ii. Annual O&M Costs

The following Table 6.7 provides the total estimated annual operation and maintenance (O&M) costs for the proposed SMCSD WWTP upgrade and expansion project. Two positions were created for the operation of the proposed WWTP: a WWTP operator lead with a base salary of $63,648 and a WWTP operator with a current salary of $53,040. A summary of the SMCSD's anticipated annual income and expenses through FY 22-23 are presented in Table 6.8. The information included in Table 6.8 is sourced from the SMCSD's Water & Wastewater Rate Study which was prepared by Bartle Wells Associates in 2018.

Table 6.11. SMCSD WWTP Estimated Annual O&M Costs

O&M Cost	$/Year
Personnel	$331,020.00
Administrative (Fees, permits, etc.)	$100,000.00
Water Purchase of Water Treatment	N/A
Insurance	$ 55,000.00
Energy (Fuel and/or Electrical)	$216,810.00
Process Chemicals	N/A
Monitoring and Testing	$ 50,000.00
Professional Services	$ 10,000.00
Residual Disposal	$ 20,000.00
Miscellaneous/Maintenance	$ 25,000.00
Total	$807,830.00

Table 6.12. Annual Operating Budgets (SMCSD Wastewater Enterprise)

Operating Fund	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23
Reserves						
Beginning Unrestricted Balance	$158,110	$0	$60,808	$81,022	$128,825	$242,340
Revenue Escalation						
Rate Revenue Increase	*0.0%*	*90.0%*	*25.0%*	*10.0%*	*5.0%*	*4.5%*
Revenues						
Rate Revenue	$341,273	$355,592	$693,762	$867,202	$953,922	$1,001,618
Additional Rate Revenue	0	320,032	173,440	86,720	47,696	45,073
Rate Timing Adjustment	0					
Other Revenue	103,502	52,302	52,302	52,302	52,302	52,302
Interest on Reserves	$395	$0	$152	$203	$322	$606
Total Revenues	*$445,170*	*$727,926*	*$919,656*	*$1,006,427*	*$1,054,242*	*$1,099,599*
Expenses						
Operating Expenses						
Operating Expenses	$622,381	$569,748	$575,389	$596,679	$618,809	$765,853
Repay Capacity Fund		3,820	3,820	3,820	3,820	3,820
Total Operating Expenses	$622,381	$573,568	$579,209	$600,499	$622,629	$769,673
Capital Expenses						
Existing Debt Service	$0	$0	$0	$0	$0	$0
New Debt Service	0	0	279,000	279,000	279,000	279,000
Rate Funded Capital	$0	$93,550	$41,233	$79,124	$39,099	$138,282
Total Capital Expenditures	$0	$93,550	$320,233	$358,124	$318,099	$417,282
Total Expenses	*$622,381*	*$667,118*	*$899,442*	*$958,624*	*$940,728*	*$1,186,956*
Net Revenues	**-$177,211**	**$60,808**	**$20,214**	**$47,803**	**$113,515**	**-$87,356**
Loan from Capacity Fund	*$19,101*	*$0*	*$0*	*$0*	*$0*	*$0*
Ending Unrestricted Balance	**$0**	**$60,808**	**$81,022**	**$128,825**	**$242,340**	**$154,983**
Debt Coverage Ratio (Target 1.25)			1.23	1.47	1.56	1.20

iii. Debt Repayments

As described in a previous section of this document, the SMCSD's wastewater enterprise fund currently does not have any outstanding debt. For the purposes of estimating debt payments that will be incurred by the SMCSD as a result of financing the proposed project, a loan interest rate of approximately 1.875% was utilized. It should be noted that the actual loan rate is booked when the loan is approved and may differ from the current loan rate. If the financing rate is fixed for 40 years, the annual repayment would be approximately $35,760/YR per $1MM financed, plus a required 10% loan reserve, for a total of $39,336/YR per $1MM financed. The repayment on a $7MM loan, for example, would be $275,352/YR. Any project related costs which exceed the SMCSD's borrowing capacity will need to be covered through grant funds. If grant funding cannot be secured, then the SMCSD anticipates that the scope of the project will have to be modified to bring the project costs in line with its ability to finance the project.

iv. Reserves

Debt Service Reserve: Based on recommendations from Bartle Wells Associates, the SMCSD should maintain, at minimum, a 1.25x debt coverage ratio. This will help the SMCSD maintain a strong financial position and be better positioned to obtain additional financing. It is understood that the USDA requires a 1.10x debt coverage for their loan programs, which means the SMCSD shall set aside and keep 10% of the loan payment, in a restricted account, until 1 full year is funded.

Short-Lived Asset Reserve: The following Table 6.9 lists the short-lived assets that are jointly owned by the SMCSD's Water and Wastewater funds.

Table 6.13. Short-Lived Asset Reserve

Infrastructure	Useful Life (years)	Replacement Cost	Annual Reserve
2002 John Deere Tractor	15	$35,000	$2,333
2017 Dodge Ram Utility Bed/Truck	15	$70,000	$4,666
2006 GMC Pickup with Utility Bed	10	$45,000	$4,500
2016 Kubota Mini Excavator	15	$40,000	$2,666
2016 Trailer-Mounted Air Compressor	15	$15,000	$1,000
		Total	$15,165

7 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the analysis summarized in the previous sections of this document, it is recommended that the San Miguel Community Services District proceed to the design phase of the WWTP Upgrade & Expansion Project to include the elements of the Membrane Bioreactor WWTP configuration. The selected WWTP configuration is detailed in Section 6 of this document.

Appendix A: Waste Discharge Requirements for San Miguel Sanitary District, San Luis Obispo County, Order No. 99-046

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

STAFF REPORT FOR REGULAR MEETING OF JULY 9, 1999

Last Revised on June 17, 1999

ITEM NUMBER: **16**

SUBJECT: **Revised Waste Discharge Requirements for San Miguel Sanitary District, San Luis Obispo County, Order No. 99-046.**

KEY INFORMATION

Location:	End of "N" Street in San Miguel
Discharge Type:	Domestic/Municipal Wastewater
Design Capacity:*	200,000 gallons per day
Current Capacity:	100,000 gallons per day
Treatment:	Screening, Aeration
Disposal:	Evaporation/Percolation Beds
Reclamation:	Percolation to Ground Water
Existing Order:	Order No. 87-96

*Constructed in two phases: completion of Phase One permits 150,000 gpd, completion of Phases One and Two permits 200,000 gpd of domestic/municipal wastewater.

SUMMARY

The proposed order is for renewal of Waste Discharge Requirements, Order No. 87-96, and covers expansion of the treatment facilities. The treatment plant expansion consists of adding two aerated lagoons that may be operated either in series or parallel mode. Addition of these lagoons would allow for treatment of an additional 100,000 gallons per day (gpd) for a maximum treatment and disposal capacity of 200,000 gpd. The expansion will enable the San Miguel Sanitary District to treat the community's current wastewater production (100,000 to 150,000 gpd) and estimated future wastewater production to the year 2020. The proposed requirements specified are designed to prevent discharges to surface waters, protect groundwaters, and prevent nuisance conditions caused by discharge.

DISCUSSION

Facility Description – San Miguel Sanitary District (Discharger) proposes construction of two 940,000-gallon aerated lagoons, located at the end of "N" Street in San Miguel. The site location map is presented in the proposed Order as Attachment "A." Addition of the two aerated lagoons would increase the Discharger's treatment/disposal capacity from the current 100,000 gpd to 200,000 gpd. The project will be developed in two phases. The proposed phases will each include the construction of one 940,000-gallon capacity aerated lagoon. (See detailed facility map "B").

The maximum amount of domestic wastewater that may be treated and disposed of by the Discharger is limited by the capacities of the completed phases. Prior to increasing flow limitations for completion of each phase, documentation must be submitted to the Regional Board confirming construction is complete and was in accordance with the design specifications included in the Discharger's Report of Waste Discharge Treatment Process – Wastewater treatment includes grinder pumps followed by biological stabilization of organic material in aerated

lagoons. Final disposal of treated wastewater is to percolation beds (percolation and evaporation). Staff has reviewed soil boring and percolation data of the proposed location of the additional aerated lagoons, and has determined that the proposed designs meet standard requirements.

Discharge Specifications – Specifications were developed from the Discharger's stated performance capabilities contained in the Report of Waste Discharge. The proposed Order contains discharge specifications limiting flow by the number of project phases completed:

Phase(s) Completed	Maximum Discharge Permitted (gpd)
1	150,000
1,2	200,000

As indicated above, after phase one is completed, the maximum daily flow of wastewater permitted at the facility would be 150,000 gpd. After completion of phase two, a total of 200,000 gpd would be permitted. The Order specifies a pH range of not less than 6.5 or greater than 8.4 for the wastewater. Surface drainage shall be excluded from aerated lagoons and percolation beds. Freeboard shall exceed two feet in aerated lagoons and percolation beds.

Prohibitions – Final discharge to areas other than the percolation beds shown in Attachment "B" is prohibited. Seepage of wastes to the Salinas River, adjacent drainageways, or adjacent properties is prohibited. Bypass of the treatment facility and discharge of untreated or partially treated wastes directly to the percolation beds is prohibited.

Sources of Requirements – Requirements specified in the proposed Order are based on staff's professional judgement and the following documents: California Code of Regulations Title 22, Water Quality Control Plan Central Coast Basin (Basin Plan), and Standard Provisions and Reporting Requirements. Throughout the proposed Order and Monitoring and Reporting Program, footnotes are included to indicate the source of specified requirements. Requirements not referenced are based on professional judgement.

Compliance Status – Review of Discharger's self-monitoring reports indicates this facility has been out of compliance with the previous Order (Order No. 87-96), due to flow exceedence. The proposed capacity increase will bring the Discharger into compliance with flow limitations. New effluent limitations have been determined from trends in 1991-1995 sampling data. The limitation for salts are more stringent than those in the previous Order, but review of past sampling data indicates compliance with the new limitations is achievable.

Monitoring Program – Monitoring and Reporting Program 99-046 (MRP) is a part of the proposed Order. The MRP requires routine water supply, effluent, and ground water monitoring to ensure protection of ground water quality.

The monitoring program includes quarterly sampling of the discharge to the percolation beds for effluent flow, pH, total dissolved solids (TDS), sodium, chloride, nitrate (as N), and sulfate. Annually, in April, a general mineral analysis is also required. All wastewater discharged at this site is required to be metered, and the quantity of discharge shall be included in the Discharger's quarterly reports.

The Discharger's water supply shall be sampled for TDS, sodium, chloride, nitrate (as N), and sulfate on a quarterly basis. A general mineral analysis shall be conducted on an annual basis.

The Discharger installed three wells attempting to develop adequate ground water monitoring in late 1998 (see Attachment "B"). One well (W-2) was abandoned due to the influence by past sludge management activities. Additional data collection and evaluation are needed to resolve ground water monitoring. The proposed monitoring program addresses ground water monitoring needs. The northern adjacent landowner apparently will not allow a monitoring well to be installed on his property. Ground water impacts are minimized by stringent effluent limitations. The effluent limitations specified in the proposed Order are more stringent than specified in the previous Order, but are achievable as long as the Discharger maintains an aggressive salt management program. A provision has been included in the proposed Order,

which requires a salt management program and annual summary of its effectiveness. Monitoring for TDS, sodium, and chloride has been increased in both the water supply and effluent programs. Ground water specification C.4. has been added requiring ground water monitoring evaluation by June 1, 2000.

The Discharger is required to conduct aerated lagoon monitoring, measuring dissolved oxygen and minimum freeboard on a monthly basis. An annual solids inventory in the aerated lagoon is required in April.

Reporting Schedule – Monitoring reports are required quarterly, by the 20th of the first month of the next quarter, and shall contain all data collected or calculated over the previous three months. Each quarter, using data from the current quarter and the previous five quarters, the average concentration of each constituent analyzed shall be calculated and included in the quarterly report. Quarterly reports must contain a narrative summary of any exceptions pursuant to Disposal Area Monitoring.

Hydro-Geologic Characteristics – Regionally, the facility is located in the San Miguel Sub-Area, which lies within the Paso Robles Ground Water Basin of the Central Coast Hydrologic ground water basin as identified in the Basin Plan. The Paso Robles hydrologic area, which is one of nine that make up the Salinas hydrologic unit, is north of the city of Paso Robles.

The median ground water objectives for the San Miguel Sub-Area, as specified in the Basin Plan, are reported as follows:

San Miguel Sub-Area
Groundwater Objectives

Analyte	Average	Units
Total Dissolved Solids	750	mg/l
Chloride	100	mg/l
Sulfate	175	mg/l
Sodium	105	mg/l
Nitrate	4.5	mg/l

Ground water in the vicinity generally flows in a northeasterly direction. Depth to ground water is greater than 20 feet below all proposed aeration lagoons on the project site. Soil is characterized as alluvial loamy sands, and site topography is fairly level.

Physical Characteristics – The facility is located at the north end of "N" Street. The facility is in Section 16, T25S, R12E, MD B&M, San Miguel Quadrangle, as shown on Attachments "A" and "B" of Order No. 99-046.

Surface Water Locations – The Salinas River runs parallel and adjacent to the facility. All existing and proposed facilities are outside the 100-year flood plain of the Salinas River, so flooding should not cause adverse environmental impact downstream of the facility.

Surface Water Beneficial Uses – Beneficial uses of the Salinas River include:

a. municipal supply
b. agricultural supply
c. industrial process supply
d. ground water recharge
e. water contact recreation
f. non-contact water recreation
g. wildlife habitat
h. cold fresh water habitat
i. warm fresh water habitat
j. migration of aquatic organisms
k. spawning, reproduction, and/or early development habitat
l. rare, threatened, or endangered species habitat
m. commercial and sport fishing

Beneficial uses of the nearby Salinas River are protected by the prohibition of discharge to any areas other than the percolation beds.

Potential Problems, Odors, Overflows – A potential for odor generation exists because of the nature of wastewater treatment/disposal operations. However, the use of aeration lagoons to treat domestic/municipal wastewater greatly reduces the potential for objectionable odors. Monitoring the lagoons for dissolved oxygen will alert the operators of a need for additional aeration.

ENVIRONMENTAL SUMMARY

San Miguel Sanitary District completed a Negative Declaration for "Wastewater Treatment Plant Expansion from 0.1 mgd to 0.2 mgd" on June 14, 1994.

Mitigation measures to prevent nuisance and assure protection of beneficial uses of surface and groundwaters will be implemented through this Order.

COMMENTS

San Miguel Sanitary District

Discharger voiced its concurrence with the proposed Order.

San Luis Obispo County – No Comment

Department of Fish & Game – No Comment

Monterey County Water Resources Agency - No Comment

Ron Whitson - No Comment

ATTACHMENTS

Proposed Waste Discharge Requirements Order No. 99-046 and Monitoring and Reporting Program No. 99-046.

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION
81 Higuera Street, Suite 200
San Luis Obispo, California 93401-5427

WASTE DISCHARGE REQUIREMENTS ORDER NO. 99-046

Waste Discharger Identification No. 3 400109001
Second Draft June 17, 1999
Proposed for Consideration at July 9, 1999 Meeting

For

SAN MIGUEL SANITARY DISTRICT
San Luis Obispo County

The California Regional Water Quality Control Board, Central Coast Region, (hereafter Board), finds:

1. The San Miguel Sanitary District filed a Report of Waste Discharge on February 4, 1999, in accordance with Section 13260 of the California Water Code. The report was filed for authorization to expand the average daily flow capacity of the existing facility. The information supports a request for continued discharge.

2. The San Miguel Sanitary District (hereafter Discharger) operates a domestic wastewater treatment and disposal facility located at the north end of "N" Street in San Miguel. The facility is in Section 16, T25S, R12E, MD B&M, San Miguel Quadrangle, as shown on Attachments "A" and "B" of this Order.

3. The existing facility was designed to treat a maximum of 100,000 gallons per day (gpd) of domestic/municipal wastewater. The current treatment facility consists of grinder pumps followed by aerated lagoons. Final disposal of treated wastewater is discharge to percolation beds (evaporation and percolation).

4. In March of 1993, a design report evaluated the existing facility and future expansion requirements. It was determined that the average flow currently varies from 100,000 gpd, to 150,000 gpd. Since this exceeds the estimated treatment capacity of the current system, expansion of the facility is necessary.

5. Facility expansions will be constructed in two phases. Phase One expansion involves the construction of one additional aerated lagoon with a capacity of 940,000 gallons. This lagoon would increase the wastewater treatment facility capacity from 100,000 to 150,000 gpd. Phase Two expansion involves the construction of a second 940,000-gallon aerated lagoon, increasing the wastewater treatment facility capacity from 150,000 gpd to 200,000 gpd. The existing percolation/evaporation beds are adequately sized to handle 200,000 gpd. John L. Wallace and Associates (the Discharger's consultant) predict the Phase Two expansion will enable the Discharger to treat the community's estimated future wastewater production to the year 2020.

6. The sites of the Phase One and Phase Two expansions are on level topography, consisting of alluvial loamy sands. Depth to ground water near the two proposed lagoons is greater than twenty feet. Ground water flows in a north/northeasterly direction.

7. The Salinas River is located adjacent to the eastern side of the existing disposal areas and flows in a northerly direction. Existing and proposed facilities are outside the 100-year flood plain of the Salinas River.

8. The discharge from this facility had previously been regulated by Waste Discharge Requirements

Order No. 87-96, adopted by the Regional Board on June 12, 1987.

9. The Water Quality Control Plan, Central Coast Basin (Basin Plan) was adopted by the Regional Board on November 19, 1989 and approved by the State Water Resources Control Board (State Board) on August 16, 1990. The Regional Board approved amendments to the Basin Plan on February 11, 1994 and September 8, 1994. The Basin Plan incorporates statewide plans and policies by reference and contains a strategy for protecting beneficial uses of State Waters.

10. The ground water objectives specified in the Basin Plan for the vicinity of the discharge are as follows:

Ground Water Objectives

Constituent	Conc.	Units
Total Dissolved Solids	750	mg/l
Chloride	100	mg/l
Sulfate	175	mg/l
Sodium	105	mg/l
Nitrate (as N)	4.5	mg/l

11. Present and anticipated beneficial uses of ground water in the vicinity of the discharge include:

    a. Municipal and Domestic water supply
    b. Agricultural water supply
    c. Industrial water supply

12. Analyses reveal the water supply quality to be:

Water Supply

Constituent	Conc.	Units
Total Dissolved Solids	719	mg/l
Chloride	101	mg/l
Sulfate	130	mg/l
Sodium	87	mg/l
Nitrate (as N)	5	mg/l

13. Present and anticipated beneficial uses of the Salinas River that could be affected by discharge include:

    a. municipal supply
    b. agricultural supply
    c. industrial process supply
    d. ground water recharge
    e. water contact recreation
    f. non-contact water recreation
    g. wildlife habitat
    h. cold fresh water habitat
    i. warm fresh water habitat
    j. migration of aquatic organisms
    k. spawning, reproduction, and/or early development habitat
    l. rare, threatened, or endangered species habitat
    m. commercial and sport fishing

14. Discharge of Waste is a privilege, not a right, and authorization to discharge is conditional upon the discharge complying with provisions of Division 7 of the California Water Code and any more stringent effluent limitations necessary to implement water quality control plans, to protect beneficial uses, and to prevent nuisance. Compliance with this Order should mitigate any potential adverse changes in water quality due to discharge.

15. On April 15, 1999, the Regional Board notified the Discharger and interested parties of its intent to issue waste discharge requirements for the discharge and has provided them with a copy of the proposed Order and an opportunity to submit written views and comments.

16. After considering all comments pertaining to this discharge during a public hearing on July 9, 1999, this Order was found consistent with the above findings.

IT IS HEREBY ORDERED, pursuant to authority in Section 13263 of the California Water Code, that San Miguel Sanitary District, its agents, successors, and assigns, may discharge waste at its wastewater treatment facility providing compliance is maintained with the following:

(Note: Other prohibitions and conditions, definitions, and the method of determining compliance are contained in the attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements" dated January 1984.)

downgradient of the disposal areas to exceed 5 mg/l (as N).

more stringent than others such as mass limits

2. The discharge shall not cause a significant increase of mineral constituent concentrations in underlying ground water.

By **June 1, 2000**, the Discharger shall evaluate all pertinent information and submit a ground water monitoring proposal to the Executive Officer for review and approval (see the Ground Water Monitoring Section of Monitoring and

2.

	Avg. of the last 6 samples		

4.

Executive Officer not later than **July 9, 2006**, addressing:

a. Whether there will be changes in the continuity, character, location, or volume of the discharge; and ,

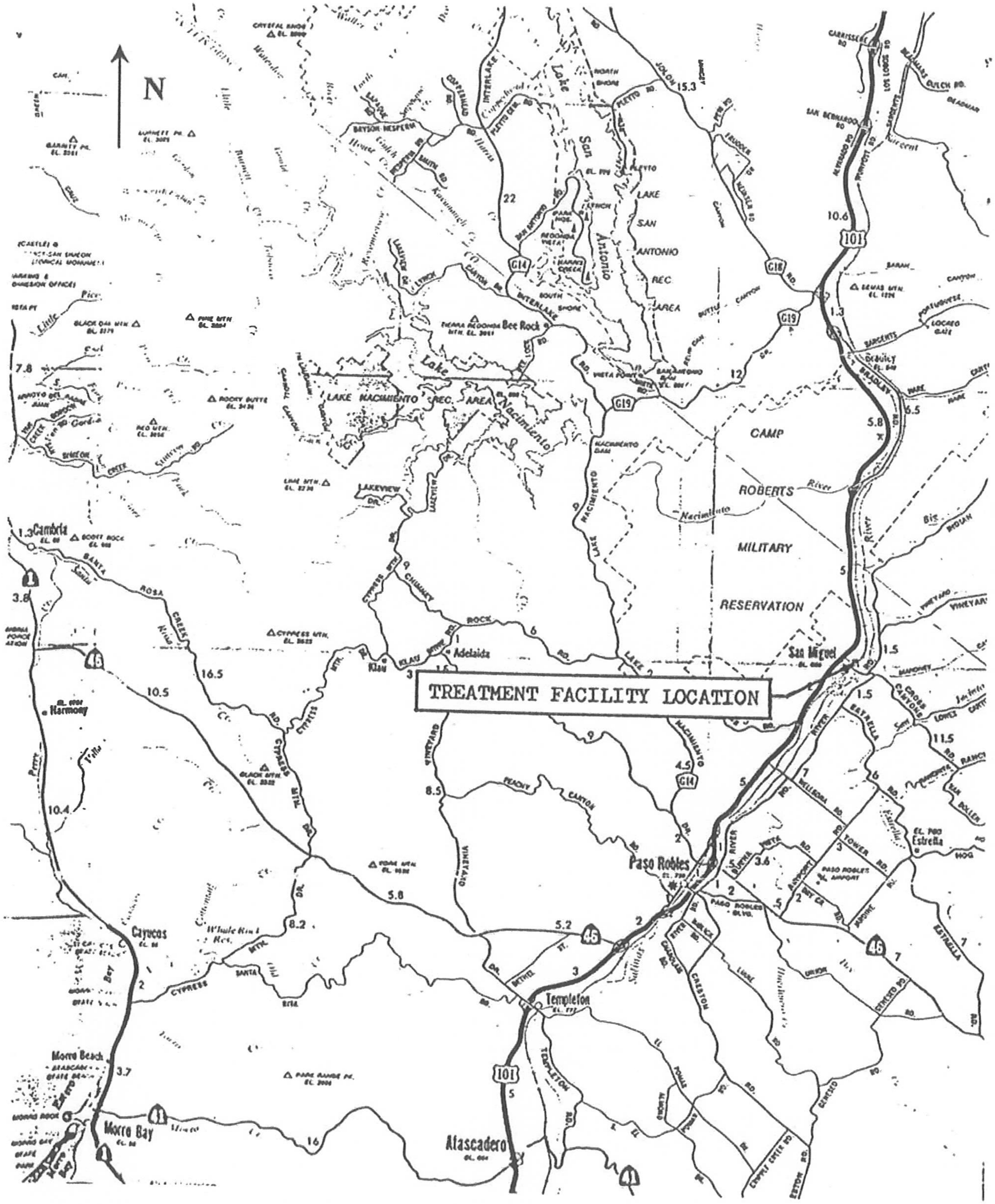
b. Whether, in their opinion, there is any portion of the Order that is incorrect, obsolete, or otherwise in need of revision.

I, ROGER W. BRIGGS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Coast Region, on July 9, 1999.

_____

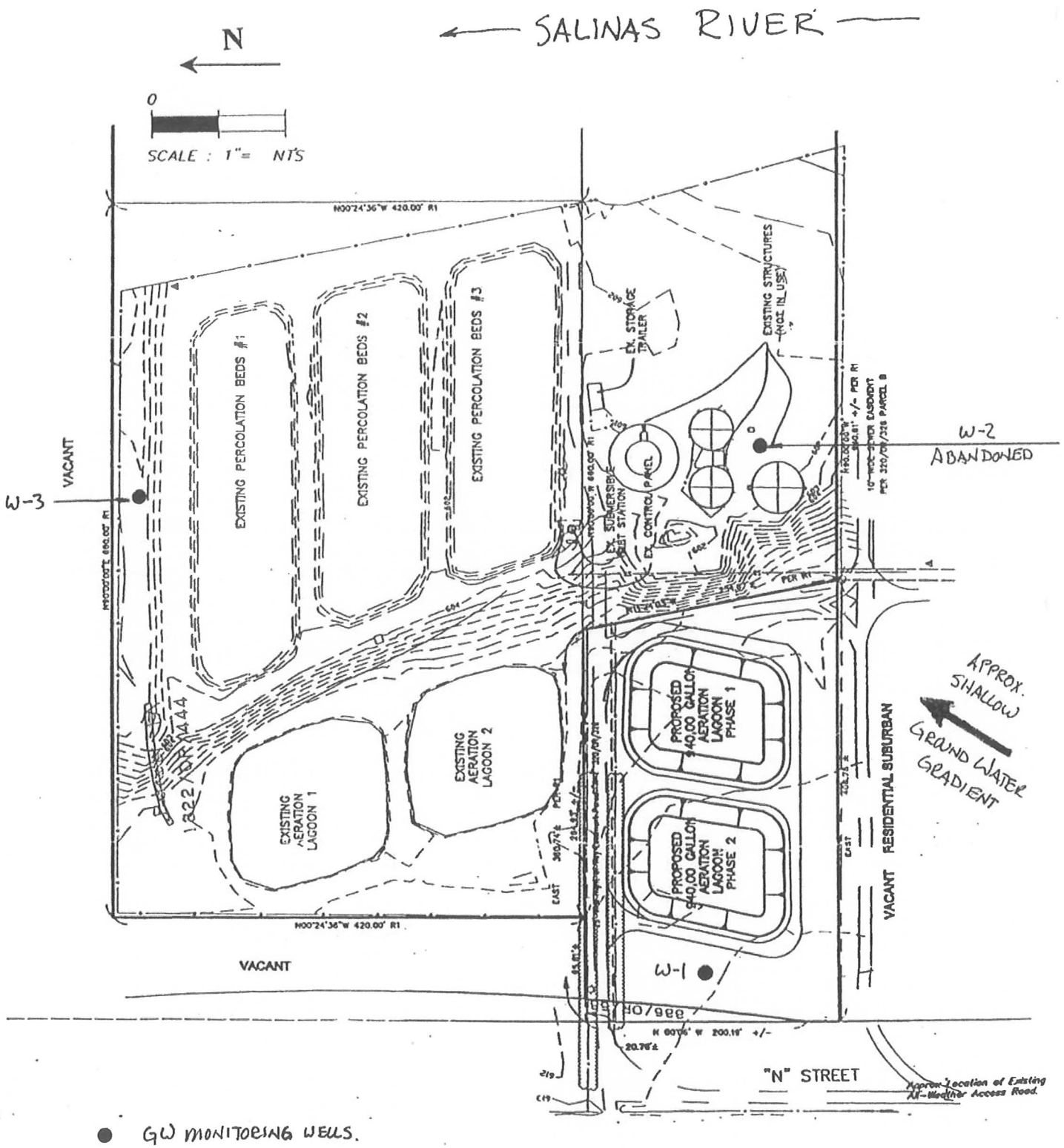
Executive Officer

San Miguel Sanitary District



Attachment A

San Miguel Sanitary District



Attachment B

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION
81 Higuera Street, Suite 200
San Luis Obispo, California 93401-5427

MONITORING AND REPORTING PROGRAM NO. 99-046

Waste Discharger Identification No. 3 400109001
Second Draft June 17, 1999
Proposed for Consideration at July 9, 1999 Meeting

For

SAN MIGUEL SANITARY DISTRICT
San Luis Obispo County

WATER SUPPLY MONITORING

Representative samples of the water supply shall be collected and analyzed as follows:

Constituent	Units	Sample Type	Minimum Sampling and Analyzing Frequency
Total Dissolved Solids*	mg/l	Grab	Quarterly (Jan., Apr., July, Oct.)
Chloride*	mg/l	Grab	Quarterly (Jan., Apr., July, Oct.)
Sulfate*	mg/l	Grab	Quarterly (Jan., Apr., July, Oct.)
Sodium*	mg/l	Grab	Quarterly (Jan., Apr., July, Oct.)
Nitrate (as N)*	mg/l	Grab	Quarterly (Jan., Apr., July, Oct.)
General Mineral	mg/l	Grab	Annually (April)

*Analysis of these constituents is not required in the month of April if they are included in the general mineral analysis.

EFFLUENT MONITORING

Representative samples of the discharge to evaporation/percolation ponds shall be collected and analyzed as follows:

Constituent	Units	Sample Type	Minimum Sampling and Analyzing Frequency
Effluent Flow	gpd	metered	Daily
pH*	pH units	Grab	Quarterly (Jan., Apr., July, Oct.)
Total Dissolved Solids*	mg/l	Grab	Quarterly (Jan., Apr., July, Oct.)
Chloride*	mg/l	Grab	Quarterly (Jan., Apr., July, Oct.)
Sulfate*	mg/l	Grab	Quarterly (Jan., Apr., July, Oct.)
Sodium*	mg/l	Grab	Quarterly (Jan., Apr., July, Oct.)
Boron*	mg/l	Grab	Quarterly (Jan., Apr., July, Oct.)
Total Nitrogen (as N)	mg/l	Grab	Quarterly (Jan., Apr., July, Oct.)
Nitrate (as N)*	mg/l	Grab	Quarterly (Jan., Apr., July, Oct.)
General Mineral	mg/l	Grab	Annually (April)

*Analysis of these constituents is not required in the month of April if they are included in the general mineral analysis.

AERATED LAGOON MONITORING

Constituent	Units	Sample Type	Minimum Sampling and Analyzing Frequency
Dissolved Oxygen	mg/l	Grab (at 1 ft. depth)	Monthly
Minimum Freeboard	feet	Measured	Monthly
Sludge Depth	feet	Measured	Annually (April)

GROUND WATER MONITORING

Representative samples from W-1 and W-3 shall be collected and analyzed as follows:

Constituent	Units	Sample Type	Minimum Sampling and Analyzing Frequency
Total Dissolved Solids*	mg/l	Grab	Quarterly (Jan., Apr., July, Oct.)
Chloride*	mg/l	Grab	Quarterly (Jan., Apr., July, Oct.)
Sulfate*	mg/l	Grab	Quarterly (Jan., Apr., July, Oct.)
Sodium*	mg/l	Grab	Quarterly (Jan., Apr., July, Oct.)
Nitrate (as N)*	mg/l	Grab	Quarterly (Jan., Apr., July, Oct.)
General Mineral	mg/l	Grab	Annually (April)

*Analysis of these constituents is not required in the month of April if they are included in the general mineral analysis.
**Samples shall be collected after proper well purging.

After four quarters of data collection, the Discharger shall evaluate all data collected and submit a ground water monitoring proposal to the Executive Officer for review and approval. The proposal shall be submitted by **June 1, 2000.**

DISPOSAL AREA MONITORING

The disposal area shall be inspected weekly for overflow, seepage, vectors, excessive weed growth, and odors. Evidence of any condition of this nature shall be promptly investigated and remedied; and shall be reported to the Regional Board within 24 hours. A record shall be kept of dates and nature of observations and remedies.

REPORTING

Monitoring reports shall be submitted quarterly, by the 20th of the first month of the next quarter, and shall contain all data collected or calculated over the previous three months. Each quarter, using data from the current quarter and the previous five samples, the average concentration of each constituent analyzed shall be calculated and included in the quarterly report. Quarterly reports shall also contain a narrative summary of any exceptions pursuant to Disposal Area Monitoring. The April quarterly report must include a summary of the Discharger's salt management program and its effectiveness for the previous year.

IMPLEMENTATION

This monitoring and reporting program shall be implemented immediately.

ORDERED BY _____
Executive Officer

_____
Date

Appendix B: Central Coast Regional Water Quality Control Board Letter of June 18, 2018

June 18, 2018

John Green, President
San Miguel Community Services District
1150 Mission St.
San Miguel CA 93451
Email: john.green@sanmiguelcsd.org

Sent via Electronic and Registered Mail No. 7016 1370 0001 7682 6261

Dear Mr. Green:

SAN MIGUEL WASTEWATER TREATMENT PLANT, SAN MIGUEL, SAN LUIS OBISPO COUNTY – TREATMENT PLANT NEARING CAPACITY

It has come to Central Coast Regional Water Quality Control Board (Central Coast Water Board) staff's attention that the San Miguel Community Services District's wastewater treatment plant is nearing capacity, and that plans for expansion are currently being formulated.

Our analysis of recent flow volumes shows that the current wastewater treatment plant will reach capacity (200,000 gallons per day) in less than 3 years, and we therefore urge you to proceed with expansion planning and construction with all due haste.

Your discharge permit for the wastewater treatment plant is Waste Discharge Requirements Order No. 99-046. Order No. 99-046 requires you to submit a report to the Central Coast Water Board when your flow may reach design capacity within four years. Standard Provisions and Reporting Requirements for Waste Discharge Requirements (updated December 5, 2013), is include by reference in Order No. 99-046. Standard Provisions section C(9) addresses facilities that are nearing their design capacity, and states:

> "Within 120 days after the discharger discovers, or is notified by the Central Coast Water Board, that monthly average daily flow will or may reach design capacity of waste treatment and/or disposal facilities within four years, the discharger shall file a written report with the Central Coast Water Board. The report shall include:
>
> a. The best estimate of when the monthly average daily dry weather a flow rate will equal or exceed design capacity.
> b. A schedule for studies, design, and other steps needed to provide additional capacity for waste treatment and/or disposal facilities before the waste flow rate equals the capacity of present units."

Additionally, we strongly urge San Miguel Community Services District to include salt and nitrogen removal capability in the expansion plans, as your facility is chronically out of compliance with permit limits for total dissolved solids, chloride, and sodium. Groundwater monitoring results reveal that areal both upgradient and downgradient groundwaters exceed the maximum contaminant limit for nitrate nitrogen of 10 mg/L. The necessary facility expansion

affords an opportunity to include both salt and nitrogen removal technologies in the design, which in turn will facilitate opportunities for water recycling.

While we realize San Miguel is a small disadvantage community, and funding projects like the wastewater treatment plant expansion can be challenging, we urge you to proceed with the sense of urgency that the current situation requires.

Please contact Jon Rokke at (805) 549-3892 or jon.rokke@waterboards.ca.gov or Jennifer Epp at jennifer.epp@waterboards.ca.gov with any questions you may have concerning this matter.

Sincerely,

for John M. Robertson
Executive Officer

Enclosure: WDR Standard Provisions 2013

Cc via electronic copy only:

Kelly Dodds – San Miguel CSD
Director of Utilities
Kelly.dodds@sanmiguelcsd.org

Blaine Reely – District Engineer
Monsoon Consultants
Breely@monsoonconsultants.com

Katie McNeill – Central Coast Water Board
Grants Coordinator/Manager
Katie.mcneill@waterboards.ca.gov

Jon Rokke – Central Coast Water Board
Waste Discharge Requirements Unit
Jon.rokke@waterboards.ca.gov

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION
895 Aerovista Place, Suite 101
San Luis Obispo, CA 93401

RESOLUTION NO. R3-2013-0052

UPDATING STANDARD PROVISIONS AND REPORTING REQUIREMENTS FOR WASTE DISCHARGE REQUIREMENTS

WHEREAS, the California Regional Water Quality Control Board, Central Coast Region (hereafter Central Coast Water Board) finds:

1. The Central Coast Water Board adopted *Standard Provisions and Reporting Requirements for Waste Discharge Requirements* (Standard Provisions) in January 1984. The Standard Provisions incorporate *Water Quality Control Plan for the Central Coastal Basin* (Basin Plan) requirements, State Water Resources Control Board policies, and California Water Code provisions into waste discharge requirements, augmenting discharge-specific conditions and monitoring programs.

2. The Central Coast Water Board may issue and revise requirements for proposed and existing discharges to implement relevant Basin Plan requirements, in accordance with California Water Code §13263 (a) and (e).

3. The Central Coast Water Board can amend the waste discharge requirements of a group of similarly situated dischargers through a single board action in cases where the amended requirements properly apply to each of the dischargers whose waste discharge requirements are so amended.

4. Area of Applicability - The effect of this amendment will be throughout the Central Coast Region and applicable to discharges of waste and wastewater regulated by waste discharge requirements adopted by the Central Coast Water Board. Existing waste discharge requirements orders modified by this action are identified on Attachment B of this Resolution.

5. CEQA - The Central Coast Water Board's action in adopting Resolution No. R3-2013-0052, updating the Standard Provisions, and modifying the waste discharge requirements orders identified in Attachment B is categorically exempt from the provisions of CEQA, because this action by a regulatory agency consists of permitting of existing facilities, within the meaning of §15301 of the *Guidelines for Implementation of the California Environmental Quality Act* in Title 14 of the California Administrative Code (CEQA Guidelines).

6. Public Notice - Interested persons and the public have been informed of the Central Coast Water Board's intent to revise the Standard Provisions and provided opportunity to submit comments and recommendations. Notice of public hearing was given by posting on the Water Board website, by mailing a copy of the notice to all persons requesting such notice and applicable government agencies, and by notifying the dischargers identified in Attachment B that may be affected by this action. The Central Coast Water Board has

provided responses to timely written comments received from interested persons.

7. On December 5, 2013, the Central Coast Water Board held a public hearing and considered all the evidence and comments concerning this matter. Notice of this hearing was given to all interested persons in accordance with CCR, Title 14, §15072.

THEREFORE BE IT RESOLVED THAT:

1. Pursuant to California Water Code §13263, the Central Coast Water Board, after considering the record, including oral testimony at the hearing, hereby adopts the revised Standard Provisions and Reporting Requirements for Waste Discharge Requirements as set forth in Attachment A to this Resolution.

2. Pursuant to authority in California Water Code §13263, this Resolution amends the waste discharge requirements of each of the dischargers identified in Attachment B of this Resolution. The dischargers listed in Attachment B of this Resolution, their agents, successors and assigns, shall comply with the terms of this Resolution and the Standard Provisions and Reporting Requirements adopted herein in addition to provisions of existing waste discharge requirement orders, provided that provisions of this Resolution supersede any conflicting provisions in the existing waste discharge requirements.

I, Kenneth A. Harris Jr., Executive Officer of the California Regional Water Quality Control Board, Central Coast Region, do hereby certify that the foregoing is a full, true, and correct copy of a resolution adopted by the California Regional Water Quality Control Board, Central Coast Region on December 5, 2013.

_____
Executive Officer

Attachments: A. Revised Standard Provisions and Reporting Requirements
B. Existing WDR Orders modified by this Resolution

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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION
STANDARD PROVISIONS AND REPORTING REQUIREMENTS
for
WASTE DISCHARGE REQUIREMENTS
December 5, 2013

A. General Permit Conditions

Prohibitions

1. Introduction of "incompatible wastes" to the treatment system is prohibited.

2. Discharge of any radiological, chemical, or biological warfare agent or radioactive waste is prohibited.

3. Discharge of "toxic wastes" is prohibited.

4. Introduction of pollutants into the collection, treatment, or disposal system by an "indirect discharger" that inhibit or disrupt the treatment process, system operation, or the eventual use or disposal of sludge or cause or "significantly contribute" to a violation of any requirement of this order is prohibited.

5. Introduction of "pollutant-free" wastewater to the collection, treatment, and disposal system in amounts that threaten compliance with this order is prohibited.

Provisions

6. Production and use of reclaimed water shall conform with reclamation criteria established in Title 22, Chapter 3, of the California Code of Regulations. For uses of reclaimed water not addressed in Title 22 and not in the main body of this order, use is subject to review and dependent upon approval of the Executive Officer before use may begin (For uses addressed in Title 22, see C.8.)

7. Collection, treatment, or discharge of waste shall not create nuisance or pollution, as defined by Section 13050 of the California Water Code.

8. As necessary to ensure safe and reliable collection, treatment, and disposal of waste and consistent compliance with this order, the discharger shall adopt and enforce a local pretreatment program. (See C.16.h.)

9. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the wastewater treatment and disposal areas.

10. The discharger shall prevent formation of habitat for carriers of pathogenic microorganisms in any part of the treatment and disposal system.

11. Petroleum products, grease, or scum shall not be visible on disposal ponds.

12. The discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the discharger to achieve compliance with the conditions of this order. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staff and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. Proper operation and maintenance shall be described in an Operation and Maintenance Manual.

13. Electrical and mechanical equipment shall be maintained in accordance with appropriate practices and standards, such as NFPA 70B, Recommended Practice for Electrical Equipment Maintenance; NFPA 70E, Standard for Electrical Safety in the Workplace; ANSI/NETA MTS Standard for Maintenance: Testing Specifications for Electrical Power Equipment and Systems, or procedures established by insurance companies or other industry resources.

14. If the discharger's facilities are equipped with SCADA or other systems that implement wireless, remote operation, the discharger shall implement appropriate safeguards against unauthorized access to the wireless systems. Standards such as NIST SP 800-53, Recommended Security Controls for Federal Information Systems, can provide guidance.

15. Transport and treatment facilities and permanent disposal ponds shall be adequately protected against overflow, flooding, or washout as the result of a 100-year frequency flood or 100-year, 24-hour storm.

16. All disposal areas shall be on land owned or leased and controlled by the discharger.

17. Operation of collection, treatment, and disposal systems shall be in a manner that precludes public contact with wastewater.

18. Collected screenings, sludges, and other solids removed from liquid wastes shall be disposed of in a manner consistent with Part 503 in Title 40 of the Code of Federal Regulations or Section 20005 et seq. of Title 27 of the California Code of Regulations and as approved by the Executive Officer.

19. Wastewater treatment plants shall be supervised and operated by persons possessing certificates of appropriate grade pursuant to the California Water Code and Title 23 of the California Code of Regulations.

20. The discharger shall allow Central Coast Water Board and staff, or an authorized representative (including an authorized contractor acting as a representative of the Board), upon presentation of credentials and other documents as may be required by law, to:

a. Enter upon premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this order.

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this order.

c. Inspect at reasonable times any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this order.

d. Photograph, sample, or monitor for the purpose of showing compliance with this order any substances or parameters at any location.

21. After notice and opportunity for a hearing, this order may be terminated or modified for cause, including, but not limited to:

a. Violation of any term or condition contained in this order.

b. Obtaining this order by misrepresentation, or by failure to disclose fully all relevant facts.

c. A change in any condition or endangerment to human health or environment that requires a temporary or permanent reduction or elimination of the authorized discharge.

d. A material change in character, location, or volume of the discharge.

22. The order does not authorize commission of any act causing injury to the property of another, does not convey any property rights of any sort, does not remove liability under federal, state, or local laws, and does not guarantee a capacity right.

23. The discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this order that has a reasonable likelihood of adversely affecting human health or the environment.

24. The discharger shall take all reasonable steps to minimize or correct adverse impacts on the environment resulting from noncompliance with this order.

25. Provisions of this order are severable. If any provision of the order is found invalid, the remainder of the order shall not be affected.

26. The discharger shall furnish, within a reasonable time, any information the Central Coast Water Board may request to determine compliance with this order or to determine whether cause exists for modifying or terminating this order. The discharger shall also furnish to the Board upon request copies of records required to be kept by this order.

27. Safeguards shall be provided to ensure maximal compliance with all terms and conditions of this order. Safeguards shall include preventative and contingency plans and may also include alternative power sources, stand-by generators, retention capacity, operating procedures, or other precautions. Preventative and contingency plans for controlling and minimizing the effect of accidental discharges shall:

    a. Identify possible situations that could cause "upset," “overflow," “bypass," or other noncompliance. (Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks, or pipes should be considered.)

    b. Evaluate the effectiveness of present facilities and procedures and describe procedures and steps to minimize or correct any adverse environmental impact resulting from noncompliance with the order.

28. Physical facilities shall be designed and constructed according to accepted engineering practice and shall be capable of full compliance with this order when properly operated and maintained. Proper operation and maintenance shall be described in an Operation and Maintenance Manual.

29. Facilities shall be accessible during the wet weather season.

30. Should additional data become available through monitoring or investigation that indicates compliance with this order is not adequately protecting groundwater, the Central Coast Water Board may review and revise this order as appropriate.

B. General Monitoring Requirements

1. Monitoring location, minimum sampling frequency, and sampling method for each parameter shall comply with the Monitoring and Reporting Program of this order. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, entitled "Guidelines Establishing Test Procedures for Analysis of Pollutants," unless other test procedures have been specified in this order.

2. If results of monitoring a pollutant appear to violate effluent limitations based on a weekly, monthly, 30-day, or six-month period, but compliance or non-compliance cannot be validated because sampling is too infrequent, the frequency of sampling must be increased to validate the test within the next monitoring period. The increased frequency must be maintained until the Executive Officer agrees the original monitoring frequency may be resumed.

   For example, if suspended solids are monitored weekly and results exceed the weekly average numerical limit in the order, monitoring of suspended solids must be increased to at least four samples every week until compliance is restored.

3. Water quality analyses performed in order to monitor compliance with this order shall be by a laboratory certified by the State Department of Public Health for the constituent(s) being analyzed.

4. Samples and measurements taken for the purpose of compliance monitoring shall be representative of the monitored activity. Samples shall be taken during periods of peak loading conditions. Influent samples shall be samples collected from the combined flows of all incoming wastes, excluding recycled wastes. Effluent samples shall be samples collected downstream of the last treatment unit and at a location and time representative of the peak pollutant load in the discharge.

5. If any parameter is monitored at locations specified in the order more frequently than required and is analyzed using approved test procedures, the results shall be included in calculations and reports.

6. All monitoring instruments and devices used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy.

7. The discharger shall retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings for continuous monitoring instrumentation, copies of all monitoring reports required by this order, and records of all data used to complete the application for this order for a period of at least three years from the date of the sample, measurement, report, or application. This period may be extended by request of the Board at any time. Records of monitoring information include the date, exact place, and time of sampling or measurements; the individual who performed the sampling or measurements; the date analysis was performed; the laboratory and individual who performed the analysis; the analytical techniques or methods used; and results.

C. General Reporting Requirements

1. Monitoring results shall be reported at intervals and in a manner specified in the Monitoring and Reporting Program of this order.

2. Monitoring reports shall be submitted by the last day of the month following the monitoring period (unless an alternative time is specified in the order) and shall summarize results of all monitoring performed during that period. The Central Coast Water Board may require the discharger to electronically submit Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) (http://www.waterboards.ca.gov/ciwqs/index.html). Otherwise, the discharger shall electronically submit self-monitoring reports accompanied by the Monitoring Report Transmittal Sheet to centralcoast@waterboards.ca.gov.

3. The discharger must report any noncompliance that may endanger health or the environment to the Central Coast Water Board orally within 24 hours from the time the discharger becomes aware of the circumstances (telephone: 805-549-3147). Unless waived by the Executive Officer of the Central Coast Water Board, a written

report shall he submitted within five days of awareness and shall contain a description of the noncompliance and its cause; the period of noncompliance (including exact dates and times) or anticipated duration; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. This provision includes, but is not limited to:

a. Violation of a discharge prohibition.

b. Any "upset," "overflow," or 'bypass."

c. Violation of a discharge limitation for any "hazardous substance."

4. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule shall be submitted within 14 days following each scheduled date unless otherwise specified within the order. If reporting noncompliance, the report shall include a description of the reason, a description and schedule of tasks necessary to achieve compliance, and an estimated date for achieving full compliance. A second report shall be submitted within 14 days of full compliance.

5. All instances of noncompliance not reported under paragraph numbers C.3. and C.4., above, shall be submitted along with monitoring reports. The report shall contain the information listed in paragraph C.3.

6. Reports shall be submitted in advance of any planned changes in the permitted facility or activity that may result in noncompliance.

7. The discharger shall file a report of waste discharge or secure a waiver from the Executive Officer at least 120 days before making any material change or proposed change in the character, location, or volume of the discharge.

8. An engineering report as specified by Section 60323, Chapter 3, Title 22, of the California Code of Regulations is required, and written approval of the Executive Officer must be received by the discharger and user, before reclaimed water is supplied for any uses and to any users other than those enumerated in this order.

9. Within 120 days after the discharger discovers, or is notified by the Central Coast Water Board, that monthly average daily flow will or may reach design capacity of waste treatment and/or disposal facilities within four years, the discharger shall file a written report with the Central Coast Water Board. The report shall include:

a. The best estimate of when the monthly average daily dry weather a flow rate will equal or exceed design capacity.

b. A schedule for studies, design, and other steps needed to provide additional capacity for waste treatment and/or disposal facilities before the waste flow rate equals the capacity of present units.

In addition to complying with paragraphs C.14 and C.15, the required technical report shall be prepared with public participation and reviewed, approved, and jointly submitted by all planning and building departments having jurisdiction in the area served by the waste collection, treatment, or disposal facilities.

10. The discharger shall submit reports required by this order by email to: centralcoast@waterboards.ca.gov.

11. Transfer of control or ownership of a waste discharge facility must be preceded by a notice to the Central Coast Water Board at least 30 days in advance of the proposed transfer date. The notice must include a written agreement between the existing discharger and proposed discharger containing specific date for transfer of responsibility, coverage, and liability between them. Whether an order may be transferred without modification and a public hearing is at the discretion of the Board. If order modification is necessary, transfer may be delayed 120 days after the Central Coast Water Board's receipt of a complete Report of Waste Discharge.

12. Except for data determined to be confidential under Section 13267(b) of the California Water Code, all reports prepared in accordance with this order shall the available for public inspection at the office of the Central Coast Water Board.

13. Should the discharger discover that it failed to submit any relevant facts or that it submitted incorrect information in a report, it shall promptly submit the missing or incorrect information.

14. All reports shall be signed by one of the following:

    a. For a corporation: by a principal executive officer of at least the level of vice president.

    b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively.

    c. For a public agency: by either a principal executive officer or ranking elected official.

    d. A "duly authorized representative" of one of the above.

15. Any person signing a report makes the following certification, whether it is expressed or implied:

    I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware

that there are significant penalties of submitting false information, including the possibility of fine and imprisonment for knowing violations.

16. By January 30 of each year, the discharger shall submit an annual report to the Central Coast Water Board. The report shall contain the following:

    a. Both tabular and graphical summaries of the monitoring data obtained during the previous year. Duplicate copies of monthly reports are not necessary and do not fulfill requirements for summaries.

    b. A discussion of the previous year's compliance record (including any and all incidents of noncompliance) and corrective actions taken, or which may be needed, to bring the discharger into full compliance.

    c. An evaluation of wastewater flows with projected flow rate increases over time and the estimated date when flows will reach facility capacity.

    d. A discussion of operator certification and a list of current operating personnel and their grades of certification.

    e. The date of the facility's Operation and Maintenance Manual (including contingency plans as described in Provision A.27), the date the manual was last reviewed, and whether the manual is complete and valid for the current facility.

    f. A discussion of the laboratories used by the discharger to monitor compliance with effluent limits and a summary of performance relative to Section B, General Monitoring Requirements.

    g. If the facility treats industrial or domestic wastewater and there is no provision for periodic sludge monitoring in the Monitoring and Reporting Program, the report shall include a summary of sludge quantities, analyses of its chemical and moisture content, and its ultimate destination.

    h. If appropriate, the report shall also evaluate the effectiveness of the local pretreatment program using the State Water Resources Control Board's "Guidelines for Determining the Effectiveness of Local Pretreatment Program," EPA's "Introduction to the National Pretreatment Program" (http://www.epa.gov/npdes/pubs/pretreatment_program_intro_2011.pdf), or other applicable guidelines or standards.

    i. A summary of efforts to reduce salts and nutrients in the waste discharge, including but not limited to detailed descriptions of measures implemented by the discharger and/or participation in a basin-wide salts and nutrients management program.

j. A summary of collection system management plans, or reference report submitted under separate cover as required by this or separate sanitary sewer requirements.

k. If the facility has mercury seals, a summary of a mercury handling plan and implementation of that plan.

17. The discharger must notify the Central Coast Water Board whenever there is a substantial change in the volume or character of pollutants being introduced into the wastewater system. Notice shall include information on the quality and quantity of waste being introduced to the system and the anticipated impact of the waste upon the quantity and quality of the aggregate discharge.

18. The discharger must notify the Central Coast Water Board as soon as it knows or has reason to believe that it or an indirect discharger has begun, or expects to begin, use or manufacture of a "toxic waste" or "hazardous substance" not reported in the Report of Waste Discharge that may, directly or indirectly, discharge into the treatment and disposal system.

D. Bypasses or Upsets

1. Bypass

a. If the discharger knows in advance of the need for a "bypass," it shall submit notice to the Executive Officer at least 10 days before the “bypass."

b. The Central Coast Board will consider enforcement action against the discharger for “bypass;" though staff will consider the following extenuating conditions when recommending enforcement:

i. The "bypass" was unavoidable to prevent loss of life, personal injury, or "severe property damage."

ii. There was no feasible alternative to the “bypass," such as use of auxiliary treatment facilities, retention of untreated waste, or maintenance during normal periods of equipment downtime. (This condition is not satisfied if adequate back-up equipment could have been installed to prevent a “bypass" that occurred during normal periods of equipment down-time or preventive maintenance).

iii. The discharger submitted notice to the Executive Officer as specified in paragraphs C.3. and D.1.a., above.

2. Upset

A discharger seeking to establish the occurrence of an "upset" has the burden of proof. A discharger who wishes to establish the affirmative defense of "upset" shall

demonstrate, through properly signed, contemporaneous operating logs or other relative evidence that:

a. An "upset" occurred and the discharger can identify the specific cause(s) of the "upset."

b. The facility was at the time of the "upset" being properly operated, the discharger submitted notice of the "upset" within 24 hours, and the discharger took all reasonable steps to minimize or correct any adverse impact on the environment.

E. Enforcement

1. The discharger must comply with all conditions of this order. Noncompliance constitutes a violation of state law and is grounds for enforcement action or modification of the existing order.

2. Any person failing or refusing to furnish technical or monitoring program reports as required by subdivision (b) of section 13267 of the California Water Code, or falsifying any information provided therein, is guilty of a misdemeanor.

3. The discharger or any person who violates this order and who discharges waste, or causes or permits waste to be deposited where it is discharged, into waters of the state may be liable for civil and/or criminal remedies, as appropriate, pursuant to sections 13350, 13385, and 13387 of the California Water Code.

4. Upon reduction, loss, or failure of any part of the wastewater facility, the discharger shall, to the extent necessary to maintain compliance with this order, control production or all discharges, or both, until the facility is restored or an acceptable interim method of treatment or disposal is provided.

5. It shall not be a defense for a discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this order.

F. Definitions

1. "Average" or "Mean" is the arithmetic mean of daily concentrations over the specified period in which "N" is the number of days samples were analyzed during the period and "X" is either the constituent concentration (mg/L) or flow for each sampled day. When “N” is less than four and compliance with long-term limits is not demonstrated, additional samples may be required to determine the “Average” or “Mean.”

2. "Bypass" means the diversion of waste streams around any portion of a treatment facility to the disposal area or from the treatment facility to an unauthorized location.

3. A "composite sample" is a combination of no fewer than eight individual samples obtained at equal time intervals (usually hourly) over the specified sampling (composite) period. The volume of each individual sample is proportional to the flow rate at time of sampling. The period shall be specified in the Monitoring and Reporting Program ordered by the Executive Officer.

4. "Daily Discharge" means the discharge of a pollutant measured during a calendar day or during any 24-hour period reasonably representative of the calendar day for purposes of sampling.

5. “Daily Maximum" limit means the maximum acceptable concentration or mass emission rate of a pollutant measured during a calendar day or during any 24-hour period reasonably representative of the calendar day for purposes of sampling. It is normally compared with results of "composite samples."

6. "Duly Authorized Representative" is one where:

    a. The authorization is made in writing by a person described in the signatory paragraph (C.14.a, b, or c) of this document.

    b. The authorization specifies either an individual or the occupant of a position having responsibility for the overall operation of the regulated facility, such as the plant manager.

    c. The written authorization was submitted to the Central Coast Water Board.

7. A "grab sample" is defined as any individual sample collected in less than 15 minutes. "Grab samples" shall be collected during peak loading conditions, which may or may not be during hydraulic peaks.

8. "Hazardous substance" means any substance designated as hazardous or extremely hazardous in sections 66680 or 66685 of the California Code of Regulations (Title 22, Division 4, Chapter 30, Article 9).

9. "Incompatible wastes" are wastes that meet one or more of the following conditions:

    a. Wastes that create a fire or explosion hazard in the treatment works.

    b. Wastes that will cause corrosive structural damage to treatment works, including all wastes with a pH lower than 5.0 unless the works is specifically designed to accommodate such wastes.

    c. Solid or viscous wastes in amounts that cause obstruction to flow in sewers, or that cause other interference with proper operation of treatment works.

    d. Any waste, including oxygen demanding pollutants (BOD, etc.), released in such volume or strength as to cause inhibition or disruption in the treatment

works and subsequent treatment process upset and loss of treatment efficiency.

e. Heat in amounts that inhibit or disrupt biological activity in the treatment works or that raise influent temperatures above 40°C (104°F) unless the treatment works is designed to accommodate such heat.

10. "Indirect Discharger" means a nondomestic discharger introducing pollutants into a publicly owned treatment and disposal system.

11. "Log Mean" is the geometric mean. Used for determining compliance of fecal or total coliform populations, it is calculated with the following equation:

$$\text{Log Mean} = (C_1 * C_2 * ... * C_N)^{1/N}$$

in which "N" is the number of days samples were analyzed during the period and any "C" is the concentration of bacteria (MPN/100 mL) found on each day of sampling. To be valid, "N" must be five or more.

12. "Median" is the value below which half the samples (ranked progressively by increasing value) fall. It may be considered the middle value, or the average of two middle values. To be valid, three or more values are required.

13. "Overflow" means the intentional or unintentional diversion of flow from the collection and transport systems, including pumping facilities, and from disposal areas.

14. "Pollutant-free wastewater" means infiltration and inflow, storm waters, and cooling waters and condensates that are essentially free of pollutants.

15. "Severe property damage" means substantial physical damage to property, damage to treatment facilities which causes them to become inoperable, or substantial and permanent loss to natural resources which can reasonably be expected to occur in the absence of a “bypass.” It does not mean economic loss caused by delays in production.

16. "Sludge" means the solids, residues, and precipitates separated from, or created in, wastewater by the unit processes of a treatment system.

17. "To significantly contribute" to a waste discharge requirement violation means an "indirect discharger" does any of the following:

a. Discharges a daily pollutant loading in excess of that allowed by contract with the discharger or by state or local law.

b. Discharges wastewater that substantially differs in nature or constituents from its average discharge.

c. Discharges pollutants, either alone or in conjunction with discharges from other sources, resulting in a waste discharge requirement violation or preventing sludge use or disposal.

d. Discharges pollutants, either alone or in conjunction with pollutants from other sources, that increase the magnitude or duration of waste discharge requirement violations.

18. "Toxic waste" means any toxic and persistent waste that falls within the following categories:

    a. PCBs
    b. Pesticides
    c. Toxic Metals
    d. Cyanides
    e. Halogenated Organics
    f. Non-halogenated volatile organics

19. "Upset" means an exceptional incident causing noncompliance with technology-based effluent limitations because of factors beyond the reasonable control of the discharger. It does not include noncompliance caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

Resolution No. R3-2013-0052
Attachment B: Existing WDR Orders

Order No.	Agency	Facility Name	Facility Address	County
99-136	ADVENTCO HOLDING CORP	THE INN AT PASATIEMPO	555 HWY 17, Santa Cruz, CA 95060	Santa Cruz
96-036	Aromas/San Juan School District	AROMAS/SAN JUAN HIGH SCHOOL	CHITTENDEN RD/SAN JUAN HWY, Aromas, CA 95045	San Benito
00-094	ASSOCIATED TAGLINE, INC.	ASSOCIATED TAGLINE CHEMICALS	HWY 183, 3 MI W OF SALINAS, Salinas, CA 93902	Monterey
01-014	Atascadero City	ATASCADERO WWTP	6500 Palma Ave., Atascadero, CA 93422	San Luis Obispo
98-012	BETTERAVIA FARM LLC	BONITA PACKING CO.	West 1850 STOWELL Road, Santa Maria, CA 93458	Santa Barbara
97-026	BIG BASIN WATER COMPANY	Big Basin Woods Subdivision	HWY 236, Boulder Creek, CA 95006	Santa Cruz
84-015	BLACK LAKE GOLF COURSE	BLACK LAKE GOLF COURSE - RECLAIMED WATER USER	1490 GOLF COURSE LN, Nipomo, CA 93444	San Luis Obispo
91-031	BOYER FERTILIZER SERVICE, INC.	BOYER FERTILIZER SERVICE, INC.	619 RIVERSIDE, Watsonville, CA 95077	Santa Cruz
99-134	Buellton City	BUELLTON WWTP	79 INDUSTRIAL WY, Buellton, CA 93427	Santa Barbara
86-07	Burch Group, The	PRUNEDALE SHOPPING CENTER	7905 San Miguel Canyon Road, Salinas, CA 93901	Monterey
01-026	Ca Dept of Forestry Ben Lomond	BEN LOMOND CONSERVATION CAMP	13575 EMPIRE GRADE, Santa Cruz, CA 95060	Santa Cruz
01-002	CA DEPT OF MENTAL HEALTH	ATASCADERO STATE HOSPITAL	10333 EL CAMINO REAL, Atascadero, CA 93422	San Luis Obispo
98-062	Ca Dept of Parks & Rec Big Sur	PFEIFFER BIG SUR STATE PARK	Big Sur, CA 93920	Monterey
01-084	California American Water Co Monterey	CARMEL VALLEY RANCH (USER)	ONE OLD RANCH RD, Carmel, CA 93923	Monterey
01-083	California American Water Co Monterey	CARMEL VALLEY RANCH (PRODUCER)	OLD RANCH RD, Carmel, CA 93923	Monterey

01-009	California American Water Co Monterey	OAK HILLS DEVELOPMENT WWTP	Castroville, CA 95012	Monterey
R3-2006-0041	California American Water Co Monterey	LAS PALMAS RANCH WWTP	21702 River Road, Salinas, CA 93901	Monterey
83-003	California American Water Co Monterey	INDIAN SPRINGS STP	277 +/- RIVER Road, Salinas, CA 93908	Monterey
98-058	California American Water Co Monterey	PASADERA	P.O.BOX 308, Monterey, CA 93940	Monterey
99-086	California American Water Co Monterey	SPRECKELS SUGAR DIVISION	121 SPRECKELS BLVD, Spreckels, CA 93962	Monterey
04-0106	California National Guard	CAMP ROBERTS STP	US 101, CAMP ROBERTS EXIT, CA 93451	Monterey
04-0106	California National Guard	EAST GARRISON TREATMENT FAC	CAMP ROBERTS, Camp Roberts, CA 93451	San Luis Obispo
03-0035	California Polytechnic State University - San Luis Obispo	Cal Poly CampusWide WQ Plan	BLDG 70, San Luis Obispo, CA 93401	San Luis Obispo
R3-2007-0008	CALIFORNIA UTILITIES SERVICE	California Utilities	RESERVATION RD/HWY 68, Salinas, CA 93900	Monterey
01-100	CAMBRIA CSD	CAMBRIA CSD WWTP	1316 TAMSOM DR, STE 201, Cambria, CA 93428	San Luis Obispo
97-032	Canada Woods Reclamation Facility	CANADA WOODS RECLAMATION FACILITY	ESTE MADERA/CANDA SEGUNDA, Carmel, CA 93923	Monterey
97-104	CANYON CREST MUTUAL WATER CO	CANYON CREST	HUASNA RD/STAGECOACH RD, Arroyo Grande, CA 93402	San Luis Obispo
88-138	CASA DE FRUTA	CASA DE FRUTA	6680 PACHECO PASS HWY, CA 95023	Santa Clara
R3-2009-0037	CATE SCHOOL CORP	CATE SCHOOL WWTP	1960 CATE MESA RD, Carpinteria, CA 93013	Santa Barbara
93-072	CAWD Reclamation Project	Carmel Reclamation	RIO RD, Carmel, CA 93922	Monterey
R3-2011-0224	CDM-Whittaker	Former Whittaker Ordnance Facility at 2751 San Juan Road	2751 San Juan Road, Hollister, CA 95023	San Benito
R3-2005-0070	CHEVRON TEXACO	TEXACO SAN ARDO RECLAMATION PL	STAR ROUTE 42, San Ardo, CA 93450	Monterey
00-070	CLOS LACHANCE @	CLOS LACHANCE WINERY	1 HUMMINGBIRD, San Martin, CA	Santa Clara

	CORDEVALLE LLC		95040	
01-070	Coastal Cypress Corp	CHATEAU JULIEN WINERY	8940 CARMEL VALLEY RD, Carmel, CA 93922	Monterey
95-002	COUNTRYSIDE MUSHROOMS, INC.	COUNTRYSIDE MUSHROOMS, INC.	13000 CENTER AVE, Gilroy, CA 95020	Santa Clara
97-02	County of Santa Barbara Dept of General Services	LOS PRIETOS BOYS CAMP	3900 Paradise Road, Santa Barbara, CA 93110	Santa Barbara
01-115	COURTSIDE CELLARS, LLC	SAN MIGUEL WINERY	MISSION STREET, San Miguel, CA 93451	San Luis Obispo
98-070	COURTSIDE CELLARS, LLC	TOLOSA WINERY	SOUTH OF BUCKLEY ROAD, HWY 227, San Luis Obispo, CA 93401	San Luis Obispo
01-052	Crop Production Service	Crop Production Service Hollister Facility	1901 SHELTON DR, Hollister, CA 95023	San Benito
00-123	Crop Production Service	Crop Production Service Watsonville Facility	5 LAKEVIEW RD, Watsonville, CA 95076	Santa Cruz
00-030	Crop Production Service	Crop Production Service Salinas Facility	1127 TERVEN AVE, Salinas, CA 93901	Monterey
01-053	Crop Production Service	Crop Production Service Paso Robles Facility	2502 OAKWOOD, Paso Robles, CA 93446	San Luis Obispo
94-005	CYPRESS POINT CLUB	CYPRESS POINT GOLF COURSE	17 MILE DRIVE & PORTOLA RD, Pebble Beach, CA 93953	Monterey
97-066	Cypress Ridge Limited Partnership	CYPRESS RIDGE SEWER FACILITY	950 CYPRESS RIDGE PKWY, Arroyo Grande, CA 93420	San Luis Obispo
88-039	Daisy Hill Estates	Daisy Hill Estates	1595 LOS OSOS VALLEY RD, Los Osos, CA 93402	San Luis Obispo
95-027	DAVENPORT CO SD	DAVENPORT WWTP	NONE, Santa Cruz, CA 95017	Santa Cruz
00-033	David Bruce Winery Inc	DAVID BRUCE WINERY	21439 BEAR CREEK RD, Los Gatos, CA 95030	Santa Clara
94-036	DOLE FRESH VEGETABLES, INC.	DOLE FRESH VEGETABLES, INC.	32655 CAMPHORA GLORIA RD, Soledad, CA 93960	Monterey
99-061	DUNN SCHOOL	DUNN SCHOOL	2521 SANTA YNEZ ST, Los Olivos, CA 93441	Santa Barbara
03-0045	EL CAPITAN CAMPGROUND LLC	EL CAPITAN CAMPGROUND	11560 CALLE REAL, Goleta, CA 93017	Santa Barbara
91-067	Evergreen Supply	EVERGREEN SUPPLY BIXBY	CA	San Benito

		QUARRY		
04-0154	FIERO LANE WATER COMPANY, INC.	FIERO LANE WATER COMPANY, INC.	4451 BROAD ST, San Luis Obispo, CA 93406	San Luis Obispo
94-042	Flesco General Partnership	MESA DUNES MOBILE HOME ESTATES	765 MESA VIEW DR, Arroyo Grande, CA 93420	San Luis Obispo
99-064	GLOBAL MUSHROOMS	GLOBAL MUSHROOMS	5470 FRAZIER LAKE RD, Gilroy, CA 95020	Santa Clara
91-003	GOLETA SD	GOLETA SD RECLAIMED WATER PRODUCER	1000 FOWLER ST, Goleta, CA 93116	Santa Barbara
97-006	GOLETA WD	GOLETA WD RECLAIMED WATER USER	4699 HOLLISTER AVE, Goleta, CA 93110	Santa Barbara
R3-2006-0005	GONZALES, CITY OF	GONZALES WW	SHORT ROAD, Gonzales, CA 93926	Monterey
R3-2005-0063	Granite Rock Co	GRANITE ROCK SOUTHSIDE #1540	5632 AIRLINE HWY, Hollister, CA 95023	San Benito
94-046	Granite Rock Co	QUAIL HOLLOW SAND QUARRY	405 QUAIL HOLLOW RD, Felton, CA 95018	Santa Cruz
02-0062	GREENFIELD, CITY OF	GREENFIELD WWTP, CITY OF	NE END OF WALNUT AVE, Greenfield, CA 93927	Monterey
R3-2005-0015	GUADALUPE, CITY OF	GUADALUPE WWTP	515 West Main Street, Guadalupe, CA 93434	Santa Barbara
05-0017	HANSON AGGREGATES	SANTA MARGARITA QUARRY	EL CAMINO REAL, Santa Margarita, CA 93453	San Luis Obispo
R3-2012-0006	High Plains Ranch II and High Plains Ranch III	California Valley Solar Ranch Discharges of Fill Material to Waters of the State	13505 Carrisa Highway 58, California Valley, CA 93453	San Luis Obispo
R3-2008-0069	Hollister City	HOLLISTER DOMESTIC WWTP	N SIDE HWY 156, W SAN BENITO R, Hollister, CA 95023	San Benito
00-020	Hollister City	HOLLISTER INDUSTRIAL WWTP	WEST END OF SOUTH ST, Hollister, CA 95023	San Benito
R3-2009-0043	Housing Authority of the County of Santa Cruz	Buena Vista Migrant Labor Camp/Tierra Alta Apartments	113 Tierra Alta Drive, Watsonville, CA 95076	Santa Cruz
01-050	Jessen Family ltd Partnership	DUNE CO OF SALINAS	25445 CHULAR RIVER, Chualar, CA 93925	Monterey
91-005	King City	KING CITY DOMESTIC WWTF	CEMETARY RD & SALINAS RIVER, Salinas, CA 93930	Monterey

91-084	King City	KING CITY INDUSTRIAL WWTF	CEMETARY RD & SALINAS RIVER, King City, CA 93930	Monterey
89-023	KING REYNOLDS VENTURES	COSTANOA RESORT	2001 ROSSI, Pescadero, CA 94060	San Mateo
R3-2011-0217	LAGUNA SANITATION	LAGUNA COUNTY SD	3500 BLACK RD, Santa Maria, CA 93455	Santa Barbara
R3-2010-0010	LION'S GATE CSD	LION'S GATE RESERVE	1005 HIGHLAND AVE, San Martin, CA 95046	Santa Clara
86-026	LITTLE BEAR WATER CO., INC.	LITTLE BEAR WATER CO WWTP	PINE CANYON RD, King City, CA 93930	Monterey
R3-2005-0133	LOS ALAMOS CSD	LOS ALAMOS WWTP	2 M NW LOS ALAMOS, SE OF 101, Los Alamos, CA 93440	Santa Barbara
85-118	LOS OSOS CONDO HA	LOS OSOS CONDOMINIUMS TRCT1089	1981 8TH STREET, Los Osos, CA 93402	San Luis Obispo
R3-2011-0001	LOS OSOS WTP	Los Osos Water Recycling Facility	2300 Los Osos Valley Road, Los Osos, CA 93402	San Luis Obispo
99-073	LOS OSOS/BAYWOOD PARK CSD	BAYRIDGE ESTATES	BAY OAKS DR, Los Osos, CA 93402	San Luis Obispo
99-072	LOS OSOS/BAYWOOD PARK CSD	VISTA DE ORO SUBDIVISION	WOODLAND DRIVE AND PECHO RD, Los Osos, CA 93402	San Luis Obispo
86-046	LOST OAK VILLAGE CONDOMIMIUMS	LOST OAK VILLAGE CONDOMINIUMS	SANTA INEZ AVE, Los Osos, CA 93402	San Luis Obispo
86-222	MANDERLEY PROPERTIES	LOS OSOS TOWN HOMES	2016 B FAIRCHILD WY, Los Osos, CA 93402	San Luis Obispo
00-117	MARINA COAST WD	MARINA CWD DESALINATION PLANT	11 RESERVATION RD, Marina, CA 93933	Monterey
03-0003	McAbee Trucking, Inc.	MCABEE TRUCKING, INC.	155 MC CLOSKEY RD, Hollister, CA 95023	San Benito
99-078	MCCORMICK SELPH INC.	McCormick Selph Pacific Scientific	3601 UNION, Hollister, CA 95024	San Benito
R3-2011-0214	MHC TT, Inc	Thousand Trails RV Resort and Campground - San Benito	16225 Cienega Road, Paicines, CA 95043	San Benito
97-035	MISSION HILLS CSD	MISSION HILLS LA PURISIMA WWTP	1500 East Burton Mesa Boulevard, Lompoc, CA 93436	Santa Barbara
R3-2002-0061	Monarch Grove Reclamation H2O	MONARCH GROVE RECLAMATION	1945 Solano Street, Los Osos, CA 93402	San Luis Obispo

01-101	MONEY'S FOOD US, INC	PACIFIC MUSHROOM FARM	6150 CABRILLO HWY, Pescadero, CA 94060	San Mateo
84-008	MONTEREY BAY ACADEMY	MONTEREY BAY ACADEMY SEWAGE TP	783 SAN ANDREAS RD, Watsonville, CA 95077	Santa Cruz
95-032	Monterey Cnty Parks Dept	LAGUNA SECA RECREATION AREA	1025 MONTEREY HWY 68, Salinas, CA 93908	Monterey
96-026	Monterey Cnty Parks Dept	Nacimiento Resort	10625 Nacimiento Lake Drive, Bradley, CA 93426	San Luis Obispo
01-131	Monterey Cnty Parks Dept	Lake San Antonio Rec Area (S)	2610 Lake San Antonio Road, Bradley, CA 93426	Monterey
04-0054	Monterey Cnty Parks Dept	NORTHSHORE PLEYTO WWTP	2610 SAN ANTONIO, Bradley, CA 93426	Monterey
97-052	Monterey County Water Resources Agency	CASTROVILLE SEAWTR INTRUSN PRJ	855 EAST LAUREL DR, Salinas, CA 93902	Monterey
01-038	MONTEREY CSA - CHUALAR	MONTEREY CSA - CHUALAR WWTP	CHUALAR RIVER ROAD, (2 MI W), Chualar, CA 93925	Monterey
87-175	Monterey Dunes Colony	MONTEREY DUNES COLONY WWTP	195 MONTEREY DUNES WY, Castroville, CA 95012	Monterey
00-037	Monterey Mushrooms, Inc.	MONTEREY MUSHROOMS, INC.	777 MAHER COURT, Watsonville, CA 95076	Monterey
94-007	MONTEREY PENINSULA COUNTRY CLUB	Monterey Peninsula Country Club	Pebble Beach, CA 93953	Monterey
94-082	MONTEREY REGIONAL WPCA	Monterey Regional Reclamation (Producer)	CA	Monterey
85-080	MORRO SHORES MHP	MORRO SHORES MHP	633 RAMONA AVE, Los Osos, CA 93402	San Luis Obispo
99-093	MOUNT HERMON ASSOC, INC.	MOUNT HERMON CONFERENCE CENTER	37 CONFERENCE CENTER, Mount Hermon, CA 95041	Santa Cruz
00-038	Mushroom Farms, Inc.	MUSHROOM FARMS, INC.	415 HALL, Watsonville, CA 95076	Monterey
95-053	NATURE QUALITY COMPANY	NATURE QUALITY COLD STORAGE	13805 LLAGAS AVE, San Martin, CA 95046	Santa Clara
98-059	NEW CITIES DEVELOPMENT GROUP	Pasadera Country Club	MONTEREY-SALINAS HWY, Monterey, CA 93940	Monterey

02-0039	NH3 Service Co-Salinas Office	NH3 SALINAS FACILITY	945 JOHNSON AVE, Salinas, CA 93902	Monterey
94-014	NIPOMO CSD	NIPOMO CSD BLACK LAKE - RECLAIMED WATER PRODUCER	1526 WILLOW, Nipomo, CA 93444	San Luis Obispo
R3-2012-0003	NIPOMO CSD	Nipomo CSD Southland Treatment Facility	509 Southland Street, Nipomo, CA 93444	San Luis Obispo
94-006	Northern California Golf Assn	POPPY HILLS GOLF COURSE	CA	Monterey
97-070	OLAM West Coast, Inc	Olam Spices & Vegetable Ingredients - Gilroy	1350 PACHECHO PASS Highway, Gilroy, CA 95020	Santa Clara
89-006	OWENS DEVELOPMENT, REBECCA	OWENS DEVELOPMENT, REBECCA	1301 - 1349 SANTA YNEZ, Los Osos, CA 93402	San Luis Obispo
R3-2008-0039	Pajaro Valley Water Management Agency	Pajaro Valley WMA and City of Watsonville Water Reclamation	401 Panabaker Lane, Watsonville, CA 95077	Santa Cruz
00-066	Paragon Vineyard Company Inc	EDNA VALLEY VINEYARD WINERY	2585 BIDDLE RANCH RD, San Luis Obispo, CA 93401	San Luis Obispo
99-126	Paragon Vineyard Company Inc	Orcutt Road Cellars	4915 Orcutt Road, San Luis Obispo, CA 93401	San Luis Obispo
94-004	PEBBLE BEACH COMPANY	PEBBLE BEACH COMPANY - RECLAIMED WATER USER	2184 Sunset Drive, Pebble Beach, CA 93953	Monterey
05-0041	Penman Springs Vineyard	PENMAN SPRINGS VINEYARD	1985 PENMAN SPRINGS, Paso Robles, CA 93446	San Luis Obispo
03-002	PICTSWEET COMPANY, THE	PICTSWEET FROZEN FOODS	732 SOUTH HANSON WY, Santa Maria, CA 93454	Santa Barbara
88-008	Presbyterian Camp and Conference Centers, Inc.	RANCHO LA SCHERPA	2504 REFUGIO PASS, Goleta, CA 93117	Santa Barbara
87-110	RANCHO COLINA MH ESTATES STP	RANCHO COLINA MH ESTATES STP	1045 ATASCADERO RD, Morro Bay, CA 93442	San Luis Obispo
91-029 - NAR	RANCHO PASO MHP	RANCHO PASO MHP	2945 THEATRE DR, Paso Robles, CA 93446	San Luis Obispo
98-061	RANCHO SAN CARLOS PTNRSHP-USER	SANTA LUCIA PRESERVE GOLF COURSE - RECLAIMED WATER USE	Carmel, CA 93921	Monterey
97-031	Rancho San Marcos Golf Course	RANCHO SAN MARCOS GOLF COURSE	4600 HWY 154, Santa Barbara, CA 93105	Santa Barbara

86-047	Rantec	Rantec Manufacturing Plant	1173 LOS OLIVOS AVE, Los Osos, CA 93402	San Luis Obispo
91-068	Renewable Resources LLC	RENEWABLE RESOURCES, LLC	2709 PANOCHE, Paicines, CA 95043	San Benito
87-102	REYNOLDS RESORTS AVILA BEACH	OCEAN CANYON RESORT	7075 ONTARIO RD, San Luis Obispo, CA 93405	San Luis Obispo
86-029	REYNOLDS RESORTS LLC	CABANA HOLIDAY MHP	8710 PRUNEDALE NORTH R, Salinas, CA 93907	Monterey
96-006	RIDER, H. A. AND SONS	RIDER & SONS	2482 FREEDOM BLVD, Watsonville, CA 95076	Santa Cruz
94-008	Robert Louis Stevenson School	ROBERT LOUIS STEVENSON SCHOOL	FOREST LAKE RD, Pebble Beach, CA 93953	Monterey
95-003	ROYAL OAKS ENTERPRISES, INC.	ROYAL OAKS ENTERPRISES, INC.	15480 Watsonville Road, Morgan Hill, CA 95037	Santa Clara
89-147	SAN ARDO WATER DISTRICT	SAN ARDO STP	CATTLEMEN RD, San Ardo, CA 93450	Monterey
87-115	San Benito Co DPW CSA#22	CIELO VISTA ESTATES	121 TIERRA DEL SOL, Hollister, CA 95023	San Benito
R3-2004-0153	SAN BENITO COUNTY SA 45	Rancho Larios	400 AVENIDA DEL PIERO, San Juan Bautista, CA 95045	San Benito
03-0054	San Jerardo Inc.	SAN JERARDO WWTP	1401 OLD STAGE RD, Salinas, CA 93908	Monterey
98-016	SAN LORENZO VALLEY USD	SAN LORENZO VALLEY HS	7015 HWY 9, Felton, CA 95018	Santa Cruz
00-043	SAN LORENZO VALLEY WD	Bear Creek Estates WWF	BEAR CREEK RD, Boulder Creek, CA 95006	Santa Cruz
89-076	San Lucas County Water District	SAN LUCAS WWTF	HIGHWAY 198 & FREEMAN FLAT RD., San Lucas, CA 93954	Monterey
88-172	SAN LUIS COASTAL USD	BAYWOOD ELEMENTARY SCHOOL	1330 NINTH, Los Osos, CA 93402	San Luis Obispo
88-174	SAN LUIS COASTAL USD	SUNNYSIDE ELEMENTARY SCHOOL	880 MANZANITA, Los Osos, CA 93402	San Luis Obispo
89-086	SAN LUIS COASTAL USD	LOS OSOS MIDDLE SCHOOL	1555 EL MORO, Los Osos, CA 93402	San Luis Obispo
88-170	SAN LUIS COASTAL USD	MONARCH GROVE ELEMENTARY	LOS OSOS VALLEY RD, Los Osos, CA 93402	San Luis Obispo

R3-2003-0081	San Luis Obispo City	SAN LUIS OBISPO WATER RECLAMATION FACILITY	35 PRADO, San Luis Obispo, CA 94524	San Luis Obispo
95-012	San Luis Obispo County Public Works	EL CHORRO (DAIRY CREEK) GOLF COURSE	STATE RTE 1, WEST OF SLO, San Luis Obispo, CA 93401	San Luis Obispo
02-011	San Luis Obispo County Public Works	LOPEZ RECREATION AREA	LOPEZ LAKE, Arroyo Grande, CA 93420	San Luis Obispo
01-130	SAN LUIS OBISPO CSA #07	OAK SHORES LAKE NACIMIENTO	SOUTH END OF RIDGE RD, Paso Robles, CA 93446	San Luis Obispo
03-0004	SAN LUIS OBISPO CSA #18 (PRO)	COUNTRY CLUB ESTATES	255 COUNTRY CLUB DR, San Luis Obispo, CA 93401	San Luis Obispo
R3-2003-0005	SAN LUIS OBISPO GOLF CLUB USER	San Luis Obispo Golf & Country Club	255 Country Club Drive, San Luis Obispo, CA 93401	San Luis Obispo
99-046	SAN MIGUEL CSD	SAN MIGUEL SD WWTP	NORTH EXTENSION OF N ST, San Miguel, CA 93451	San Luis Obispo
95-057	SAN MIGUELITO MUTUAL WATER CO	San Miguelito Wild Cherry Canyon	WILD CHERRY CANYON, Avila Beach, CA 93424	San Luis Obispo
R3-2008-0017	Sand City	Sand City Desal Plant	Shasta Avenue, 300 feet west of Catalina Street, Sand City, CA 93955	Monterey
87-060	Sandman, Inc.	SANDMAN HOLLISTER SAND & GRAVL	1068 NASH RD, Hollister, CA 95150	San Benito
99-080	Sanford Winery	SANFORD WINERY INC	5010 SANTA ROSA Road, Lompoc, CA 93436	Santa Barbara
97-044	SANTA BARBARA CITY PWD	EL ESTERO RECLAMATION FACILITY	402 EAST MASON ST, Santa Barbara, CA 93101	Santa Barbara
98-010	Santa Barbara Cnty Parks Dept	CACHUMA SD	STAR RTE, Santa Barbara, CA 93105	Santa Barbara
02-0112	Santa Barbara Cnty Parks Dept	LIVE OAK CAMP LAKE CACHUMA	HC 58, HWY 154, Santa Barbara, CA 93105	Santa Barbara
94-017	Santa Barbara County Flood Control District	GOLETA SLOUGH FLOOD CONTROL	123 E. ANAPAMU ST, Santa Barbara, CA 93101	Santa Barbara
R3-2002-0008	SANTA CLARA VALLEY WD	MULTIYEAR STREAM MAINTENANCE	COUNTY WIDE, Santa Clara, CA 95050	Santa Clara
05-0043	SANTA CRUZ CO SANITATION DIST	COLLECTION WDR SANTA CRUZ	2750 LODE, Santa Cruz, CA 95060	Santa Cruz
01-034	SANTA CRUZ CSA #07	Boulder Creek Golf and Country Club	HWY 236, Boulder Creek, CA 95006	Santa Cruz

98-060	Santa Lucia CSD	SANTA LUCIA PRESERVE GOLF COURSE - RECLAIMED WATER PRODUCTION	1 Pronghorn Run, Carmel, CA 93923	Monterey
R3-2010-0001	Santa Maria City	SANTA MARIA WWTP	2065 East Main Street, Santa Maria, CA 93454	Santa Barbara
86-048	SANTA YNEZ APARTMENTS	SANTA YNEZ APARTMENTS	1181 SANTA YNEZ AVE, Los Osos, CA 93402	San Luis Obispo
R3-2001-0066	Scotts Valley City	SCOTTS VALLEY WWTF PRODUCER	700 LUNDY LN, Scotts Valley, CA 95066	Santa Cruz
R3-2001-0067	SCOTTS VALLEY WATER DISTRICT	Scotts Valley Recycled Water Distribution	SCOTTS VALLEY AND VICNITY, Scotts Valley, CA 95067	Santa Cruz
88-043	Sea Oaks Mobilehome Community	SEA OAKS MOBILE HOME COMMUNITY	1675 LOS OSOS VALLEY RD, Los Osos, CA 93402	San Luis Obispo
93-082	SEA PINES GOLF COURSE	SEA PINES GOLF COURSE	250 HOWARD AVE, Los Osos, CA 93402	San Luis Obispo
94-028	Seminis Vegetable Seeds	Seminis San Juan Bautista	500 LUCY BROWN, San Juan Bautista, CA 95045	San Benito
86-220	Shelrikk Estates Owners Association	SHELRIKK ESTATES CONDOMINIUMS	1320 LOS OLIVOS, Los Osos, CA 93412	San Luis Obispo
00-015	SIMONSEN LABORATORIES, INC.	SIMONSEN LABORATORIES, INC.	1180-C DAY RD, Gilroy, CA 95020	Santa Clara
R3-2008-0042	Soledad City	Soledad Sewage Treatment Plant	248 MAIN, Soledad, CA 93960	Monterey
R3-2007-0069	Solvang City	Solvang WWTP	WEST OF ALISAL RD, Solvang, CA 93463	Santa Barbara
98-052	SOUTH COUNTY REG WW AUTHORITY	SCRWA RECLAIMING WW FACILITY	LUCHESSA AVE, Gilroy, CA 95020	Santa Clara
95-016	SOUTH VALLEY MUSHROOM FARM INC	SOUTH VALLEY MUSHROOM FARM	1220 DIANA AVE, Morgan Hill, CA 95037	Santa Clara
92-069	SPAWN MATE, INC.	ARROYO GRANDE MUSHROOM FARM	4000 HUASNA RD, Arroyo Grande, CA 93421	San Luis Obispo
88-041	SUNNY OAKS MOBILE HOME PARK	SUNNY OAKS MHP	1701 LOS OSOS VALLEY RD, Los Osos, CA 93402	San Luis Obispo
R3-2004-0065	Sunnyslope CWD	RIDGEMARK ESTATES WWTP	SOUTHSIDE RD, Hollister, CA 95024	San Benito
00-017	SV Partners Winery	SV PARTNERS WINERY	CLARK RD. WESTERLY SAN JUAN	San Luis

			CK, Shandon, CA 93461	Obispo
R3-2007-0029	TEMPLETON CSD	MEADOWBROOK WWF	P.O. BOX 780, Templeton, CA 93465	San Luis Obispo
89-029	THE BLUFFS HA	BLUFFS SUBDIVISION	14142 RESERVATION RD, Salinas, CA 93901	Monterey
97-062	Tosco Corporation San Luis Obispo	TOSCO SANTA MARIA PUMP STATION	1580 BATTLES RD, Santa Maria, CA 93454	Santa Barbara
98-017	TREANNA WINERY	TREANA WINERY	4280 SECOND WIND WY, Paso Robles, CA 93447	San Luis Obispo
98-056	Treasury Wine Estates	Paso 360 Winery	7000 East Hwy 46, Paso Robles, CA 93446	San Luis Obispo
R3-2012-0015	Tres Pinos WD	TRES PINOS WWTP	8511 SOUTHSIDE RD, Tres Pinos, CA 95075	San Benito
86-149	US Army Corps of Engineers Los Angeles	SANTA BARBARA DREDGE	SANTA BARBARA HARBOR, Santa Barbara, CA 93100	Santa Barbara
94-031	US Army Garrison Fort Hunter Liggett	FT. HUNTER LIGGETT WWTP	JOLON ROAD, King City, CA 93930	Monterey
98-009	US PENITENTIARY	LOMPOC PENITENTIARY WW FACILITY	3901 KLEIN BLVD, Lompoc, CA 93436	Santa Barbara
R3-2002-0032	Ventana Inn, Inc.	Ventana Inn Resort - Big Sur	1 Mi South of Big Sur State Park, Big Sur, CA 93920	Monterey
92-130	VISTA DEL MAR UNION SCHOOL DST	VISTA DEL MAR UNION SCHOOL	9467 San Julian Road, Gaviota, CA 93117	Santa Barbara
02-0040	Western Farm Service Inc	Crop Production Service Santa Maria Facility	3935 BROWN, Santa Maria, CA 93454	Santa Barbara
00-122	Wilbur-Ellis Company	Wilbur-Ellis Co. Hollister Facility	1601 Shelton Way, Hollister, CA 95023	San Benito
01-051	Wilbur-Ellis Company	Wilbur-Ellis Co. Salinas SS	1427 ABBOTT, Salinas, CA 93901	Monterey
93-058	Wilbur-Ellis Company	Wilbur-Ellis Co. Soledad SS	32393 MCCOY, Soledad, CA 93960	Monterey
92-006	Wilbur-Ellis Company	Wilbur-Ellis Co. Salinas JP	1505 ABBOTT, Salinas, CA 93901	Monterey
99-104	Wilbur-Ellis Company	Wilbur-Ellis Co. Soledad JP	32530 SILLIMAN, Soledad, CA 93960	Monterey
00-139	WOODLANDS MUTUAL WATER CO	WOODLANDS MUTUAL WATER CO	3701 S HIGUERA, San Luis Obispo, CA 93401	San Luis Obispo

Appendix C: Flood Risk Assessment and Base Flood Elevation Determination

MONSOON CONSULTANTS

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(805) 476-6168 www.monsoonconsultants.com

Mr. Kelly Dodds, Director of Utilities
San Miguel Community Services District
1150 Mission Street
San Miguel, CA 93451

June 8, 2020

Re: SMCSD Machado WWTF – Flood Risk Assessment and Base Flood Elevation Determination

Dear Kelly:

Per your request, Monsoon Consultants (Monsoon) has performed a hydrologic and hydraulic analysis to assess the flooding risk potential and to determine the Base Flood Elevation (BFE) for the Machado WWTF property. The subject property includes four (4) separate parcels of land which in total comprise approximately 38.4 acres (APN 021-051-013, 021-051-015, 021-051-016 & 021-051-017). The location of the site is depicted in Figure 1. The Salinas River is located along the eastern portion of the property which has a FEMA 100-year Zone A regulatory Special Flood Hazard Area (SFHA). Based on a review of the Effective FEMA FIRM flood maps (FIRM Panel Nos. 06079C0150G & 06079C0400G, Effective Date November 16, 2012), it was determined that a portion of the subject property lies within the 100-year Zone A SFHA, although none of the existing treatment plant facilities are located within the mapped floodplain. The is no Base Flood Elevation (BFE) associated with the Zone A SFHA and no hydraulic modeling was performed by FEMA to establish the location and limits of the existing Zone A SFHA. Traditionally, the limits of Zone A SFHA's are delineated based on an interpretation of available topography. A copy of the existing FEMA FIRM is presented in Figure 2. Figure 3 is a close-up depiction of the Zone A SFHA in the immediate area of the WWTF.

The hydrologic and hydraulic analysis was performed in conjunction with the planning and engineering for the upgrade and expansion of the DISTRICT's Wastewater

Treatment Facility (WWTF). This upgrade will eventually provide the DISTRICT with the capacity to produce and convey a supply of high-quality effluent that will meet California Title 22 requirements for non-contact irrigation of vineyards and / or indirect recharge to the groundwater aquifer, with an ultimate maximum day dry weather flow capacity of 0.60 MGD. The results of the hydrologic and hydraulic analysis described in the following sections of this report are intended to be used for the purposes of siting and designing the proposed WWTF improvements.

HYDROLOGY

The contributing watershed was mapped using the ArcGIS Spatial Analyst Hydrology toolset to analyze the 2018 LIDAR USGS Digital Elevation Model for the Salinas River Watershed. For the purposes of watershed model development, Monsoon discretized the contributing watershed into 14 sub-basins, using the NRCS 8 Digit HUC Watershed boundaries. A graphical representation of the contributing watershed is presented in Figure 4. Soils and land cover data were obtained from USDA spatial databases. A summary of the relevant watershed data is presented in Table 1.

Sub-Watershed	DA (sq ft.)	DA (sq mi.)	CN
Cholame Valley	6621368219	237.51	77.70
San Jacinto Creek	5500713445	197.31	77.66
Indian Creek	2222074236	79.71	75.91
Cormack-McDonald	1017910092	36.51	77.57
Shell Creek	1482572608	53.18	73.21
Mid San Juan Creek	3033199237	108.80	74.61
Navajo Creek	1451460051	52.06	72.39
Upper San Juan Creek	4780423689	171.47	74.93
San Marcos Creek	1249626624	44.82	77.99
Huer Huero Creek	4496205750	161.28	75.74
Peachy Canyon	2057442551	73.80	77.93
Paso Robles Creek	1871952530	67.15	76.55
Upper Salinas River	7375721615	264.57	75.52
San Miguel	101926711.9	3.66	76.53

TABLE 1 SUB-WATERSHED DATA

The precipitation data that was used in the hydrologic model was obtained from NOAA's Atlas 14 rainfall data server for points near the geographic center of each the sub-watersheds. A summary of the rainfall data for the watershed is presented in Table 2 (See Attached).

The U.S. Army Corps of Engineers HEC-HMS computer program was used to estimate the peak discharges in the Salinas River for the 100-year and 500-year statistical storm events. A 24-hour synthetic rainfall distribution was developed for each of the fourteen (14) sub-basins in accordance with the procedure described in the USDA NRCS National Engineering Handbook - Part 630 Hydrology. Based on the results of our analysis, Monsoon computed that the peak discharge, that will occur during a 100-year 24-hr storm event at the SMCSD Machado WWTF site, will be approximately 161,400-cfs. Monsoon also computed the peak discharge, that will occur during a 500-year 24-hr storm event, will be approximately 236,300-cfs. For comparison purposes, the San Luis Obispo County engineer-of record for the 14th Street / North River Road Bridge replacement project estimated that the 100-year 24-hr peak discharge was 140,000-cfs. The difference in the peak discharge estimates are likely due to differences in the precipitation data that was used in the different models. The precipitation data that was utilized in the current study was based on the NOAA Atlas 14 Volume 6 (Version 2.3), which was last updated in 2014.

HYDRAULICS

To assess the flooding risk potential at the SMCSD Machado WWTF and determine the Base Flood Elevation (BFE) in the Salinas River at the subject site, MONSOON performed an analysis using the U.S. Army Corps of Engineers' one-dimensional Hydrologic Engineering Center's River Analysis System (HEC-RAS). HEC-RAS utilizes user-inputted cross sections and peak discharge data to determine flow characteristics along a stream. MONSOON utilized the results of our HEC-HMS hydrologic model as input to determine the 100-year and 500-year flows for the project area.

Twenty-three (23) cross-sections were derived from the USGS 2018 LIDAR elevation survey data which was obtained in conjunction with a study of the Salinas River Watershed currently underway by a multi-agency consortium. The locations of the cross sections are shown on Figure 5.

The Salinas River channel is braided with scattered light - heavy vegetation along the channel alignment. Monsoon assigned a Manning's "n-value" of 0.055 for the river channel. The undeveloped overbank areas include "timbered" areas and "range land" which are covered in grasses and light brush. In addition, residential urban development is present within the community of San Miguel. Monsoon assigned a Manning's "n-value" to be 0.065 for the overbank areas.

For the purposes of hydraulic modeling, the HEC-RAS calculations assumed a "Normal Depth" downstream and upstream boundary condition. The average slope of this reach of the Salinas River was derived from our interpretation of the USGS 2018 LIDAR elevation data and was determined to be approximately 0.002 ft/ft (0.2%). A summary of the results of the hydraulic analysis are presented in Table 3 (100-year) and Table 4 (500-year).

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Salinas River_SM	100000	SMCSD WWTF_100YR	161408	602	622.01		622.39	0.000974	5	33003.6	2561.78	0.23
Salinas River_SM	98948	SMCSD WWTF_100YR	161408	600	620.39		621	0.001827	7	27655.38	2324.67	0.32
Salinas River_SM	97961	SMCSD WWTF_100YR	161408	598	619.3		619.67	0.000947	5.11	34504.48	2566.54	0.23
Salinas River_SM	96543	SMCSD WWTF_100YR	161408	595	617.97		618.35	0.000903	4.96	32546.19	2134.92	0.22
Salinas River_SM	95341	SMCSD WWTF_100YR	161408	592	616.36		617.04	0.001293	6.6	24472.14	1361.99	0.27
Salinas River_SM	94474	SMCSD WWTF_100YR	161408	590	615.21		615.9	0.00132	6.73	24413.41	1381.34	0.28
Salinas River_SM	93688	SMCSD WWTF_100YR	161408	589	613.99		614.75	0.001599	7.06	23266.57	1421.19	0.3
Salinas River_SM	93006	SMCSD WWTF_100YR	161408	588	613.15		613.76	0.001215	6.4	26352.42	1597.81	0.27
Salinas River_SM	92597	SMCSD WWTF_100YR	161408	587	612.61		613.25	0.001283	6.51	26103.52	1700.01	0.27
Salinas River_SM	92225	SMCSD WWTF_100YR	161408	587	612.2		612.79	0.001131	6.34	27265.26	1761.37	0.26
Salinas River_SM	91827	SMCSD WWTF_100YR	161408	586	611.8		612.34	0.001046	6.22	28474	1730.71	0.25
Salinas River_SM	91476	SMCSD WWTF_100YR	161408	585	611.59		611.99	0.000762	5.28	33495.95	2112.77	0.21
Salinas River_SM	90872	SMCSD WWTF_100YR	161408	584	611.28		611.58	0.000535	4.54	38312.39	2255.52	0.18
Salinas River_SM	89949	SMCSD WWTF_100YR	161408	583	610.91		611.14	0.000382	3.92	42159.95	2485.14	0.15
Salinas River_SM	89024	SMCSD WWTF_100YR	161408	581	610.56		610.81	0.000342	4.02	41626.45	2255.26	0.15
Salinas River_SM	88147	SMCSD WWTF_100YR	161408	580	609.67		610.3	0.000981	6.43	26914.76	1843.92	0.25
Salinas River_SM	87486	SMCSD WWTF_100YR	161408	579	609.28		609.72	0.000637	5.4	32036.02	2016.27	0.2
Salinas River_SM	86848	SMCSD WWTF_100YR	161408	577.26	608.86		609.32	0.000626	5.65	33139.77	2324.16	0.2
Salinas River_SM	85844	SMCSD WWTF_100YR	161408	576	607.93		608.44	0.001282	5.79	29638.26	2837.34	0.27
Salinas River_SM	84911	SMCSD WWTF_100YR	161408	575	605.41		606.39	0.004336	7.95	20311.73	2136.23	0.45
Salinas River_SM	83915	SMCSD WWTF_100YR	161408	573	601.7		602.74	0.003128	8.17	19760.51	1555.81	0.4
Salinas River_SM	82991	SMCSD WWTF_100YR	161408	572	599.58		600.47	0.001903	7.56	21530.54	1449.35	0.33
Salinas River_SM	82008	SMCSD WWTF_100YR	161408	571	598.32	586.59	598.82	0.001302	5.7	28295.36	1983.45	0.27

TABLE 3 SUMMARY OF HEC-RAS HYDRAULIC 100-YEAR MODEL RESULTS

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Salinas River_SM	100000	SMCSD WWTF_500YR	236243	602	626		626.48	0.000903	5.66	43343.11	2625.07	0.23
Salinas River_SM	98948	SMCSD WWTF_500YR	236243	600	624.55		625.25	0.001521	7.51	37394.75	2362.81	0.3
Salinas River_SM	97961	SMCSD WWTF_500YR	236243	598	623.65		624.09	0.000828	5.64	45737.83	2594.81	0.22
Salinas River_SM	96543	SMCSD WWTF_500YR	236243	595	622.42		622.91	0.000828	5.61	42124.32	2230.72	0.22
Salinas River_SM	95341	SMCSD WWTF_500YR	236243	592	620.67		621.61	0.00137	7.78	30400.18	1385.19	0.29
Salinas River_SM	94474	SMCSD WWTF_500YR	236243	590	619.44		620.4	0.001407	7.95	30327.24	1475.72	0.3
Salinas River_SM	93688	SMCSD WWTF_500YR	236243	589	618.17		619.21	0.001633	8.24	29294.26	1496.49	0.32
Salinas River_SM	93006	SMCSD WWTF_500YR	236243	588	617.33		618.17	0.001273	7.5	33292.58	1796.35	0.28
Salinas River_SM	92597	SMCSD WWTF_500YR	236243	587	616.78		617.63	0.001325	7.59	34424.8	2249.24	0.29
Salinas River_SM	92225	SMCSD WWTF_500YR	236243	587	616.35		617.15	0.001191	7.43	35500.6	2179.65	0.27
Salinas River_SM	91827	SMCSD WWTF_500YR	236243	586	615.91		616.67	0.001151	7.42	36382.5	2049.83	0.27
Salinas River_SM	91476	SMCSD WWTF_500YR	236243	585	615.73		616.27	0.000813	6.21	43006.1	2376.43	0.23
Salinas River_SM	90872	SMCSD WWTF_500YR	236243	584	615.4		615.82	0.000584	5.38	47724.89	2307.6	0.19
Salinas River_SM	89949	SMCSD WWTF_500YR	236243	583	615		615.33	0.000432	4.7	52414.34	2518.53	0.17
Salinas River_SM	89024	SMCSD WWTF_500YR	236243	581	614.58		614.94	0.000413	4.91	50797.66	2306.15	0.17
Salinas River_SM	88147	SMCSD WWTF_500YR	236243	580	613.45		614.33	0.001134	7.72	34113.21	1971.97	0.27
Salinas River_SM	87486	SMCSD WWTF_500YR	236243	579	613		613.64	0.000773	6.59	39757.75	2178.85	0.23
Salinas River_SM	86848	SMCSD WWTF_500YR	236243	577.26	612.51		613.15	0.000761	6.83	42078.59	2574.71	0.23
Salinas River_SM	85844	SMCSD WWTF_500YR	236243	576	611.57		612.19	0.001205	6.5	40149.09	2981.06	0.27
Salinas River_SM	84911	SMCSD WWTF_500YR	236243	575	609.41		610.37	0.003529	7.85	30100.84	2764.81	0.42
Salinas River_SM	83915	SMCSD WWTF_500YR	236243	573	605.89		607	0.003212	8.46	27921.92	2131.5	0.41
Salinas River_SM	82991	SMCSD WWTF_500YR	236243	572	603.47		604.66	0.002038	8.82	27928.94	1979.35	0.35
Salinas River_SM	82008	SMCSD WWTF_500YR	236243	571	602.26	588.91	602.91	0.001304	6.49	36387.07	2103.36	0.28

TABLE 4 SUMMARY OF HEC-RAS HYDRAULIC 500-YEAR MODEL RESULTS

Based on the results of our analysis, Monsoon determined that the 100-year Base Flood Elevation (BFE), at the location of the SMCSD Machado WWTP, is at an elevation of 613 feet

(NAVD 1988) above mean sea level (AMSL). A graphical depiction of the maximum limits of flood inundation that would occur during a 100-year flooding event are graphically depicted in Figure 6. Figure 7 is a close-up depiction of the 100-year flood inundation limits in the immediate area of the WWTF. The 500 -year Base Flood Elevation (BFE) is at an elevation of 617 feet AMSL. A graphical depiction of the maximum limits of flood inundation that would occur during a 500-year flooding event are graphically depicted in Figure 8. Figure 9 is a close-up depiction of the 500-year flood inundation limits in the immediate area of the WWTF.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our analysis, Monsoon recommends that all future improvements and facilities that are made at the SMCSD Machado WWTF site be designed and constructed such that they are protected from flooding to a minimum 100-year Base Flood Elevation of 613-feet AMSL. New and renovated facilities can either be constructed above this elevation or be designed to be flood-proofed to this elevation. If the proposed WWTF upgrade and expansion of the facility is designed and constructed to meet these criteria, the new WWTF will not be adversely impacted from flood levels which are associated with a flood event with a 1% probability of occurrence.

If you have any questions or require additional information, please do not hesitate to contact me.

MONSOON CONSULTANTS

Blaine T. Reely

Blaine T. Reely, Ph.D., P.E.
President, Monsoon Consultants

June 8, 2020
Date



Attachments

Tables

Table 2: NOAA Atlas 14 Precipitation Data

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Figure 2: FEMA FIRM
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Figure 6: 100-year Flood Inundation Map
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Figure 8: 500-year Flood Inundation Map
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TABLE 2
NOAA ATLAS PRECIPITATION DATA
SMCSD WWTF FLOOD RISK ASSESSMENT STUDY

NOAA ATLAS 14 PRECIPITATION

Upper San Juan Creek

	100-YR PRECIPITATION	500-YR PRECIPITATION
5-min	0.373(0.290-0.484)	0.513(0.365-0.728)
10-min	0.534(0.416-0.694)	0.736(0.523-1.04)
15-min	0.646(0.503-0.839)	0.889(0.633-1.26)
30-min	0.916(0.713-1.19)	1.26(0.898-1.79)
60-min	1.32(1.03-1.71)	1.81(1.29-2.57)
2-hr	1.91(1.49-2.48)	2.62(1.87-3.73)
3-hr	2.41(1.88-3.13)	3.29(2.34-4.68)
6-hr	3.40(2.64-4.41)	4.61(3.28-6.55)
12-hr	4.37(3.40-5.67)	5.89(4.19-8.37)
24-hr	5.75(4.69-7.19)	7.72(5.88-10.3)

Shell Creek

	100-YR PRECIPITATION	500-YR PRECIPITATION
5-min	0.373(0.297-0.474)	0.470(0.346-0.646)
10-min	0.535(0.425-0.679)	0.674(0.496-0.926)
15-min	0.647(0.514-0.821)	0.815(0.599-1.12)
30-min	0.904(0.719-1.15)	1.14(0.838-1.57)
60-min	1.31(1.04-1.66)	1.65(1.21-2.27)
2-hr	1.91(1.52-2.43)	2.41(1.77-3.31)
3-hr	2.45(1.95-3.11)	3.09(2.27-4.25)
6-hr	3.55(2.82-4.51)	4.48(3.29-6.15)
12-hr	4.90(3.90-6.22)	6.15(4.52-8.46)
24-hr	6.76(5.49-8.50)	8.52(6.42-11.5)

Navajo Creek

5-min	0.370(0.286-0.484)	0.477(0.339-0.679)
10-min	0.531(0.410-0.694)	0.684(0.486-0.973)
15-min	0.642(0.496-0.840)	0.827(0.588-1.18)
30-min	0.897(0.693-1.17)	1.16(0.821-1.64)
60-min	1.29(1.00-1.69)	1.67(1.19-2.37)
2-hr	1.88(1.45-2.46)	2.42(1.72-3.44)
3-hr	2.42(1.87-3.16)	3.10(2.20-4.41)
6-hr	3.47(2.68-4.54)	4.44(3.15-6.31)
12-hr	4.68(3.61-6.11)	5.94(4.22-8.44)
24-hr	6.37(5.13-8.08)	8.08(6.11-10.9)

Mid San Juan Creek

5-min	0.311(0.242-0.405)	0.418(0.296-0.595)
10-min	0.446(0.346-0.581)	0.598(0.424-0.853)
15-min	0.540(0.419-0.703)	0.724(0.513-1.03)
30-min	0.743(0.577-0.967)	0.996(0.706-1.42)
60-min	1.05(0.817-1.37)	1.41(1.00-2.01)
2-hr	1.55(1.21-2.02)	2.08(1.47-2.97)
3-hr	1.95(1.52-2.54)	2.62(1.85-3.73)
6-hr	2.70(2.10-3.52)	3.61(2.56-5.14)
12-hr	3.53(2.74-4.59)	4.67(3.31-6.65)
24-hr	4.70(3.84-5.86)	6.18(4.72-8.26)

TABLE 2
NOAA ATLAS PRECIPITATION DATA
SMCSD WWTF FLOOD RISK ASSESSMENT STUDY

NOAA ATLAS 14 PRECIPITATION

Cormack

	100-YR PRECIPITATION	500-YR PRECIPITATION
5-min	0.303(0.235-0.394)	0.402(0.285-0.572)
10-min	0.434(0.337-0.565)	0.576(0.409-0.819)
15-min	0.525(0.408-0.683)	0.696(0.494-0.991)
30-min	0.722(0.560-0.939)	0.956(0.679-1.36)
60-min	1.02(0.792-1.33)	1.35(0.959-1.92)
2-hr	1.51(1.17-1.97)	2.00(1.42-2.85)
3-hr	1.89(1.47-2.46)	2.51(1.78-3.57)
6-hr	2.62(2.03-3.40)	3.46(2.46-4.93)
12-hr	3.42(2.66-4.45)	4.49(3.19-6.39)
24-hr	4.55(3.68-5.75)	5.96(4.48-8.08)

San Jacinto

	100-YR PRECIPITATION	500-YR PRECIPITATION
5-min	0.384(0.299-0.500)	0.503(0.357-0.716)
10-min	0.551(0.428-0.716)	0.721(0.512-1.03)
15-min	0.666(0.518-0.866)	0.872(0.619-1.24)
30-min	0.919(0.714-1.20)	1.20(0.854-1.71)
60-min	1.31(1.02-1.70)	1.71(1.22-2.44)
2-hr	1.88(1.46-2.44)	2.47(1.75-3.51)
3-hr	2.35(1.83-3.05)	3.08(2.19-4.38)
6-hr	3.35(2.61-4.36)	4.39(3.12-6.25)
12-hr	4.62(3.59-6.00)	6.02(4.27-8.56)
24-hr	6.36(5.16-8.00)	8.30(6.25-11.2)

Cholame

	100-YR PRECIPITATION	500-YR PRECIPITATION
5-min	0.365(0.287-0.470)	0.484(0.349-0.679)
10-min	0.523(0.411-0.673)	0.694(0.500-0.974)
15-min	0.633(0.497-0.814)	0.839(0.604-1.18)
30-min	0.872(0.685-1.12)	1.16(0.832-1.62)
60-min	1.23(0.968-1.59)	1.64(1.18-2.29)
2-hr	1.81(1.42-2.33)	2.40(1.73-3.37)
3-hr	2.26(1.77-2.90)	2.99(2.15-4.20)
6-hr	3.17(2.49-4.07)	4.19(3.02-5.88)
12-hr	4.15(3.26-5.33)	5.45(3.93-7.65)
24-hr	5.49(4.49-6.84)	7.21(5.52-9.60)

Indian

	100-YR PRECIPITATION	500-YR PRECIPITATION
5-min	0.397(0.316-0.504)	0.510(0.376-0.698)
10-min	0.569(0.453-0.722)	0.731(0.539-1.00)
15-min	0.688(0.548-0.873)	0.884(0.652-1.21)
30-min	0.964(0.767-1.22)	1.24(0.913-1.70)
60-min	1.41(1.12-1.78)	1.81(1.33-2.47)
2-hr	2.06(1.64-2.61)	2.65(1.95-3.63)
3-hr	2.63(2.09-3.34)	3.38(2.50-4.63)
6-hr	3.85(3.06-4.88)	4.95(3.65-6.77)
12-hr	5.33(4.25-6.77)	6.81(5.03-9.33)
24-hr	7.29(5.94-9.12)	9.30(7.04-12.5)

TABLE 2
NOAA ATLAS PRECIPITATION DATA
SMCSD WWTF FLOOD RISK ASSESSMENT STUDY

NOAA ATLAS 14 PRECIPITATION

San Miguel

	100-YR PRECIPITATION	500-YR PRECIPITATION
5-min	0.336(0.259-0.440)	0.442(0.312-0.633)
10-min	0.482(0.372-0.630)	0.633(0.447-0.907)
15-min	0.582(0.450-0.762)	0.766(0.540-1.10)
30-min	0.779(0.601-1.02)	1.02(0.723-1.47)
60-min	1.09(0.843-1.43)	1.44(1.01-2.06)
2-hr	1.54(1.19-2.02)	2.02(1.42-2.89)
3-hr	1.92(1.48-2.52)	2.51(1.77-3.59)
6-hr	2.75(2.12-3.60)	3.59(2.53-5.14)
12-hr	3.87(2.98-5.06)	5.07(3.58-7.26)
24-hr	5.42(4.45-6.73)	7.17(5.48-9.57)

Paso Robles

	100-YR PRECIPITATION	500-YR PRECIPITATION
5-min	0.495(0.387-0.639)	0.649(0.461-0.923)
10-min	0.710(0.555-0.916)	0.931(0.661-1.32)
15-min	0.858(0.671-1.11)	1.13(0.799-1.60)
30-min	1.21(0.946-1.56)	1.59(1.13-2.25)
60-min	1.79(1.40-2.30)	2.34(1.66-3.33)
2-hr	2.62(2.05-3.38)	3.44(2.44-4.88)
3-hr	3.35(2.62-4.33)	4.39(3.12-6.24)
6-hr	4.97(3.89-6.41)	6.49(4.61-9.22)
12-hr	6.92(5.42-8.94)	8.98(6.38-12.8)
24-hr	9.46(8.07-11.3)	12.3(9.86-15.6)

San Marcos

5-min	0.399(0.308-0.521)	0.522(0.369-0.746)
10-min	0.571(0.441-0.747)	0.749(0.530-1.07)
15-min	0.691(0.534-0.904)	0.906(0.640-1.29)
30-min	0.960(0.741-1.25)	1.26(0.889-1.80)
60-min	1.38(1.06-1.80)	1.80(1.27-2.58)
2-hr	2.07(1.60-2.71)	2.72(1.92-3.88)
3-hr	2.62(2.02-3.43)	3.43(2.42-4.90)
6-hr	3.80(2.94-4.97)	4.97(3.51-7.09)
12-hr	5.16(3.99-6.75)	6.70(4.74-9.57)
24-hr	6.99(5.87-8.50)	9.06(7.17-11.7)

Peachy Canyon

5-min	0.408(0.313-0.538)	0.538(0.379-0.769)
10-min	0.585(0.448-0.770)	0.770(0.544-1.10)
15-min	0.707(0.542-0.932)	0.932(0.658-1.33)
30-min	0.990(0.759-1.30)	1.30(0.921-1.87)
60-min	1.44(1.11-1.90)	1.90(1.34-2.72)
2-hr	2.09(1.60-2.75)	2.76(1.95-3.94)
3-hr	2.62(2.01-3.46)	3.45(2.44-4.94)
6-hr	3.82(2.93-5.03)	5.01(3.53-7.16)
12-hr	5.32(4.08-7.00)	6.89(4.87-9.86)
24-hr	7.22(6.03-8.82)	9.32(7.29-12.2)

TABLE 2
NOAA ATLAS PRECIPITATION DATA
SMCSD WWTF FLOOD RISK ASSESSMENT STUDY

NOAA ATLAS 14 PRECIPITATION

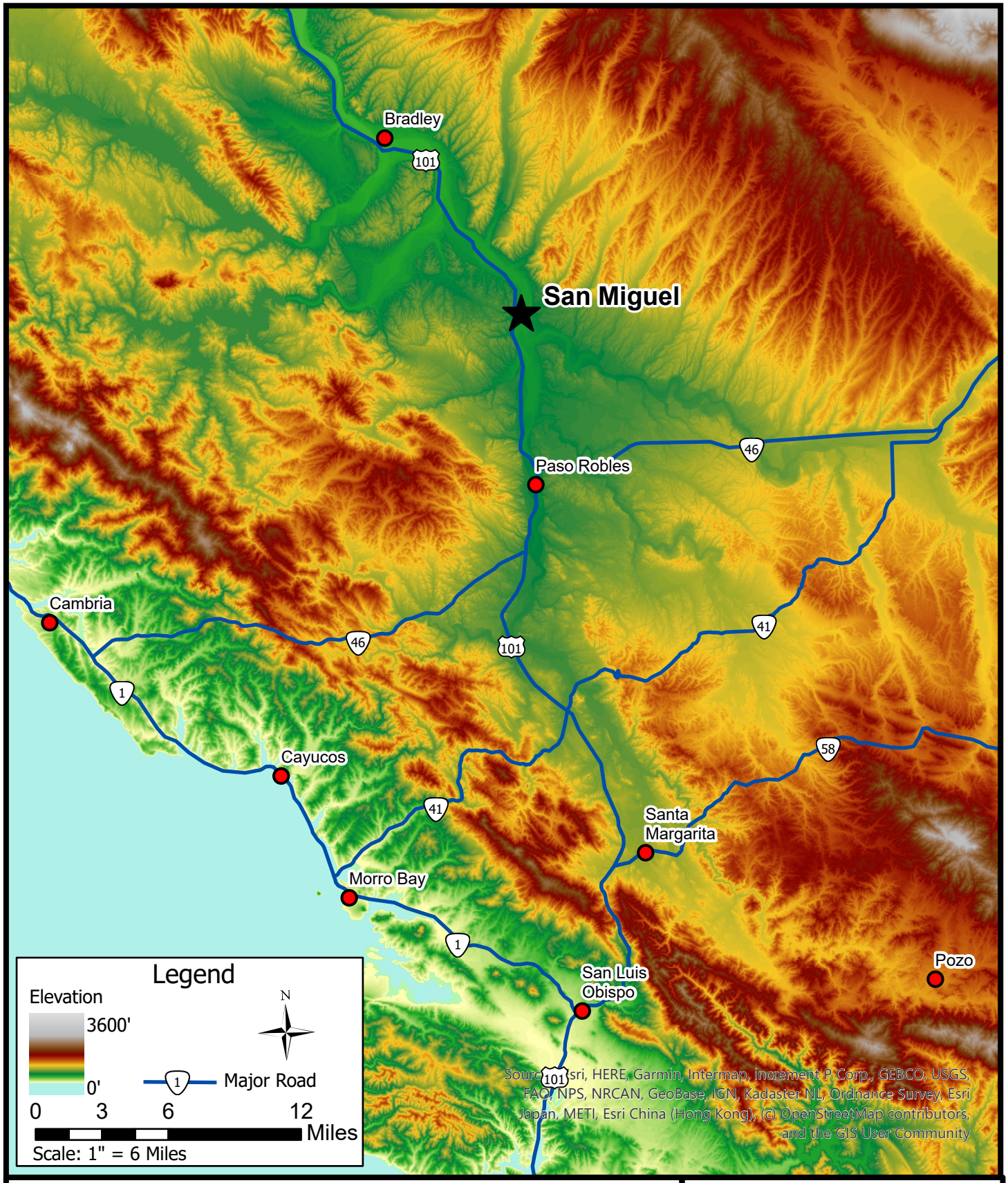
Huer Huero

	100-YR PRECIPITATION	500-YR PRECIPITATION
5-min	0.417(0.326-0.539)	0.539(0.391-0.750)
10-min	0.598(0.468-0.773)	0.772(0.560-1.08)
15-min	0.723(0.565-0.934)	0.934(0.678-1.30)
30-min	1.01(0.792-1.31)	1.31(0.949-1.82)
60-min	1.49(1.17-1.93)	1.93(1.40-2.68)
2-hr	2.16(1.69-2.79)	2.78(2.02-3.88)
3-hr	2.74(2.14-3.54)	3.54(2.57-4.92)
6-hr	4.04(3.16-5.22)	5.20(3.78-7.24)
12-hr	5.66(4.42-7.31)	7.24(5.25-10.1)
24-hr	7.73(6.36-9.60)	9.88(7.54-13.2)

Upper Salinas

	100-YR PRECIPITATION	500-YR PRECIPITATION
5-min	0.423(0.337-0.534)	0.526(0.388-0.721)
10-min	0.606(0.484-0.766)	0.754(0.556-1.03)
15-min	0.732(0.585-0.926)	0.912(0.672-1.25)
30-min	1.04(0.828-1.31)	1.29(0.952-1.77)
60-min	1.54(1.23-1.95)	1.92(1.42-2.63)
2-hr	2.28(1.82-2.88)	2.86(2.11-3.92)
3-hr	2.94(2.35-3.72)	3.71(2.73-5.08)
6-hr	4.46(3.56-5.64)	5.64(4.16-7.73)
12-hr	6.40(5.11-8.10)	8.03(5.92-11.0)
24-hr	8.90(7.31-11.1)	11.1(8.49-14.9)

FIGURES

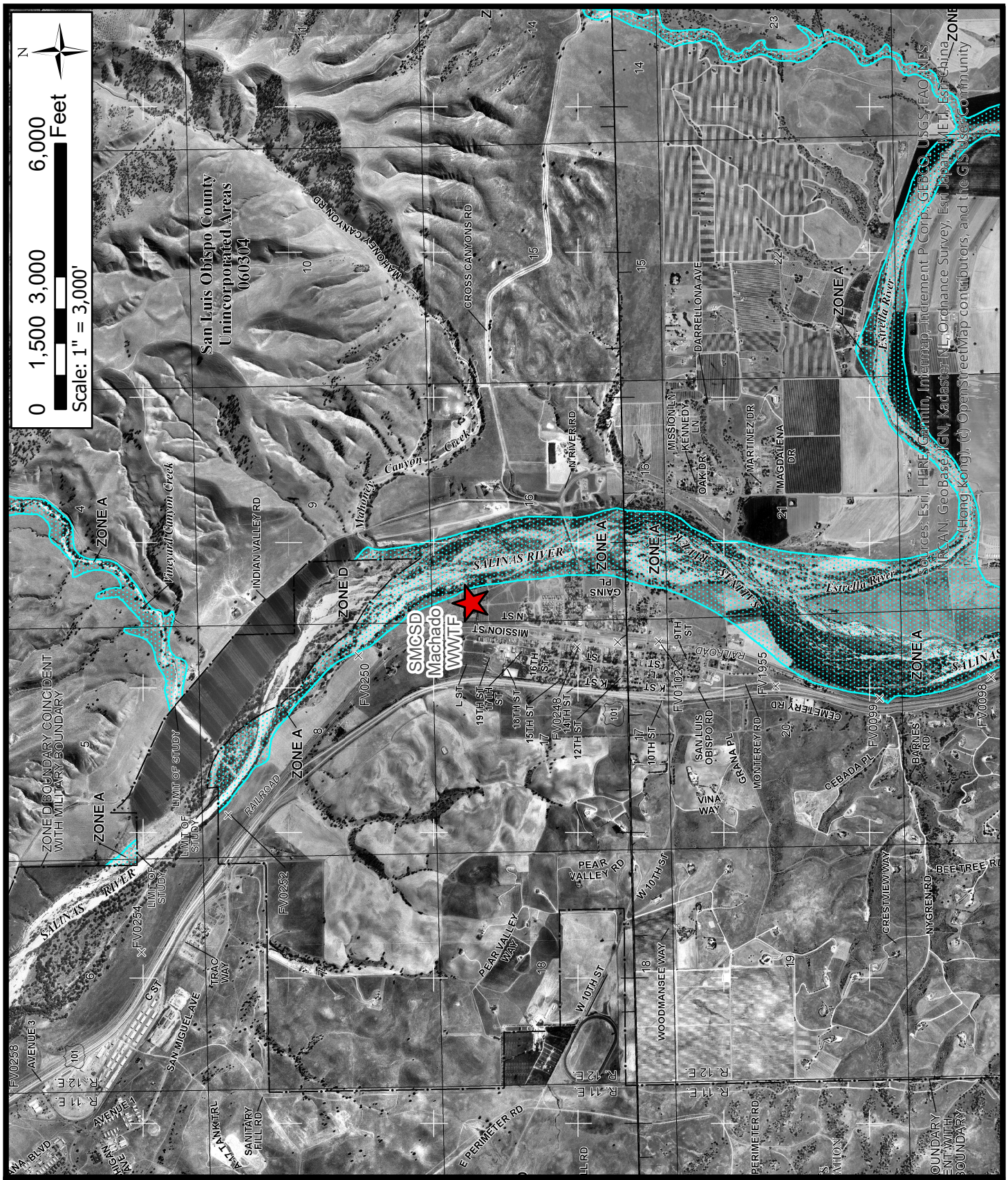


Location Map

2020.04.003 WWTP Flood Assessment

San Miguel Community Services District Figure 1

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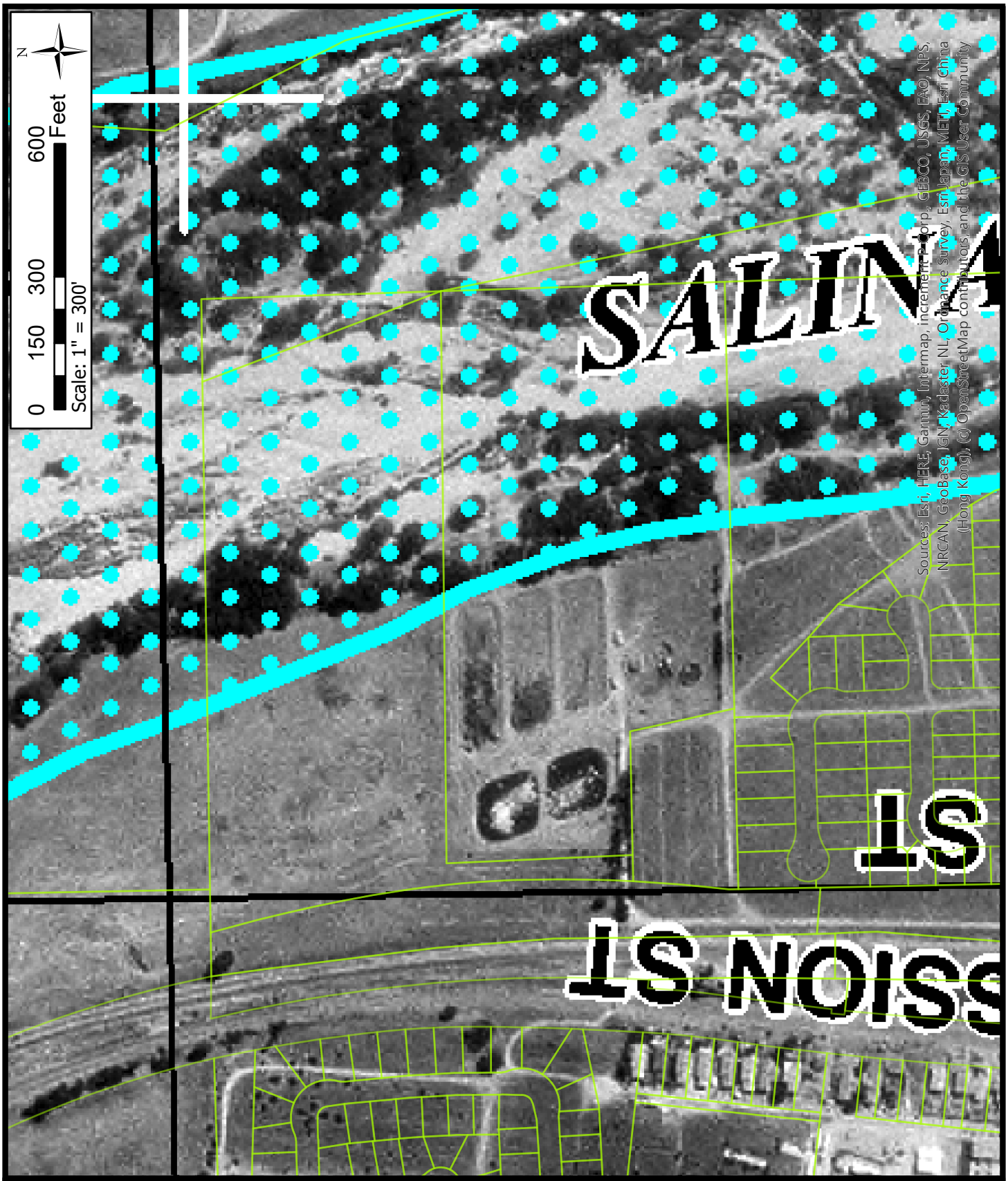


FEMA FIRM

2020.04.003 WWTP Flood Assessment

San Miguel Community Services District — Figure 2

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FEMA FIRM (Zoomed)

2020.04.003 WWTP Flood Assessment

San Miguel Community Services District — Figure 3

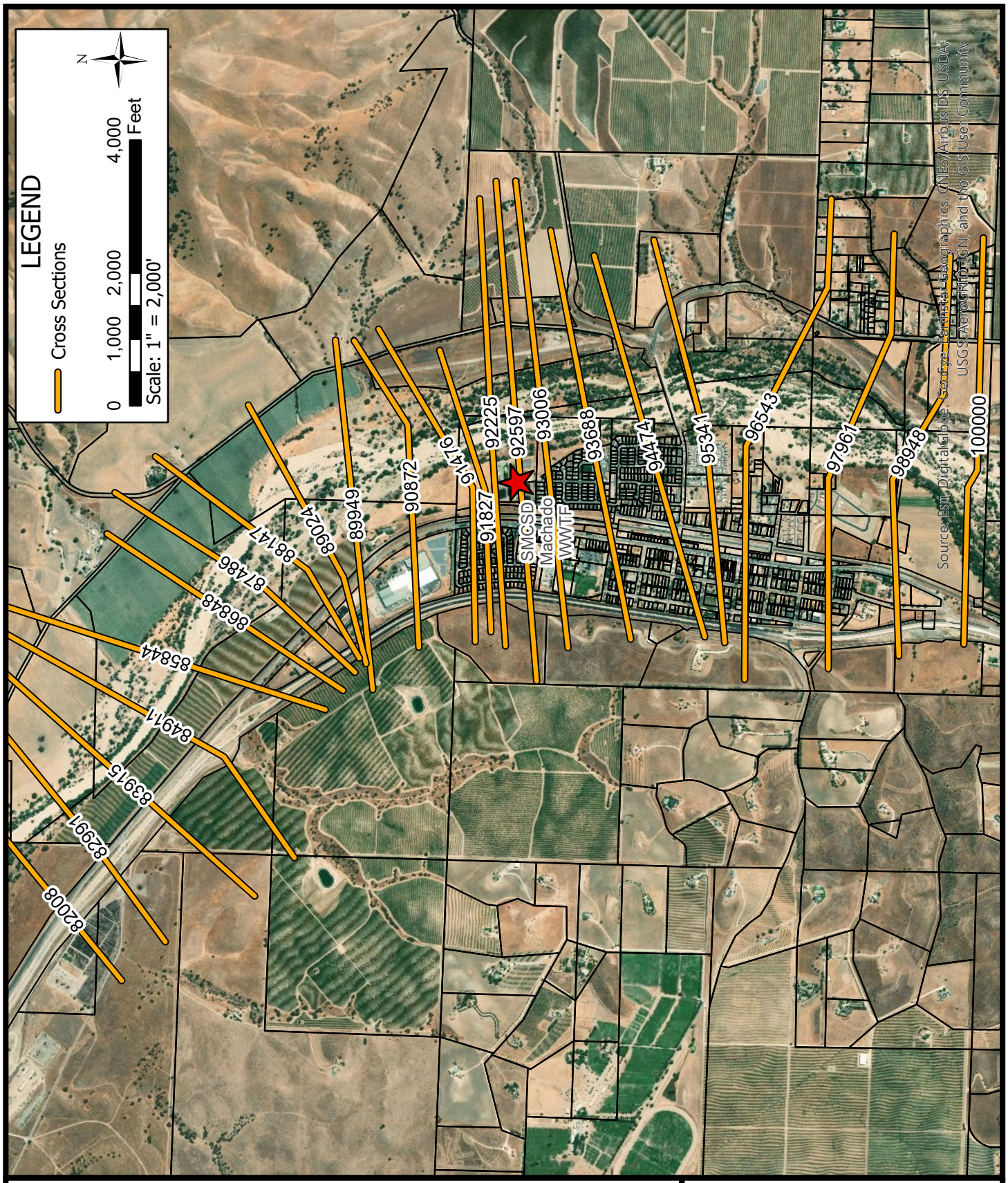
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Watershed Location Map

2020.04.003 WWTP Flood Assessment

San Miguel Community Services District Figure 4

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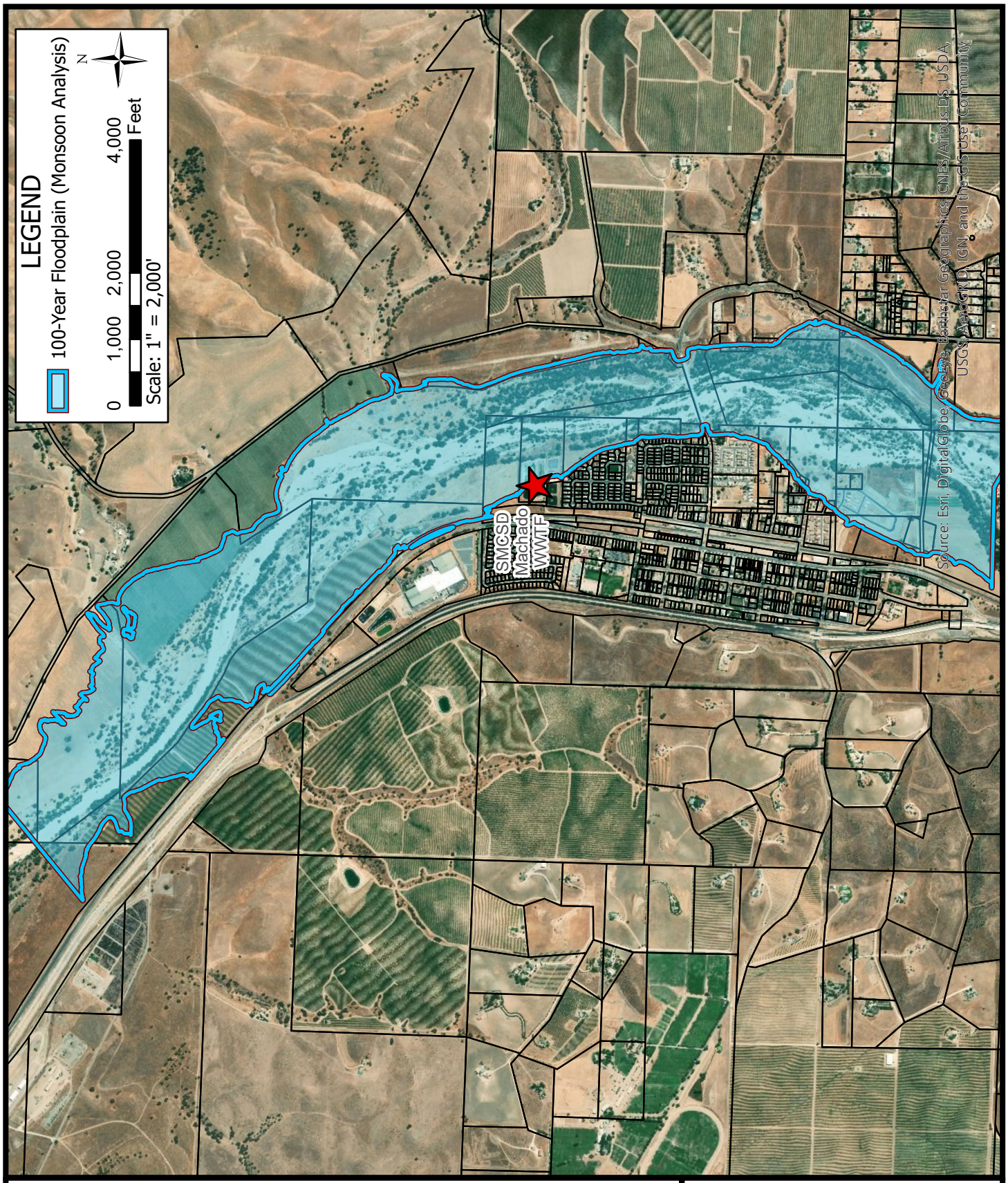


HEC-RAS Hydraulic Model Cross-Sections

2020.04.003 WWTP Flood Assessment

San Miguel Community Services District — Figure 5

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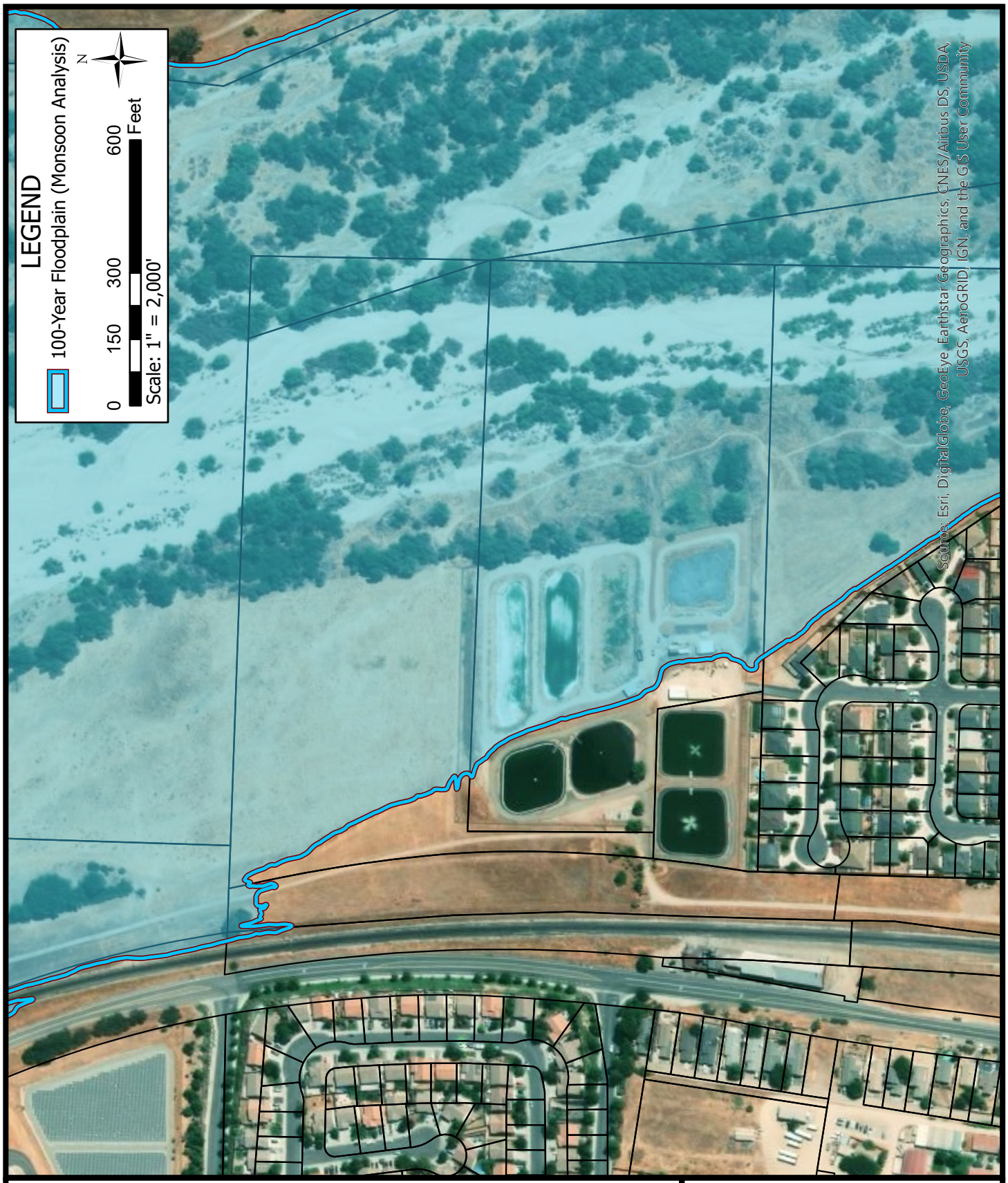


100-year Flood Inundation Map

2020.04.003 WWTP Flood Assessment

San Miguel Community Services District — Figure 6

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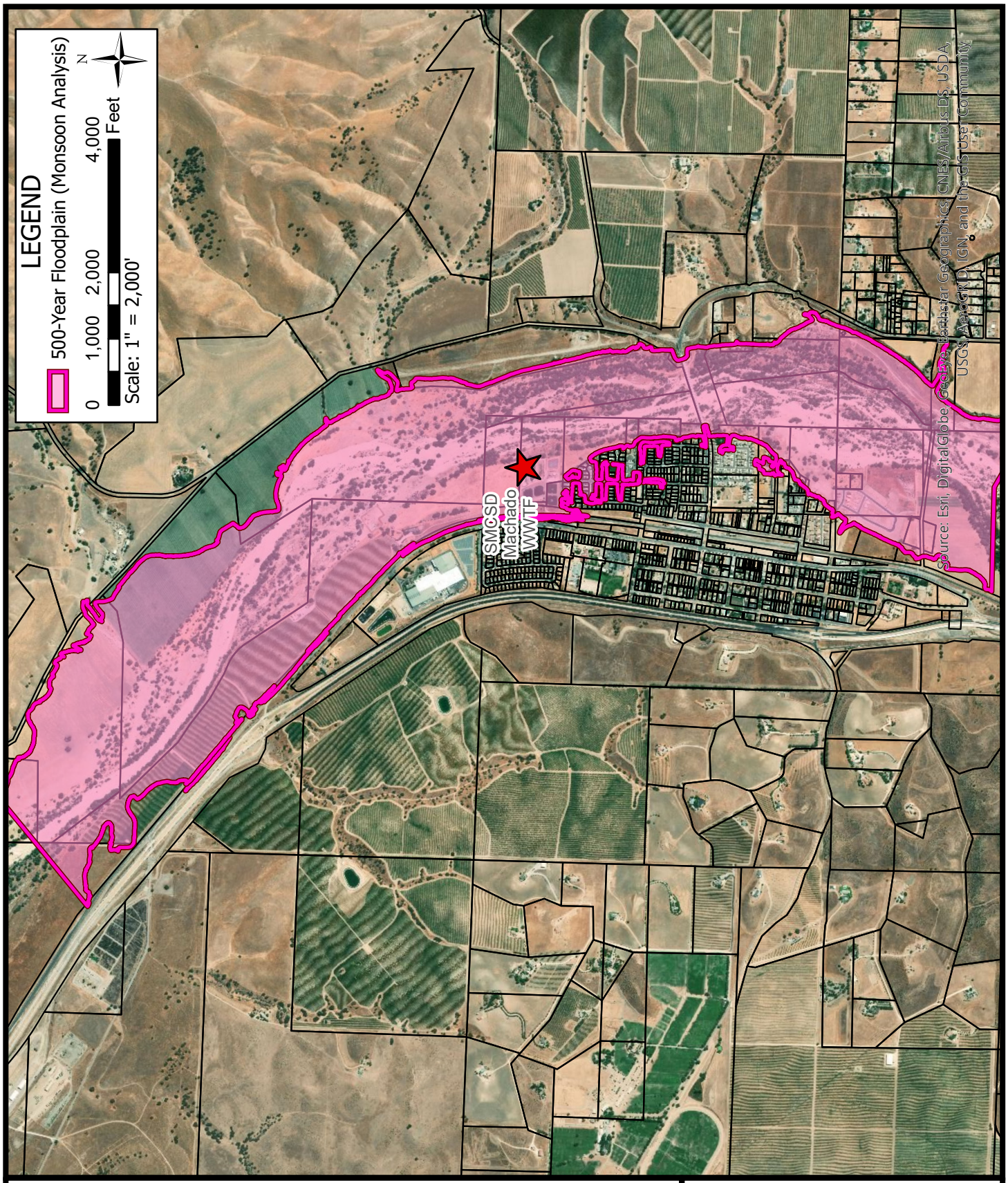


100-year Flood Inundation Map (Zoomed)

2020.04.003 WWTP Flood Assessment

San Miguel Community Services District — Figure 7

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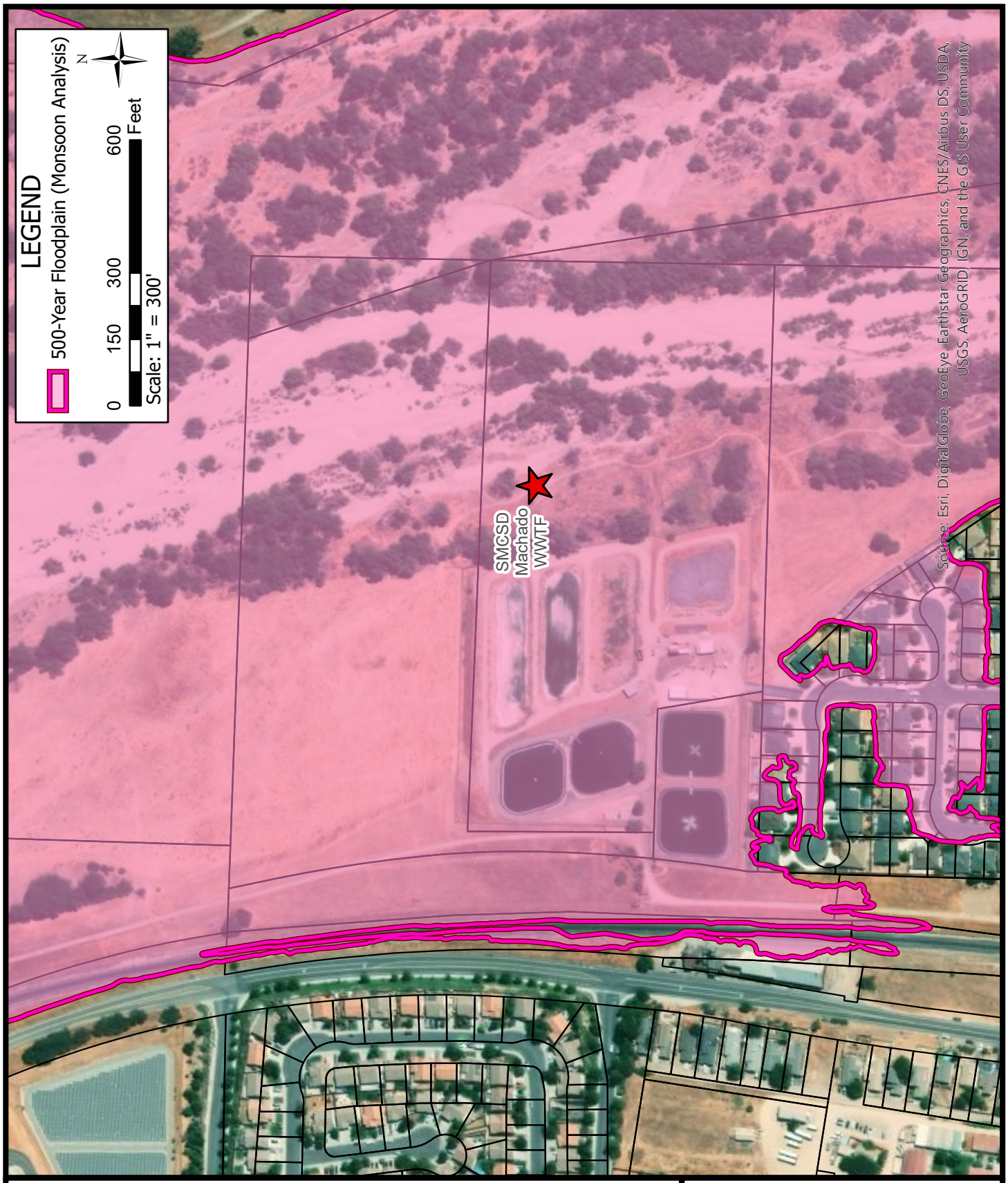


500-year Flood Inundation Map

2020.04.003 WWTP Flood Assessment

San Miguel Community Services District — Figure 8

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500-year Flood Inundation Map (Zoomed)

2020.04.003 WWTP Flood Assessment

San Miguel Community Services District — Figure 9

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Appendix D: SMCSD Potential Growth Analysis

The future development Study Area was considered during the 2020 update of the SMCSD Water and Wastewater Masterplan and includes all areas within the existing San Miguel Community Services District (SMCSD) boundary, as well as areas immediately outside the SMCSD boundary that were deemed as reasonable for future development and could be served by water and sanitary sewer utilities. These potential expansion areas outside of the current SMCSD boundary were delineated through collaboration between District staff and Monsoon staff. The potential expansion areas were separated into areas with high, medium, and low probabilities of expansion. High-probability expansion areas are expected to become developed by 2035. Medium-probability expansion areas are expected to be developed by 2050. Low-probability expansion areas are not anticipated to develop until after 2050, and the SMCSD is not planning infrastructure improvements in anticipation of this post-2050 growth.

For each expansion area, the development density was determined based on land use designations and the requirements described in the San Luis Obispo County Land Use Ordinance. Under the high-probability scenario, an additional 717 Equivalent Dwelling Units (EDUs) would be developed by 2035. Under the medium-probability scenario, 355 additional EDUs would be developed by 2050. Past 2050, under the low-probability scenario, San Miguel could experience the development of 1491 additional EDUs.

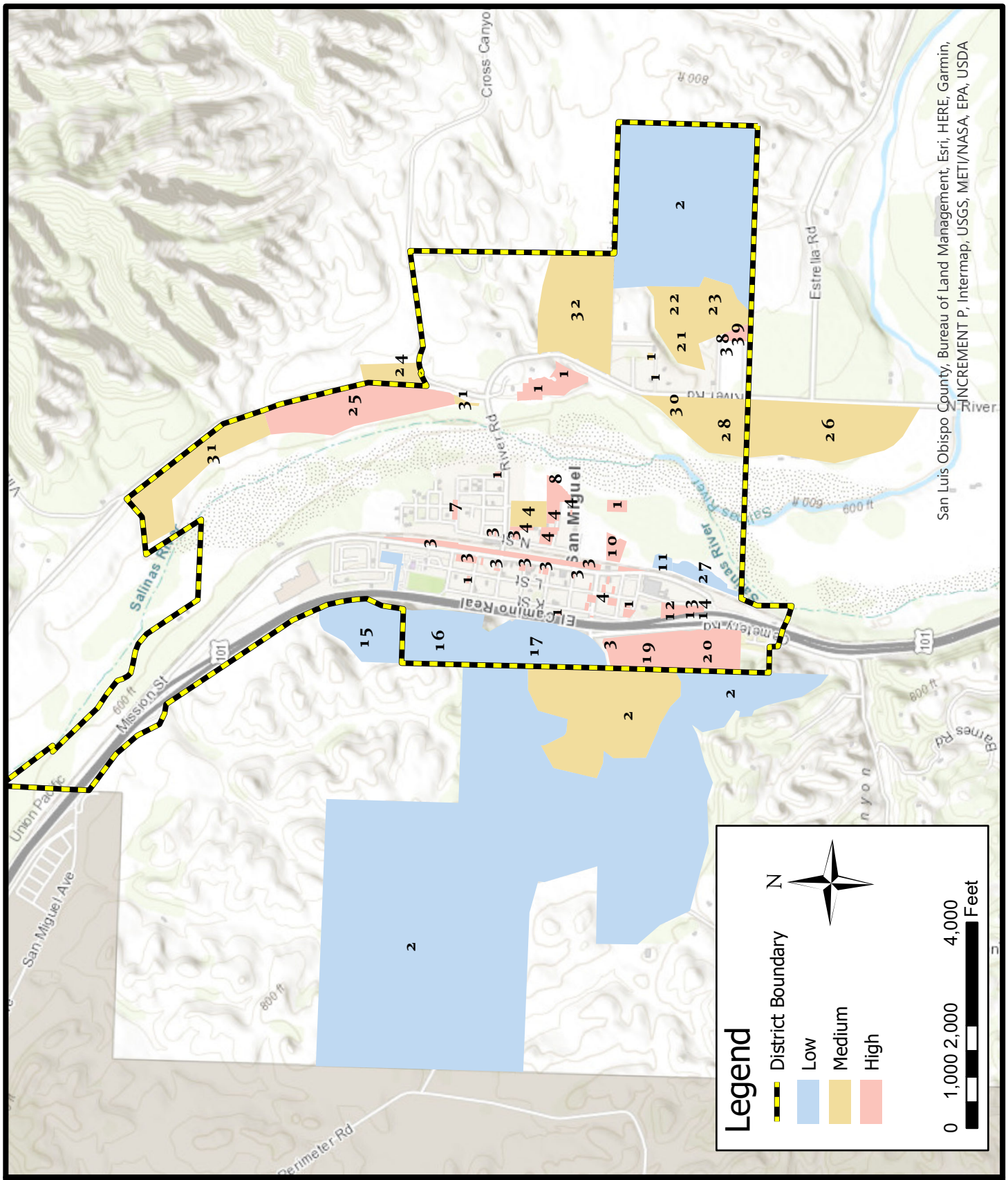
Current regulations around Accessory Dwelling Units (ADUs) are in the process of being revised and rewritten. The SMCSD acknowledges that changes to these regulations are likely to occur, but at the time that this document was written, there was insufficient information to create reasonable ADU development projections.

Development in each expansion area will require varying conditions of approval, depending on the water and sanitary sewer services required. For development to occur in the high- and medium-probability expansion areas shown, the following conditions of approval must be met:

- Downtown San Miguel, between Highway 101 and the Salinas River, north of San Luis Obispo Road: No conditions of approval. Sufficient water and sanitary sewer infrastructure already exist in this area.
- Downtown San Miguel, between Highway 101 and the Salinas River, south of San Luis Obispo Road: Extension of water and sanitary sewer lines to the new development.
- West of Highway 101: The high-probability area would require the extension of water and sanitary sewer lines to the new development, as well as a lift station and force main to connect the new sanitary sewer lines to the existing system. The medium-probability area has the same requirements as the high-probability area, with the addition of a new drinking water reservoir and booster pump station to provide adequate water pressures to the new development.
- East of Salinas River, north of River Road, west of Indian Valley Road: Extension of water and sanitary sewer lines to the new development. Installation of a new booster pump station and drinking water storage tank to provide adequate water pressures to the new development. Installation of a sanitary sewer lift station and force main to convey wastewater flows across the River Road bridge.

- East of Salinas River, south of the River Road bridge: Extension of water and sanitary sewer lines to new development. Installation of a new drinking water storage tank and booster pump station to provide adequate water pressures to the new development. Installation of a sanitary sewer lift station to connect the new development to a conveyance pipeline along River Road. Installation of a sanitary sewer lift station and force main to convey wastewater flows across the River Road bridge. With the extension of sanitary sewer lines to the new development areas, sanitary sewer lines will likely also be extended to existing parcels within the SLT area that currently have onsite wastewater treatment systems (OWTS).

A more comprehensive summary of the relevant data and assumptions that were used in establishing the high-, medium-, and low-probability expansion areas is included in the following exhibits and tables.

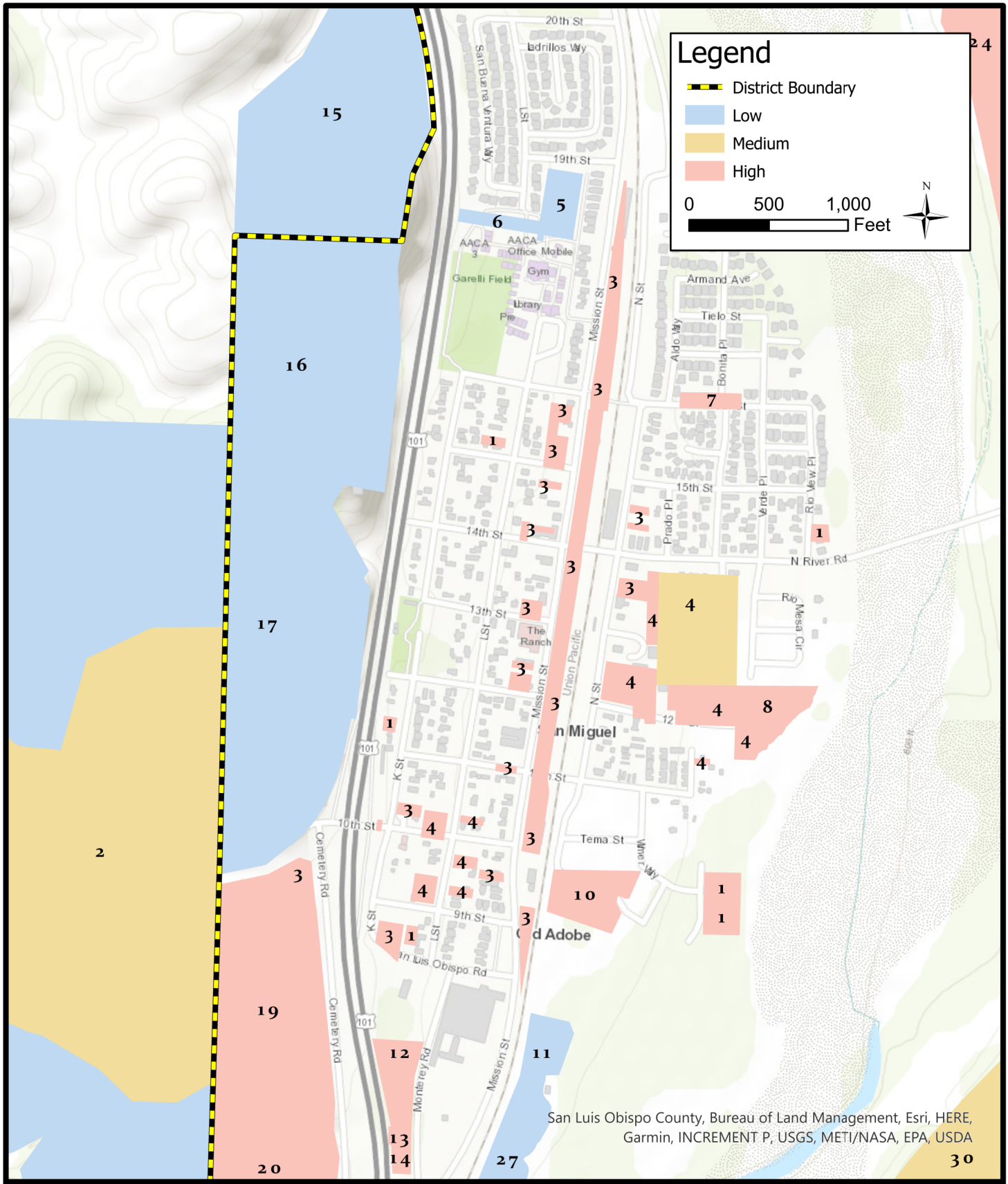


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AREAS OF POTENTIAL DEVELOPMENT

2020.03.002 SMCSD MASTER PLAN UPDATE

San Miguel Community Services District

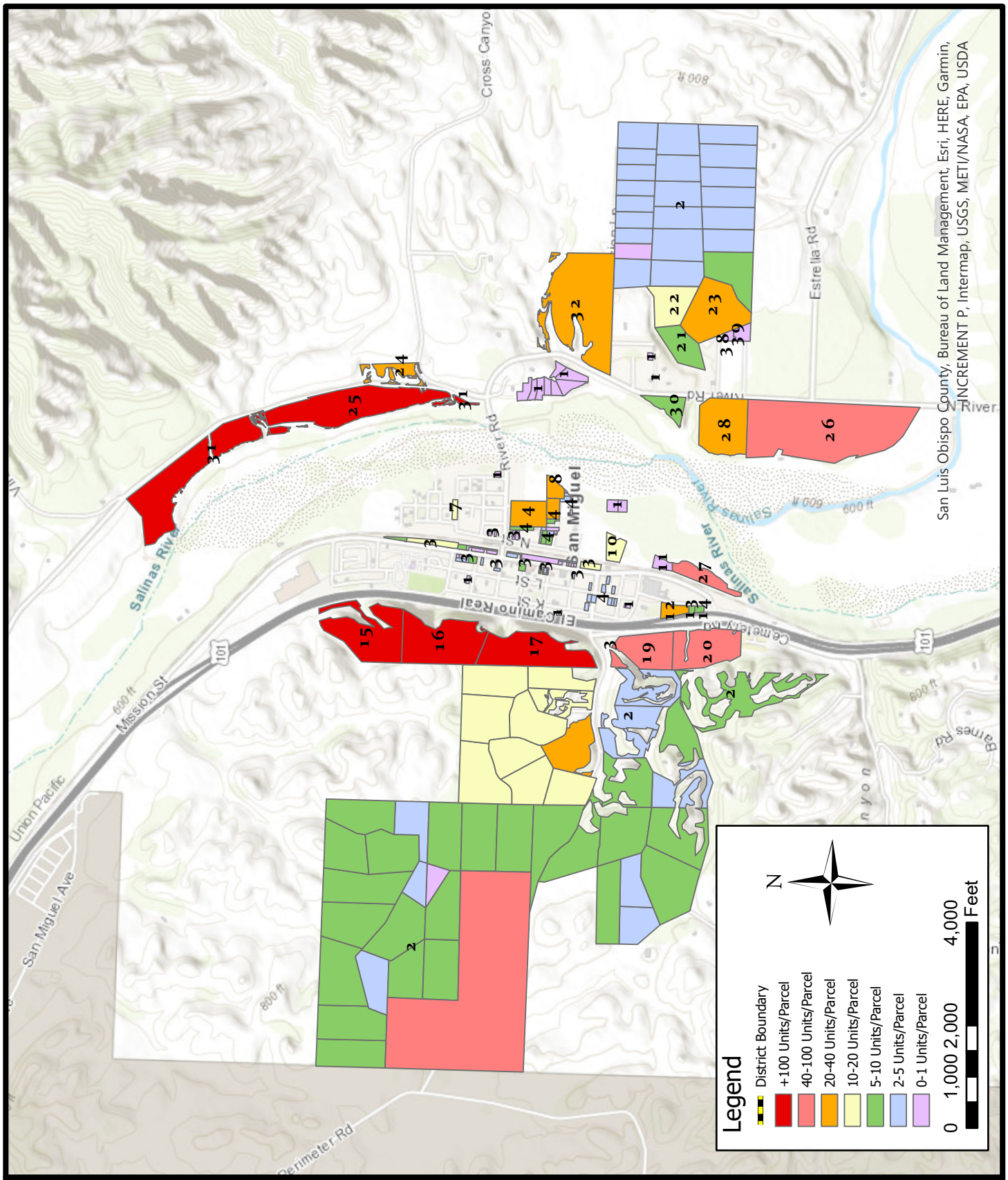


AREAS OF POTENTIAL DEVELOPMENT - DOWNTOWN

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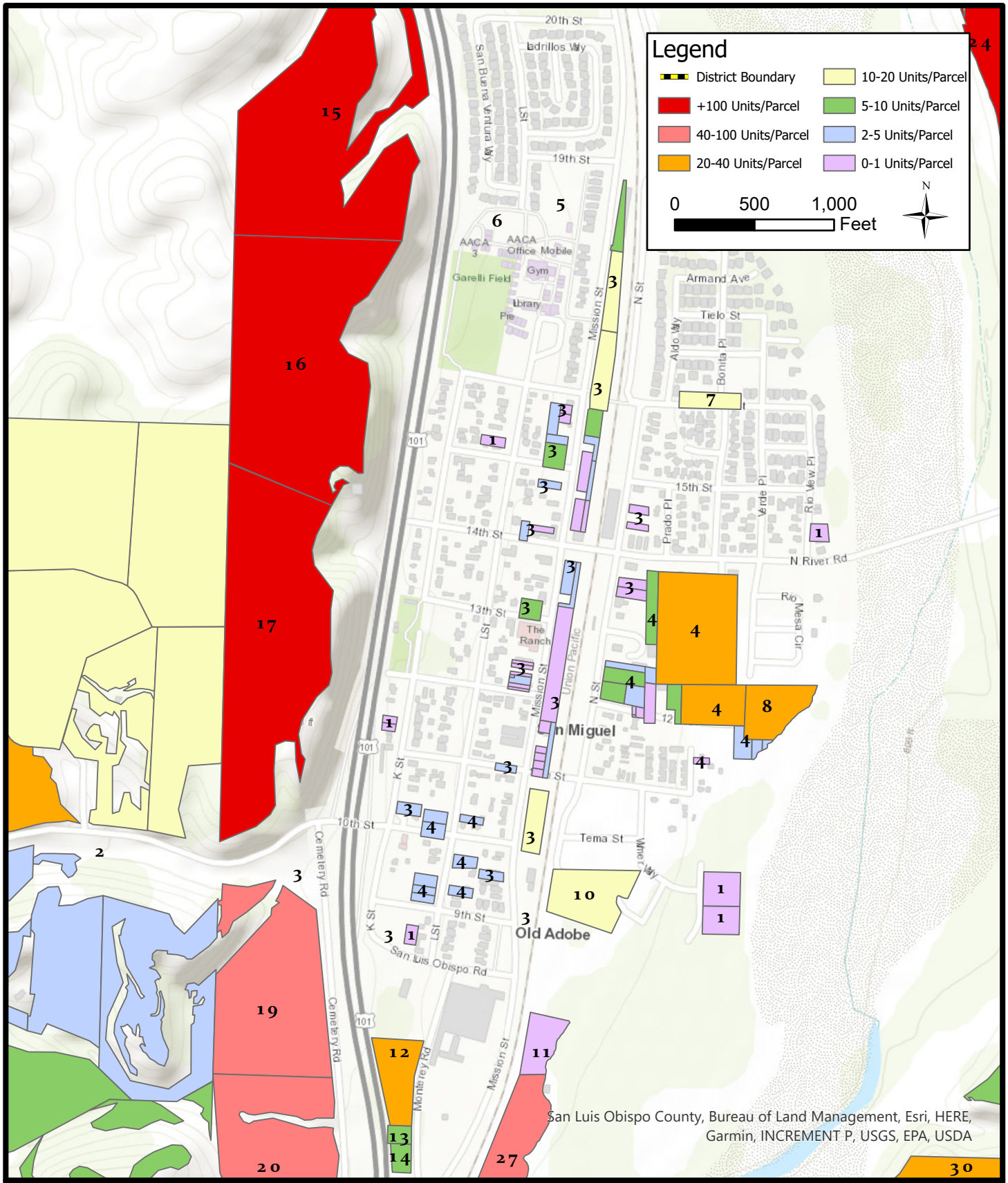


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POTENTIAL GROWTH DENSITY

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POTENTIAL GROWTH DENSITY - DOWNTOWN

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HIGH-PROBABILITY DEVELOPMENT IN SAN MIGUEL (THROUGH 2035)

Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS	Notes
7	021-151-043	0.92	RMF	Res	11.5	0	12.5 Units/Ac	Town	40.3	High	District	Sewer	
3	021-131-023	0.15	CR		1.9	0	12.5 Units/Ac	Town	6.6	High	District	Sewer	
3	021-131-016	0.12	CR		1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer	
3	021-131-022	0.3	CR		3.8	0	12.5 Units/Ac	Town	13.1	High	District	Sewer	
3	021-131-018	0.18	CR		2.3	0	12.5 Units/Ac	Town	7.9	High	District	Sewer	
1	021-122-024	0.2	RSF		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-171-009	0.17	CR		2.1	0	12.5 Units/Ac	Town	7.4	High	District	Sewer	
3	021-171-013	0.11	CR		1.4	0	12.5 Units/Ac	Town	4.8	High	District	Sewer	
3	021-171-008	0.18	CR		2.3	0	12.5 Units/Ac	Town	7.9	High	District	Sewer	
3	021-181-009	0.15	CS		1.0	0		Town	3.5	High	District	Sewer	
3	021-181-011	0.16	CS		1.0	0		Town	3.5	High	District	Sewer	
3	021-231-035	0.23	CS		1.0	0		Town	3.5	High	District	Sewer	
3	021-231-036	0.34	CS		1.0	0		Town	3.5	High	District	Sewer	
4	021-231-005	0.66	RMF		8.3	0	12.5 Units/Ac	Town	28.9	High	District	Sewer	
4	021-231-016	0.19	RMF		2.4	0	12.5 Units/Ac	Town	8.3	High	District	Sewer	
4	021-231-008	0.23	RMF		2.9	0	12.5 Units/Ac	Town	10.1	High	District	Sewer	
4	021-231-022	0.52	RMF	Same Density L/S	6.5	0	12.5 Units/Ac	Town	22.8	High	District	Sewer	
4	021-231-024	0.48	RMF		6.0	0	12.5 Units/Ac	Town	21.0	High	District	Sewer	
4	021-231-041	0.3	RMF	Same Density L/S	3.8	0	12.5 Units/Ac	Town	13.1	High	District	Sewer	
4	021-231-028	0.03	RMF		0.4	0	12.5 Units/Ac	Town	1.3	High	District	Sewer	
4	021-231-033	0.01	RMF		0.1	0	12.5 Units/Ac	Town	0.4	High	District	Sewer	
4	021-231-032	0.04	RMF		0.5	0	12.5 Units/Ac	Town	1.8	High	District	Sewer	
4	021-231-017	0.13	RMF		1.6	0	12.5 Units/Ac	Town	5.7	High	District	Sewer	
4	021-241-018	0.41	RMF		5.1	0	12.5 Units/Ac	Town	17.9	High	District	Sewer	
4	021-241-028	2.33	RMF	Same Density L/S	29.1	0	12.5 Units/Ac	Town	101.9	High	District	Sewer	
8	021-241-020	2.662828	RMF	High Density (Out of Flood), Reduced acreage	31.3	2	12.5 Units/Ac	Town	109.5	High	District	Sewer	
4	021-241-031	0.19	RMF		2.4	0	12.5 Units/Ac	Town	8.3	High	District	Sewer	
4	021-241-030	0.18	RMF		2.3	0	12.5 Units/Ac	Town	7.9	High	District	Sewer	
4	021-241-032	0.39	RMF		4.9	0	12.5 Units/Ac	Town	17.1	High	District	Sewer	
4	021-401-004	0.1	RMF		1.3	0	12.5 Units/Ac	Town	4.4	High	District	Sewer	
10	021-362-001	4.38	RSF	15 Units	15.0	0	3.42 Units/Ac	Town	52.4	High	District	Sewer	
3	021-211-012	0.42	CR		5.3	0	12.5 Units/Ac	Town	18.4	High	District	Sewer	
3	021-261-013	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-261-014	0.09	CR		1.1	0	12.5 Units/Ac	Town	3.9	High	District	Sewer	
3	021-261-016	0.09	CR		1.1	0	12.5 Units/Ac	Town	3.9	High	District	Sewer	
3	021-261-017	0.02	CR		0.3	0	12.5 Units/Ac	Town	0.9	High	District	Sewer	
3	021-261-018	0.16	CR		2.0	0	12.5 Units/Ac	Town	7.0	High	District	Sewer	
3	021-261-019	0.09	CR		1.1	0	12.5 Units/Ac	Town	3.9	High	District	Sewer	
3	021-261-020	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
1	021-271-011	0.1	RSF		1.0	0		Town	3.5	High	District	Sewer	
1	021-271-012	0.1	RSF		1.0	0		Town	3.5	High	District	Sewer	

Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS	Notes
3	021-281-014	0.17	CR		2.1	0	12.5 Units/Ac	Town	7.4	High	District	Sewer	
3	021-302-016	0.27	CR		0.0	0		Town	0.0	High	District	Sewer	
4	021-302-010	0.3	RMF		2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer	
4	021-302-008	0.38	RMF		2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer	
3	021-301-004	0.08	CR		0.0	0		Town	0.0	High	District	Sewer	
4	021-311-003	0.18	RMF		2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer	
4	021-322-013	0.28	RMF		2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer	
4	021-322-014	0.2	RMF		2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer	
4	021-322-015	0.29	RMF		2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer	
4	021-331-001	0.28	RMF		2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer	
4	021-331-034	0.19	RMF		2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer	
3	021-331-019	0.28	CR		3.5	0	12.5 Units/Ac	Town	12.3	High	District	Sewer	
3	021-323-004	0.68	CR	Com	0.0	0		Town	0.0	High	District	Sewer	
1	021-323-001	0.23	RSF		1.0	0		Town	3.5	High	District	Sewer	
12	021-371-002	1.72	REC	W/SS/Res, LS, 40 Units Planned	40.0	0	23.25 Units/Ac	Town	140.0	High	District	Sewer	
13	021-371-003	0.23	REC	W/SS/Res, LS	5.3	0	23.25 Units/Ac	Town	18.7	High	District	Sewer	
14	021-371-005	0.28	REC	W/SS/Res, LS	6.5	0	23.25 Units/Ac	Town	22.8	High	District	Sewer	
1	027-272-008	1.01	RS		1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer	
1	027-272-001	1.83	RS		1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer	
1	027-272-002	1.69	RS		1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer	
1	027-272-003	1.02	RS		1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer	
1	027-272-004	1.03	RS		1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer	
1	027-272-005	1.15	RS		1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer	
1	027-272-006	1.36	RS		1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer	
1	027-272-007	2.44	RS		1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer	
3	021-391-002	0.68	CR	Com	0.0	0		West 101	0.0	High	District	Sewer	
19	021-391-001	16.3452	CR/CS	Exist Tract 44, Assume max density & PSHH density, WAT/SS/LS/Recycl.	55.9	0	3.42 Units/Ac	West 101	195.7	High	District	Sewer	
20	021-371-001	19.95499	RSF	Exist Tract 44, Assume max density & PSHH density, WAT/SS/LS/Recycl.	68.2	0	3.42 Units/Ac	West 101	238.9	High	District	Sewer	
3	021-131-011	0.55	CR		6.9	0	12.5 Units/Ac	Terrace	24.1	High	Well	Septic	
1	021-195-002	0.3	RSF		1.0	0	1 Unit/Lot	Terrace	3.5	High	Well	Septic	
24	027-420-017	38.50119	MUC	Single/Multi, 220 Res Units, 3/4 Ac Comm, Water, SS, R/C, (Terrace P/S), Lift Station	220.0	0	4.3 Units/Ac	Terrace	770.0	High	Well	Septic	
3	021-072-002	0.5	CR	Check Elev, L/S May be Read, comm bottom, res top?	6.3	0	12.5 Units/Ac	Town	21.9	High	District	Sewer	
3	021-092-002	1.28	CR	Check Elev, L/S May be Read, comm bottom, res top?	16.0	0	12.5 Units/Ac	Town	56.0	High	District	Sewer	

Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS	Notes
3	021-112-002	1.1	CR	Check Elev, L/S May be Read, comm bottom, res top?	13.8	0	12.5 Units/Ac	Town	48.1	High	District	Sewer	
3	021-141-024	0.43	CR		5.4	0	12.5 Units/Ac	Town	18.8	High	District	Sewer	
3	021-141-021	0.2	CR		2.5	0	12.5 Units/Ac	Town	8.8	High	District	Sewer	
3	021-141-007	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-141-008	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-141-009	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-141-010	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-141-011	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-141-013	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-141-014	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-141-015	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-141-016	0.07	CR		0.9	0	12.5 Units/Ac	Town	3.1	High	District	Sewer	
3	021-141-019	0.15	CR		1.9	0	12.5 Units/Ac	Town	6.6	High	District	Sewer	
3	021-141-020	0.19	CR		2.4	0	12.5 Units/Ac	Town	8.3	High	District	Sewer	
3	021-221-001	0.36	CR		4.5	0	12.5 Units/Ac	Town	15.8	High	District	Sewer	
3	021-221-021	0.28	CR		3.5	0	12.5 Units/Ac	Town	12.3	High	District	Sewer	
3	021-221-022	0.13	CR	RES/Over Commercial	1.6	0	12.5 Units/Ac	Town	5.7	High	District	Sewer	
3	021-221-023	0.06	CR	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer	
3	021-221-024	0.13	CR	RES/Over Commercial	1.6	0	12.5 Units/Ac	Town	5.7	High	District	Sewer	
3	021-221-025	0.12	CR	RES/Over Commercial	1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer	
3	021-221-026	0.1	CR	RES/Over Commercial	1.3	0	12.5 Units/Ac	Town	4.4	High	District	Sewer	
3	021-221-027	0.08	CR	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-221-028	0.06	CR	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer	
3	021-221-029	0.06	CR	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer	
3	021-221-030	0.12	CR	RES/Over Commercial	1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer	
3	021-221-031	0.06	CR	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer	
3	021-221-032	0.12	CR	RES/Over Commercial	1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer	
3	021-221-033	0.08	CR	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-221-034	0.12	CR	RES/Over Commercial	1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer	
3	021-221-035	0.08	CR	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-221-036	0.09	CR	RES/Over Commercial	1.1	0	12.5 Units/Ac	Town	3.9	High	District	Sewer	
3	021-221-037	0.06	CR	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer	
3	021-221-038	0.06	CR	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer	
3	021-221-039	0.08	CR	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-221-040	0.08	CR	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-221-010	0.13	CR		1.6	0	12.5 Units/Ac	Town	5.7	High	District	Sewer	
3	021-221-016	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-221-015	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-221-014	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-221-013	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	

Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS	Notes
3	021-221-018	0.25	CR		3.1	0	12.5 Units/Ac	Town	10.9	High	District	Sewer	
3	021-312-001	1.08	CR	RES/Over Commercial	13.5	0	12.5 Units/Ac	Town	47.3	High	District	Sewer	
3	021-351-002	0.46	CR		0.0	0		Town	0.0	High	District	Sewer	
3	021-351-003	0.23	CR		0.0	0		Town	0.0	High	District	Sewer	
38	027-251-029	0.98	RS	Unit in Progress	1.0	0	1 Unit/Lot	Terrace	3.5	High	Well	Septic	
39	027-251-030	2.07	RS	Planned Unit	1.0	0	1 Unit/Lot	Terrace	3.5	High	Well	Septic	
1	021-361-001	0.96	RSF		1.0	1.0	1 Unit/Lot		3.5	High	District	Sewer	
1	021-361-002	1.01	RSF		1.0	1.0	1 Unit/Lot		3.5	High	District	Sewer	
		123.9842		Totals	717.0	Units			2509.6	People			

Density Units		
Com/Res:	12.5	Units/Acre
PSHA:	3.42	Units/Acre
Rural:	0.5	Units/Acre
Airport:	4.3	Units/Acre
Hearst:	23.25	Units/Acre

MEDIUM-PROBABILITY DEVELOPMENT IN SAN MIGUEL (THROUGH 2050)

Summary of Future Development Potential												
ID	APN	Size (acres)	Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
4	021-241-001	8.07	RMF	Res	23.0	27	Possible 23 unit	Town	80.5	Medium	District	Sewer
1	027-221-030	0.46	RS	New W/L, OWTS MN Size	0.0	0	1 Unit/Acre	Terrace	0.0	Medium	Well	Septic
1	027-241-045	0.16	RS	New W/L, OWTS MN Size	0.0	0	1 Unit/Acre	Terrace	0.0	Medium	Well	Septic
21	027-221-045	10.33	RS	38 Units	8.1	0	0.78 Units/Acre	Terrace	28.2	Medium	Well	Septic
22	027-221-044	11.91	RS	38 Units	9.3	0	0.78 Units/Acre	Terrace	32.5	Medium	Well	Septic
23	027-251-017	26.31	RS	38 Units	20.5	0	0.78 Units/Acre	Terrace	71.8	Medium	Well	Septic
25	027-271-024	5.353394	AG	Similar to Airport Dev, Reduced acreage	22.0	1	4.3 Units/Ac	Terrace	77.1	Medium	Well	Septic
2	027-111-043	12.14076	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	3.9	1	0.4 Unit/Acre	West 101	13.5	Medium	Well	Septic
2	027-111-042	9.119403	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	2.6	1	0.4 Unit/Acre	West 101	9.3	Medium	Well	Septic
2	027-111-041	6.950357	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	1.8	1	0.4 Unit/Acre	West 101	6.2	Medium	Well	Septic
2	027-091-008	15.82067	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	5.3	1	0.4 Unit/Acre	West 101	18.6	Medium	Well	Septic
2	027-091-010	8.642613	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	2.5	1	0.4 Unit/Acre	West 101	8.6	Medium	Well	Septic
2	027-091-009	10.58564	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	3.2	1	0.4 Unit/Acre	West 101	11.3	Medium	Well	Septic
26	027-381-006	73.48018	AG	Med/High Density, W/SS/Recy LS, Reduced Acreage	37.2	1	0.52 Units/Ac	Riverbed	130.2	Medium	District	Sewer
28	027-381-007	22.4654	AG	Med/High Density, W/SS/Recy LS, Reduced Acreage	10.7	1	0.52 Units/Ac	Riverbed	37.4	Medium	District	Sewer
30	027-381-008	5.336831	AG	Med/High Density, W/SS/Recy LS, Reduced Acreage	1.8	1	0.52 Units/Ac	Riverbed	6.2	Medium	District	Sewer
31	027-420-016	41.06936	AG/PF/RS	Requires Rezoning, Water, SS, R/C, (Terrace P/S), Lift Station Req'd, Reduced Acreage	176.6	0	4.3 Units/Ac	Riverbed	618.1	Medium	District	Sewer
32	027-271-041	52.9723	AG	Terrace PZ, SS/LS/REC, Caglioro density, Unlikely, Not whole Acregae assume 0.5 units/ acre	26.5	1	0.52 Units/Ac	Terrace	92.9	Medium	Well	Septic
		321.1769		Totals	355.0	Units			1242.5	People		

LOW-PROBABILITY DEVELOPMENT IN SAN MIGUEL (AFTER 2050)

Summary of Future Development Potential												
ID	APN	Size (acres)	Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
5	021-071-001	2.07	PF	School, Water usage/Classroom	0.0	0.0		Town	0.0	Low	District	Sewer
6	021-013-058	0.91	PF	School, Water usage/Classroom	0.0	0.0		Town	0.0	Low	District	Sewer
11	021-363-037	2.24	RSF	PSHH Density	1.0	0	1 Unit/Lot	Town	3.5	Low	District	Sewer
15	027-061-019	28.14121	AG	New Pres Zone, SS/Recyl., Lift Station	351.8	0	12.5 Units/Ac	West 101	1231.2	Low	District	Sewer
16	027-061-025	29.90229	RR	New Pres Zone, SS/Recyl., Lift Station	373.8	0	12.5 Units/Ac	West 101	1308.2	Low	District	Sewer
17	027-061-027	27.31184	RR	New Pres Zone, SS/Recyl., Lift Station	341.4	0	12.5 Units/Ac	West 101	1194.9	Low	District	Sewer
2	027-051-033	16.76	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	5.7	1	0.4 Unit/Acre	West 101	20.0	Low	Well	Septic
2	027-051-032	20.37	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	7.1	1	0.4 Unit/Acre	West 101	25.0	Low	Well	Septic
2	027-051-025	23.35	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	8.3	1	0.4 Unit/Acre	West 101	29.2	Low	Well	Septic
2	027-051-013	13.55	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	4.4	1	0.4 Unit/Acre	West 101	15.5	Low	Well	Septic
2	027-051-026	22.32	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	7.9	1	0.4 Unit/Acre	West 101	27.7	Low	Well	Septic
2	027-051-024	22.98	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	8.2	1	0.4 Unit/Acre	West 101	28.7	Low	Well	Septic
2	027-051-027	16.94	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	5.8	1	0.4 Unit/Acre	West 101	20.2	Low	Well	Septic
2	027-051-028	20.53	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	7.2	1	0.4 Unit/Acre	West 101	25.2	Low	Well	Septic
2	027-051-009	16.24	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	5.5	1	0.4 Unit/Acre	West 101	19.2	Low	Well	Septic
2	027-051-003	12.49	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	4.0	1	0.4 Unit/Acre	West 101	14.0	Low	Well	Septic
2	027-051-021	6.18	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	1.5	1	0.4 Unit/Acre	West 101	5.2	Low	Well	Septic
2	027-051-031	20.69	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	7.3	1	0.4 Unit/Acre	West 101	25.5	Low	Well	Septic
2	027-051-029	17.31	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	5.9	1	0.4 Unit/Acre	West 101	20.7	Low	Well	Septic

Summary of Future Development Potential												
ID	APN	Size (acres)	Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
2	027-061-001	152.45	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	60.0	1	0.4 Unit/Acre	West 101	209.9	Low	Well	Septic
2	027-051-015	19.16	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	6.7	1	0.4 Unit/Acre	West 101	23.3	Low	Well	Septic
2	027-051-019	15.44	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	5.2	1	0.4 Unit/Acre	West 101	18.1	Low	Well	Septic
2	027-051-022	4.92	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	1.0	1	0.4 Unit/Acre	West 101	3.4	Low	Well	Septic
2	027-051-020	18.48	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	6.4	1	0.4 Unit/Acre	West 101	22.4	Low	Well	Septic
2	027-051-011	21.13	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	7.5	1	0.4 Unit/Acre	West 101	26.1	Low	Well	Septic
2	027-051-010	19.54	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	6.8	1	0.4 Unit/Acre	West 101	23.9	Low	Well	Septic
2	027-061-018	23.54	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	8.4	1	0.4 Unit/Acre	West 101	29.5	Low	Well	Septic
2	027-061-029	17.9743	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	6.2	1	0.4 Unit/Acre	West 101	21.7	Low	Well	Septic
2	027-111-026	16.41	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	5.6	1	0.4 Unit/Acre	West 101	19.5	Low	Well	Septic
2	027-111-045	21.47	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	7.6	1	0.4 Unit/Acre	West 101	26.6	Low	Well	Septic
2	027-111-029	10.79	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	3.3	1	0.4 Unit/Acre	West 101	11.6	Low	Well	Septic
2	027-111-023	10.22	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	3.1	1	0.4 Unit/Acre	West 101	10.8	Low	Well	Septic
2	027-111-028	16.86	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	5.7	1	0.4 Unit/Acre	West 101	20.1	Low	Well	Septic
2	027-111-027	26	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	9.4	1	0.4 Unit/Acre	West 101	32.9	Low	Well	Septic
2	027-111-031	19.35582	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	6.7	1	0.4 Unit/Acre	West 101	23.6	Low	Well	Septic
2	027-111-044	12.50492	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	4.0	1	0.4 Unit/Acre	West 101	14.0	Low	Well	Septic
2	027-111-039	20.78	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	7.3	1	0.4 Unit/Acre	West 101	25.6	Low	Well	Septic

Summary of Future Development Potential												
ID	APN	Size (acres)	Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
2	027-121-013	23.35837	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	8.3	1	0.4 Unit/Acre	West 101	29.2	Low	Well	Septic
2	027-111-006	14.95006	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	5.0	1	0.4 Unit/Acre	West 101	17.4	Low	Well	Septic
2	027-091-001	12.24	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	3.9	1	0.4 Unit/Acre	West 101	13.6	Low	Well	Septic
2	027-091-006	16.85	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	5.7	1	0.4 Unit/Acre	West 101	20.1	Low	Well	Septic
2	027-081-007	13.35	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	4.3	1	0.4 Unit/Acre	West 101	15.2	Low	Well	Septic
2	027-081-003	12.95	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	4.2	1	0.4 Unit/Acre	West 101	14.6	Low	Well	Septic
2	027-081-008	18.49	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	6.4	1	0.4 Unit/Acre	West 101	22.4	Low	Well	Septic
2	027-081-006	19.6	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	6.8	1	0.4 Unit/Acre	West 101	23.9	Low	Well	Septic
2	027-081-004	16.3	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	5.5	1	0.4 Unit/Acre	West 101	19.3	Low	Well	Septic
27	021-361-008	6.425653	AG	Water/SS/REC, PSHA Density, Reduced Acreage	79.3	1	12.5 Units/Ac	Riverbed	277.6	Low	District	Sewer
2	027-221-047	8.39	AG	Low Prob, Low Density	2.4	1	0.4 Unit/Ac	Terrace	8.2	Low	Well	Septic
2	027-231-005	4.37	AG	Low Prob, Low Density	0.7	1	0.4 Unit/Ac	Terrace	2.6	Low	Well	Septic
2	027-231-003	4.65	AG	Low Prob, Low Density	0.9	1	0.4 Unit/Ac	Terrace	3.0	Low	Well	Septic
2	027-231-018	5.11	AG	Low Prob, Low Density	1.0	1	0.4 Unit/Ac	Terrace	3.7	Low	Well	Septic
2	027-231-013	4.88	AG	Low Prob, Low Density	1.0	1	0.4 Unit/Ac	Terrace	3.3	Low	Well	Septic
2	027-231-009	5.03	AG	Low Prob, Low Density	1.0	1	0.4 Unit/Ac	Terrace	3.5	Low	Well	Septic
2	027-231-011	4.73	AG	Low Prob, Low Density	0.9	1	0.4 Unit/Ac	Terrace	3.1	Low	Well	Septic
2	027-231-007	4.92	AG	Low Prob, Low Density	1.0	1	0.4 Unit/Ac	Terrace	3.4	Low	Well	Septic
2	027-231-014	7.98	AG	Low Prob, Low Density	2.2	1	0.4 Unit/Ac	Terrace	7.7	Low	Well	Septic
2	027-231-016	11.44	AG	Low Prob, Low Density	3.6	1	0.4 Unit/Ac	Terrace	12.5	Low	Well	Septic
2	027-231-020	9.99	AG	Low Prob, Low Density	3.0	1	0.4 Unit/Ac	Terrace	10.5	Low	Well	Septic
2	027-231-021	10.02	AG	Low Prob, Low Density	3.0	1	0.4 Unit/Ac	Terrace	10.5	Low	Well	Septic
2	027-231-023	10.32	AG	Low Prob, Low Density	3.1	1	0.4 Unit/Ac	Terrace	10.9	Low	Well	Septic
2	027-231-022	12.03	AG	Low Prob, Low Density	3.8	1	0.4 Unit/Ac	Terrace	13.3	Low	Well	Septic
2	027-221-046	12.54	AG	Low Prob, Low Density	4.0	1	0.4 Unit/Ac	Terrace	14.1	Low	Well	Septic
2	027-251-013	15	AG	Low Prob, Low Density	5.0	1	0.4 Unit/Ac	Terrace	17.5	Low	Well	Septic

Summary of Future Development Potential												
ID	APN	Size (acres)	Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
2	027-261-005	10.09	AG	Low Prob, Low Density	3.0	1	0.4 Unit/Ac	Terrace	10.6	Low	Well	Septic
2	027-261-004	9.84	AG	Low Prob, Low Density	2.9	1	0.4 Unit/Ac	Terrace	10.3	Low	Well	Septic
2	027-261-011	8.61	AG	Low Prob, Low Density	2.4	1	0.4 Unit/Ac	Terrace	8.6	Low	Well	Septic
2	027-261-010	10.67	AG	Low Prob, Low Density	3.3	1	0.4 Unit/Ac	Terrace	11.4	Low	Well	Septic
2	027-261-009	9.78	AG	Low Prob, Low Density	2.9	1	0.4 Unit/Ac	Terrace	10.2	Low	Well	Septic
2	027-261-008	9.74	AG	Low Prob, Low Density	2.9	1	0.4 Unit/Ac	Terrace	10.1	Low	Well	Septic
		1108.974		Totals	1491.2	Units			5219.4	People		

HIGH-PROBABILITY DEVELOPMENT IN DOWNTOWN SAN MIGUEL ONLY (THROUGH 2025)

Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Proposed Re-Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
7	021-151-043	0.92	RMF		Res	11.5	0	12.5 Units/Ac	Town	40.3	High	District	Sewer
3	021-131-023	0.15	CR	RMF		1.9	0	12.5 Units/Ac	Town	6.6	High	District	Sewer
3	021-131-016	0.12	CR	RMF		1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer
3	021-131-022	0.3	CR	RMF		3.8	0	12.5 Units/Ac	Town	13.1	High	District	Sewer
3	021-131-018	0.18	CR	RMF		2.3	0	12.5 Units/Ac	Town	7.9	High	District	Sewer
1	021-122-024	0.2	RSF	RMF		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-171-009	0.17	CR	RMF		2.1	0	12.5 Units/Ac	Town	7.4	High	District	Sewer
3	021-171-013	0.11	CR	RMF		1.4	0	12.5 Units/Ac	Town	4.8	High	District	Sewer
3	021-171-008	0.18	CR	RMF		2.3	0	12.5 Units/Ac	Town	7.9	High	District	Sewer
3	021-181-009	0.15	CS			1.0	0		Town	3.5	High	District	Sewer
3	021-181-011	0.16	CS			1.0	0		Town	3.5	High	District	Sewer
3	021-231-035	0.23	CS			1.0	0		Town	3.5	High	District	Sewer
3	021-231-036	0.34	CS			1.0	0		Town	3.5	High	District	Sewer
4	021-231-005	0.66	RMF			8.3	0	12.5 Units/Ac	Town	28.9	High	District	Sewer
4	021-241-001	8.07	RMF		Res	23.0	27	Possible 23 units	Town	80.5	High	District	Sewer
4	021-231-016	0.19	RMF			2.4	0	12.5 Units/Ac	Town	8.3	High	District	Sewer
4	021-231-008	0.23	RMF			2.9	0	12.5 Units/Ac	Town	10.1	High	District	Sewer
4	021-231-022	0.52	RMF		Same Density L/S	6.5	0	12.5 Units/Ac	Town	22.8	High	District	Sewer
4	021-231-024	0.48	RMF			6.0	0	12.5 Units/Ac	Town	21.0	High	District	Sewer
4	021-231-041	0.3	RMF		Same Density L/S	3.8	0	12.5 Units/Ac	Town	13.1	High	District	Sewer
4	021-231-028	0.03	RMF			0.4	0	12.5 Units/Ac	Town	1.3	High	District	Sewer
4	021-231-033	0.01	RMF			0.1	0	12.5 Units/Ac	Town	0.4	High	District	Sewer
4	021-231-032	0.04	RMF			0.5	0	12.5 Units/Ac	Town	1.8	High	District	Sewer
4	021-231-017	0.13	RMF			1.6	0	12.5 Units/Ac	Town	5.7	High	District	Sewer
4	021-241-018	0.41	RMF			5.1	0	12.5 Units/Ac	Town	17.9	High	District	Sewer
4	021-241-028	2.33	RMF		Same Density L/S	29.1	0	12.5 Units/Ac	Town	101.9	High	District	Sewer
8	021-241-020	2.662828	RMF		High Density (Out of Flood), Reduced acreage	31.3	2	12.5 Units/Ac	Town	109.5	High	District	Sewer
4	021-241-031	0.19	RMF			2.4	0	12.5 Units/Ac	Town	8.3	High	District	Sewer
4	021-241-030	0.18	RMF			2.3	0	12.5 Units/Ac	Town	7.9	High	District	Sewer
4	021-241-032	0.39	RMF			4.9	0	12.5 Units/Ac	Town	17.1	High	District	Sewer
4	021-401-004	0.1	RMF			1.3	0	12.5 Units/Ac	Town	4.4	High	District	Sewer
10	021-362-001	4.38	RSF	RMF	15 Units	15.0	0	3.42 Units/Ac	Town	52.4	High	District	Sewer
3	021-211-012	0.42	CR	MUC		5.3	0	12.5 Units/Ac	Town	18.4	High	District	Sewer
3	021-261-013	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-261-014	0.09	CR	MUC		1.1	0	12.5 Units/Ac	Town	3.9	High	District	Sewer
3	021-261-016	0.09	CR	MUC		1.1	0	12.5 Units/Ac	Town	3.9	High	District	Sewer
3	021-261-017	0.02	CR	MUC		0.3	0	12.5 Units/Ac	Town	0.9	High	District	Sewer
3	021-261-018	0.16	CR	MUC		2.0	0	12.5 Units/Ac	Town	7.0	High	District	Sewer
3	021-261-019	0.09	CR	MUC		1.1	0	12.5 Units/Ac	Town	3.9	High	District	Sewer
3	021-261-020	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
1	021-271-011	0.1	RSF			1.0	0		Town	3.5	High	District	Sewer
1	021-271-012	0.1	RSF			1.0	0		Town	3.5	High	District	Sewer

Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Proposed Re-Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
3	021-281-014	0.17	CR	MUC		2.1	0	12.5 Units/Ac	Town	7.4	High	District	Sewer
3	021-302-016	0.27	CR			0.0	0		Town	0.0	High	District	Sewer
4	021-302-010	0.3	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
4	021-302-008	0.38	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
3	021-301-004	0.08	CR			0.0	0		Town	0.0	High	District	Sewer
4	021-311-003	0.18	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
3	021-322-004	0.75	CR			0.0	0		Town	0.0	High	District	Sewer
4	021-322-013	0.28	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
4	021-322-014	0.2	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
4	021-322-015	0.29	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
4	021-331-001	0.28	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
4	021-331-034	0.19	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
3	021-331-019	0.28	CR	MUC		3.5	0	12.5 Units/Ac	Town	12.3	High	District	Sewer
3	021-323-004	0.68	CR		Com	0.0	0		Town	0.0	High	District	Sewer
1	021-323-001	0.23	RSF			1.0	0		Town	3.5	High	District	Sewer
12	021-371-002	1.72	REC	RMF	W/SS/Res, LS, 40 Units Planned	40.0	0	23.25 Units/Ac	Town	140.0	High	District	Sewer
13	021-371-003	0.23	REC	RMF	W/SS/Res, LS	5.3	0	23.25 Units/Ac	Town	18.7	High	District	Sewer
14	021-371-005	0.28	REC	RMF	W/SS/Res, LS	6.5	0	23.25 Units/Ac	Town	22.8	High	District	Sewer
3	021-131-011	0.55	CR			6.9	0	12.5 Units/Ac	Town	24.1	High	Well	Septic
1	021-195-002	0.3	RSF			1.0	0	1 Unit/Lot	Town	3.5	High	Well	Septic
3	021-072-002	0.5	CR	MUC	Check Elev, L/S May be Read, comm bottom, res top?	6.3	0	12.5 Units/Ac	Town	21.9	High	District	Sewer
3	021-092-002	1.28	CR	MUC	Check Elev, L/S May be Read, comm bottom, res top?	16.0	0	12.5 Units/Ac	Town	56.0	High	District	Sewer
3	021-112-002	1.1	CR	MUC	Check Elev, L/S May be Read, comm bottom, res top?	13.8	0	12.5 Units/Ac	Town	48.1	High	District	Sewer
3	021-141-024	0.43	CR	MUC		5.4	0	12.5 Units/Ac	Town	18.8	High	District	Sewer
3	021-141-021	0.2	CR	MUC		2.5	0	12.5 Units/Ac	Town	8.8	High	District	Sewer
3	021-141-007	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-008	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-009	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-010	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-011	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-013	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-014	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-015	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-016	0.07	CR	MUC		0.9	0	12.5 Units/Ac	Town	3.1	High	District	Sewer
3	021-141-019	0.15	CR	MUC		1.9	0	12.5 Units/Ac	Town	6.6	High	District	Sewer
3	021-141-020	0.19	CR	MUC		2.4	0	12.5 Units/Ac	Town	8.3	High	District	Sewer
3	021-221-001	0.36	CR	MUC		4.5	0	12.5 Units/Ac	Town	15.8	High	District	Sewer
3	021-221-021	0.28	CR	MUC		3.5	0	12.5 Units/Ac	Town	12.3	High	District	Sewer
3	021-221-022	0.13	CR	MUC	RES/Over Commercial	1.6	0	12.5 Units/Ac	Town	5.7	High	District	Sewer
3	021-221-023	0.06	CR	MUC	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer

Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Proposed Re-Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
3	021-221-024	0.13	CR	MUC	RES/Over Commercial	1.6	0	12.5 Units/Ac	Town	5.7	High	District	Sewer
3	021-221-025	0.12	CR	MUC	RES/Over Commercial	1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer
3	021-221-026	0.1	CR	MUC	RES/Over Commercial	1.3	0	12.5 Units/Ac	Town	4.4	High	District	Sewer
3	021-221-027	0.08	CR	MUC	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-028	0.06	CR	MUC	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer
3	021-221-029	0.06	CR	MUC	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer
3	021-221-030	0.12	CR	MUC	RES/Over Commercial	1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer
3	021-221-031	0.06	CR	MUC	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer
3	021-221-032	0.12	CR	MUC	RES/Over Commercial	1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer
3	021-221-033	0.08	CR	MUC	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-034	0.12	CR	MUC	RES/Over Commercial	1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer
3	021-221-035	0.08	CR	MUC	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-036	0.09	CR	MUC	RES/Over Commercial	1.1	0	12.5 Units/Ac	Town	3.9	High	District	Sewer
3	021-221-037	0.06	CR	MUC	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer
3	021-221-038	0.06	CR	MUC	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer
3	021-221-039	0.08	CR	MUC	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-040	0.08	CR	MUC	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-010	0.13	CR	MUC		1.6	0	12.5 Units/Ac	Town	5.7	High	District	Sewer
3	021-221-016	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-015	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-014	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-013	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-018	0.25	CR	MUC		3.1	0	12.5 Units/Ac	Town	10.9	High	District	Sewer
3	021-312-001	1.08	CR	MUC	RES/Over Commercial	13.5	0	12.5 Units/Ac	Town	47.3	High	District	Sewer
3	021-351-002	0.46	CR			0.0	0		Town	0.0	High	District	Sewer
3	021-351-003	0.23	CR			0.0	0		Town	0.0	High	District	Sewer
1	021-361-001	0.96	RSF			1.0	1.0	1 Unit/Lot	Riverbed	3.5	High	District	Sewer
1	021-361-002	1.01	RSF			1.0	1.0	1 Unit/Lot	Riverbed	3.5	High	District	Sewer
		42.74283			Totals	385.9	Units			1350.6	People		

Density Units	
Com/Res:	12.5 Units/Acre
PSHA:	3.42 Units/Acre
Rural:	0.5 Units/Acre
Airport:	4.3 Units/Acre
Hearst:	23.25 Units/Acre

SMCSD INFRASTRUCTURE CLASSIFICATION TABLE

Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Proposed Re-Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
5	021-071-001	2.07	PF		School, Water usage/Classroom	0.0	0		Town	0.0		District	Sewer
6	021-013-058	0.91	PF		School, Water usage/Classroom	0.0	0		Town	0.0		District	Sewer
7	021-151-043	0.92	RMF		Res	11.5	0	12.5 Units/Ac	Town	40.3	High	District	Sewer
3	021-131-023	0.15	CR	RMF		1.9	0	12.5 Units/Ac	Town	6.6	High	District	Sewer
3	021-131-016	0.12	CR	RMF		1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer
3	021-131-022	0.3	CR	RMF		3.8	0	12.5 Units/Ac	Town	13.1	High	District	Sewer
3	021-131-018	0.18	CR	RMF		2.3	0	12.5 Units/Ac	Town	7.9	High	District	Sewer
1	021-122-024	0.2	RSF	RMF		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-171-009	0.17	CR	RMF		2.1	0	12.5 Units/Ac	Town	7.4	High	District	Sewer
3	021-171-013	0.11	CR	RMF		1.4	0	12.5 Units/Ac	Town	4.8	High	District	Sewer
3	021-171-008	0.18	CR	RMF		2.3	0	12.5 Units/Ac	Town	7.9	High	District	Sewer
3	021-181-009	0.15	CS			1.0	0		Town	3.5	High	District	Sewer
3	021-181-011	0.16	CS			1.0	0		Town	3.5	High	District	Sewer
3	021-231-035	0.23	CS			1.0	0		Town	3.5	High	District	Sewer
3	021-231-036	0.34	CS			1.0	0		Town	3.5	High	District	Sewer
4	021-231-005	0.66	RMF			8.3	0	12.5 Units/Ac	Town	28.9	High	District	Sewer
4	021-241-001	8.07	RMF		Res	23.0	27	Possible 23 units	Town	80.5	High	District	Sewer
4	021-231-016	0.19	RMF			2.4	0	12.5 Units/Ac	Town	8.3	High	District	Sewer
4	021-231-008	0.23	RMF			2.9	0	12.5 Units/Ac	Town	10.1	High	District	Sewer
4	021-231-022	0.52	RMF		Same Density L/S	6.5	0	12.5 Units/Ac	Town	22.8	High	District	Sewer
4	021-231-024	0.48	RMF			6.0	0	12.5 Units/Ac	Town	21.0	High	District	Sewer
4	021-231-041	0.3	RMF		Same Density L/S	3.8	0	12.5 Units/Ac	Town	13.1	High	District	Sewer
4	021-231-028	0.03	RMF			0.4	0	12.5 Units/Ac	Town	1.3	High	District	Sewer
4	021-231-033	0.01	RMF			0.1	0	12.5 Units/Ac	Town	0.4	High	District	Sewer
4	021-231-032	0.04	RMF			0.5	0	12.5 Units/Ac	Town	1.8	High	District	Sewer
4	021-231-017	0.13	RMF			1.6	0	12.5 Units/Ac	Town	5.7	High	District	Sewer
4	021-241-018	0.41	RMF			5.1	0	12.5 Units/Ac	Town	17.9	High	District	Sewer
4	021-241-028	2.33	RMF		Same Density L/S	29.1	0	12.5 Units/Ac	Town	101.9	High	District	Sewer
8	021-241-020	2.662828	RMF		High Density (Out of Flood), Reduced acreage	31.3	2	12.5 Units/Ac	Town	109.5	High	District	Sewer
4	021-241-031	0.19	RMF			2.4	0	12.5 Units/Ac	Town	8.3	High	District	Sewer
4	021-241-030	0.18	RMF			2.3	0	12.5 Units/Ac	Town	7.9	High	District	Sewer
4	021-241-032	0.39	RMF			4.9	0	12.5 Units/Ac	Town	17.1	High	District	Sewer
4	021-401-004	0.1	RMF			1.3	0	12.5 Units/Ac	Town	4.4	High	District	Sewer
10	021-362-001	4.38	RSF	RMF	15 Units	15.0	0	3.42 Units/Ac	Town	52.4	High	District	Sewer
11	021-363-037	2.24	RSF	RMF	PSHH Density	1.0	0	1 Unit/Lot	Town	3.5	Low	District	Sewer
3	021-211-012	0.42	CR	MUC		5.3	0	12.5 Units/Ac	Town	18.4	High	District	Sewer
3	021-261-013	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-261-014	0.09	CR	MUC		1.1	0	12.5 Units/Ac	Town	3.9	High	District	Sewer
3	021-261-016	0.09	CR	MUC		1.1	0	12.5 Units/Ac	Town	3.9	High	District	Sewer

Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Proposed Re-Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
3	021-261-017	0.02	CR	MUC		0.3	0	12.5 Units/Ac	Town	0.9	High	District	Sewer
3	021-261-018	0.16	CR	MUC		2.0	0	12.5 Units/Ac	Town	7.0	High	District	Sewer
3	021-261-019	0.09	CR	MUC		1.1	0	12.5 Units/Ac	Town	3.9	High	District	Sewer
3	021-261-020	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
1	021-271-011	0.1	RSF			1.0	0		Town	3.5	High	District	Sewer
1	021-271-012	0.1	RSF			1.0	0		Town	3.5	High	District	Sewer
3	021-281-014	0.17	CR	MUC		2.1	0	12.5 Units/Ac	Town	7.4	High	District	Sewer
3	021-302-016	0.27	CR			0.0	0		Town	0.0	High	District	Sewer
4	021-302-010	0.3	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
4	021-302-008	0.38	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
3	021-301-004	0.08	CR			0.0	0		Town	0.0	High	District	Sewer
4	021-311-003	0.18	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
3	021-322-004	0.75	CR			0.0	0		Town	0.0	High	District	Sewer
4	021-322-013	0.28	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
4	021-322-014	0.2	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
4	021-322-015	0.29	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
4	021-331-001	0.28	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
4	021-331-034	0.19	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
3	021-331-019	0.28	CR	MUC		3.5	0	12.5 Units/Ac	Town	12.3	High	District	Sewer
3	021-323-004	0.68	CR		Com	0.0	0		Town	0.0	High	District	Sewer
1	021-323-001	0.23	RSF			1.0	0		Town	3.5	High	District	Sewer
12	021-371-002	1.72	REC	RMF	W/SS/Res, LS, 40 Units Planned	40.0	0	23.25 Units/Ac	Town	140.0	High	District	Sewer
13	021-371-003	0.23	REC	RMF	W/SS/Res, LS	5.3	0	23.25 Units/Ac	Town	18.7	High	District	Sewer
14	021-371-005	0.28	REC	RMF	W/SS/Res, LS	6.5	0	23.25 Units/Ac	Town	22.8	High	District	Sewer
1	027-272-008	1.01	RS			1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer
1	027-272-001	1.83	RS			1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer
1	027-272-002	1.69	RS			1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer
1	027-272-003	1.02	RS			1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer
1	027-272-004	1.03	RS			1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer
1	027-272-005	1.15	RS			1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer
1	027-272-006	1.36	RS			1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer
1	027-272-007	2.44	RS			1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer
15	027-061-019	28.14121	AG	RMF	New Pres Zone, SS/Recyl., Lift Station	351.8	0	12.5 Units/Ac	West 101	1231.2	Low	District	Sewer
16	027-061-025	29.90229	RR	RMF	New Pres Zone, SS/Recyl., Lift Station	373.8	0	12.5 Units/Ac	West 101	1308.2	Low	District	Sewer
17	027-061-027	27.31184	RR	RMF	New Pres Zone, SS/Recyl., Lift Station	341.4	0	12.5 Units/Ac	West 101	1194.9	Low	District	Sewer
3	021-391-002	0.68	CR		Com	0.0	0		West 101	0.0	High	District	Sewer

Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Proposed Re-Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
19	021-391-001	16.3452	CR/CS	RMF	Exist Tract 44, Assume max density & PSHH density, WAT/SS/LS/Recycl.	55.9	0	3.42 Units/Ac	West 101	195.7	High	District	Sewer
20	021-371-001	19.95499	RSF	RMF	Exist Tract 44, Assume max density & PSHH density, WAT/SS/LS/Recycl.	68.2	0	3.42 Units/Ac	West 101	238.9	High	District	Sewer
1	027-221-030	0.46	RS		New W/L, OWTS MN Size	0.0	0	1 Unit/Acre	Terrace	0.0	Medium	Well	Septic
1	027-241-045	0.16	RS		New W/L, OWTS MN Size	0.0	0	1 Unit/Acre	Terrace	0.0	Medium	Well	Septic
21	027-221-045	10.33	RS	RMF	38 Units	8.1	0	0.78 Units/Acre	Terrace	28.2	Medium	Well	Septic
22	027-221-044	11.91	RS	RMF	38 Units	9.3	0	0.78 Units/Acre	Terrace	32.5	Medium	Well	Septic
23	027-251-017	26.31	RS	RMF	38 Units	20.5	0	0.78 Units/Acre	Terrace	71.8	Medium	Well	Septic
3	021-131-011	0.55	CR			6.9	0	12.5 Units/Ac	Terrace	24.1	High	Well	Septic
1	021-195-002	0.3	RSF			1.0	0	1 Unit/Lot	Terrace	3.5	High	Well	Septic
24	027-420-017	38.50119	MUC	RMF	Single/Multi, 220 Res Units, 3/4 Ac Comm, Water, SS, R/C, (Terrace P/S), Lift Station	220.0	0	4.3 Units/Ac	Terrace	770.0	High	Well	Septic
25	027-271-024	5.353394	AG	RMF	Similar to Airport Dev, Reduced acreage	22.0	1	4.3 Units/Ac	Terrace	77.1	Medium	Well	Septic
3	021-072-002	0.5	CR	MUC	Check Elev, L/S May be Read, comm bottom, res top?	6.3	0	12.5 Units/Ac	Town	21.9	High	District	Sewer
3	021-092-002	1.28	CR	MUC	Check Elev, L/S May be Read, comm bottom, res top?	16.0	0	12.5 Units/Ac	Town	56.0	High	District	Sewer
3	021-112-002	1.1	CR	MUC	Check Elev, L/S May be Read, comm bottom, res top?	13.8	0	12.5 Units/Ac	Town	48.1	High	District	Sewer
3	021-141-024	0.43	CR	MUC		5.4	0	12.5 Units/Ac	Town	18.8	High	District	Sewer
3	021-141-021	0.2	CR	MUC		2.5	0	12.5 Units/Ac	Town	8.8	High	District	Sewer
3	021-141-007	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-008	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-009	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-010	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-011	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-013	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-014	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-015	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-016	0.07	CR	MUC		0.9	0	12.5 Units/Ac	Town	3.1	High	District	Sewer
3	021-141-019	0.15	CR	MUC		1.9	0	12.5 Units/Ac	Town	6.6	High	District	Sewer
3	021-141-020	0.19	CR	MUC		2.4	0	12.5 Units/Ac	Town	8.3	High	District	Sewer
3	021-221-001	0.36	CR	MUC		4.5	0	12.5 Units/Ac	Town	15.8	High	District	Sewer
3	021-221-021	0.28	CR	MUC		3.5	0	12.5 Units/Ac	Town	12.3	High	District	Sewer
3	021-221-022	0.13	CR	MUC	RES/Over Commercial	1.6	0	12.5 Units/Ac	Town	5.7	High	District	Sewer

Summary of Future Development Potential														
ID	APN	Size (acres)	Zoning	Proposed Re-Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
3	021-221-023	0.06	CR	MUC	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer
3	021-221-024	0.13	CR	MUC	RES/Over Commercial	1.6	0	12.5 Units/Ac	Town	5.7	High	District	Sewer
3	021-221-025	0.12	CR	MUC	RES/Over Commercial	1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer
3	021-221-026	0.1	CR	MUC	RES/Over Commercial	1.3	0	12.5 Units/Ac	Town	4.4	High	District	Sewer
3	021-221-027	0.08	CR	MUC	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-028	0.06	CR	MUC	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer
3	021-221-029	0.06	CR	MUC	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer
3	021-221-030	0.12	CR	MUC	RES/Over Commercial	1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer
3	021-221-031	0.06	CR	MUC	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer
3	021-221-032	0.12	CR	MUC	RES/Over Commercial	1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer
3	021-221-033	0.08	CR	MUC	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-034	0.12	CR	MUC	RES/Over Commercial	1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer
3	021-221-035	0.08	CR	MUC	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-036	0.09	CR	MUC	RES/Over Commercial	1.1	0	12.5 Units/Ac	Town	3.9	High	District	Sewer
3	021-221-037	0.06	CR	MUC	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer
3	021-221-038	0.06	CR	MUC	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer
3	021-221-039	0.08	CR	MUC	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-040	0.08	CR	MUC	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-010	0.13	CR	MUC		1.6	0	12.5 Units/Ac	Town	5.7	High	District	Sewer
3	021-221-016	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-015	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-014	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-013	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-018	0.25	CR	MUC		3.1	0	12.5 Units/Ac	Town	10.9	High	District	Sewer
3	021-312-001	1.08	CR	MUC	RES/Over Commercial	13.5	0	12.5 Units/Ac	Town	47.3	High	District	Sewer
3	021-351-002	0.46	CR			0.0	0		Town	0.0	High	District	Sewer
3	021-351-003	0.23	CR			0.0	0		Town	0.0	High	District	Sewer
2	027-051-033	16.76	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	5.7	1	0.4 Unit/Acre	West 101	20.0	Low	Well	Septic
2	027-051-032	20.37	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	7.1	1	0.4 Unit/Acre	West 101	25.0	Low	Well	Septic
2	027-051-025	23.35	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	8.3	1	0.4 Unit/Acre	West 101	29.2	Low	Well	Septic
2	027-051-013	13.55	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	4.4	1	0.4 Unit/Acre	West 101	15.5	Low	Well	Septic
2	027-051-026	22.32	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	7.9	1	0.4 Unit/Acre	West 101	27.7	Low	Well	Septic
2	027-051-024	22.98	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	8.2	1	0.4 Unit/Acre	West 101	28.7	Low	Well	Septic

Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Proposed Re-Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
2	027-051-027	16.94	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	5.8	1	0.4 Unit/Acre	West 101	20.2	Low	Well	Septic
2	027-051-028	20.53	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	7.2	1	0.4 Unit/Acre	West 101	25.2	Low	Well	Septic
2	027-051-009	16.24	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	5.5	1	0.4 Unit/Acre	West 101	19.2	Low	Well	Septic
2	027-051-003	12.49	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	4.0	1	0.4 Unit/Acre	West 101	14.0	Low	Well	Septic
2	027-051-021	6.18	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	1.5	1	0.4 Unit/Acre	West 101	5.2	Low	Well	Septic
2	027-051-031	20.69	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	7.3	1	0.4 Unit/Acre	West 101	25.5	Low	Well	Septic
2	027-051-029	17.31	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	5.9	1	0.4 Unit/Acre	West 101	20.7	Low	Well	Septic
2	027-061-001	152.45	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	60.0	1	0.4 Unit/Acre	West 101	209.9	Low	Well	Septic
2	027-051-015	19.16	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	6.7	1	0.4 Unit/Acre	West 101	23.3	Low	Well	Septic
2	027-051-019	15.44	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	5.2	1	0.4 Unit/Acre	West 101	18.1	Low	Well	Septic
2	027-051-022	4.92	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	1.0	1	0.4 Unit/Acre	West 101	3.4	Low	Well	Septic
2	027-051-020	18.48	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	6.4	1	0.4 Unit/Acre	West 101	22.4	Low	Well	Septic
2	027-051-011	21.13	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	7.5	1	0.4 Unit/Acre	West 101	26.1	Low	Well	Septic
2	027-051-010	19.54	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	6.8	1	0.4 Unit/Acre	West 101	23.9	Low	Well	Septic
2	027-061-018	23.54	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	8.4	1	0.4 Unit/Acre	West 101	29.5	Low	Well	Septic
2	027-061-029	17.9743	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	6.2	1	0.4 Unit/Acre	West 101	21.7	Low	Well	Septic
2	027-111-026	16.41	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	5.6	1	0.4 Unit/Acre	West 101	19.5	Low	Well	Septic
2	027-111-045	21.47	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	7.6	1	0.4 Unit/Acre	West 101	26.6	Low	Well	Septic
2	027-111-029	10.79	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	3.3	1	0.4 Unit/Acre	West 101	11.6	Low	Well	Septic
2	027-111-023	10.22	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	3.1	1	0.4 Unit/Acre	West 101	10.8	Low	Well	Septic

Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Proposed Re-Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
2	027-111-028	16.86	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	5.7	1	0.4 Unit/Acre	West 101	20.1	Low	Well	Septic
2	027-111-027	26	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	9.4	1	0.4 Unit/Acre	West 101	32.9	Low	Well	Septic
2	027-111-031	19.35582	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	6.7	1	0.4 Unit/Acre	West 101	23.6	Low	Well	Septic
2	027-111-044	12.50492	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	4.0	1	0.4 Unit/Acre	West 101	14.0	Low	Well	Septic
2	027-111-039	20.78	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	7.3	1	0.4 Unit/Acre	West 101	25.6	Low	Well	Septic
2	027-121-013	23.35837	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	8.3	1	0.4 Unit/Acre	West 101	29.2	Low	Well	Septic
2	027-111-043	12.14076	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	3.9	1	0.4 Unit/Acre	West 101	13.5	Medium	Well	Septic
2	027-111-042	9.119403	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	2.6	1	0.4 Unit/Acre	West 101	9.3	Medium	Well	Septic
2	027-111-041	6.950357	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	1.8	1	0.4 Unit/Acre	West 101	6.2	Medium	Well	Septic
2	027-111-006	14.95006	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	5.0	1	0.4 Unit/Acre	West 101	17.4	Low	Well	Septic
2	027-091-001	12.24	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	3.9	1	0.4 Unit/Acre	West 101	13.6	Low	Well	Septic
2	027-091-008	15.82067	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	5.3	1	0.4 Unit/Acre	West 101	18.6	Medium	Well	Septic
2	027-091-010	8.642613	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	2.5	1	0.4 Unit/Acre	West 101	8.6	Medium	Well	Septic
2	027-091-009	10.58564	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	3.2	1	0.4 Unit/Acre	West 101	11.3	Medium	Well	Septic
2	027-091-006	16.85	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	5.7	1	0.4 Unit/Acre	West 101	20.1	Low	Well	Septic
2	027-081-007	13.35	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	4.3	1	0.4 Unit/Acre	West 101	15.2	Low	Well	Septic
2	027-081-003	12.95	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	4.2	1	0.4 Unit/Acre	West 101	14.6	Low	Well	Septic
2	027-081-008	18.49	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	6.4	1	0.4 Unit/Acre	West 101	22.4	Low	Well	Septic
2	027-081-006	19.6	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	6.8	1	0.4 Unit/Acre	West 101	23.9	Low	Well	Septic
2	027-081-004	16.3	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	5.5	1	0.4 Unit/Acre	West 101	19.3	Low	Well	Septic

Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Proposed Re-Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
26	027-381-006	73.48018	AG	RMF	Med/High Density, W/SS/Recy LS, Reduced Acreage	37.2	1	0.52 Units/Ac	Riverbed	130.2	Medium	District	Sewer
27	021-361-008	6.425653	AG	RMF	Water/SS/REC, PSHA Density, Reduced Acreage	79.3	1	12.5 Units/Ac	Riverbed	277.6	Low	District	Sewer
28	027-381-007	22.4654	AG	RMF	Med/High Density, W/SS/Recy LS, Reduced Acreage	10.7	1	0.52 Units/Ac	Riverbed	37.4	Medium	District	Sewer
30	027-381-008	5.336831	AG	RMF	Med/High Density, W/SS/Recy LS, Reduced Acreage	1.8	1	0.52 Units/Ac	Riverbed	6.2	Medium	District	Sewer
31	027-420-016	41.06936	AG/PF/RS	RMF	Requires Rezoning, Water, SS, R/C, (Terrace P/S), Lift Station Req'd, Reduced Acreage	176.6	0	4.3 Units/Ac	Riverbed	618.1	Medium	District	Sewer
32	027-271-041	52.9723	AG	RMF	Terrace PZ, SS/LS/REC, Caglioro density, Unlikely, Not whole Acregae assume 0.5 units/ acre	26.5	1	0.52 Units/Ac	Terrace	92.9	Medium	Well	Septic
2	027-221-047	8.39	AG		Low Prob, Low Density	2.4	1	0.4 Unit/Ac	Terrace	8.2	Low	Well	Septic
2	027-231-005	4.37	AG		Low Prob, Low Density	0.7	1	0.4 Unit/Ac	Terrace	2.6	Low	Well	Septic
2	027-231-003	4.65	AG		Low Prob, Low Density	0.9	1	0.4 Unit/Ac	Terrace	3.0	Low	Well	Septic
2	027-231-018	5.11	AG		Low Prob, Low Density	1.0	1	0.4 Unit/Ac	Terrace	3.7	Low	Well	Septic
2	027-231-013	4.88	AG		Low Prob, Low Density	1.0	1	0.4 Unit/Ac	Terrace	3.3	Low	Well	Septic
2	027-231-009	5.03	AG		Low Prob, Low Density	1.0	1	0.4 Unit/Ac	Terrace	3.5	Low	Well	Septic
2	027-231-011	4.73	AG		Low Prob, Low Density	0.9	1	0.4 Unit/Ac	Terrace	3.1	Low	Well	Septic
2	027-231-007	4.92	AG		Low Prob, Low Density	1.0	1	0.4 Unit/Ac	Terrace	3.4	Low	Well	Septic
2	027-231-014	7.98	AG		Low Prob, Low Density	2.2	1	0.4 Unit/Ac	Terrace	7.7	Low	Well	Septic
2	027-231-016	11.44	AG		Low Prob, Low Density	3.6	1	0.4 Unit/Ac	Terrace	12.5	Low	Well	Septic
2	027-231-020	9.99	AG		Low Prob, Low Density	3.0	1	0.4 Unit/Ac	Terrace	10.5	Low	Well	Septic
2	027-231-021	10.02	AG		Low Prob, Low Density	3.0	1	0.4 Unit/Ac	Terrace	10.5	Low	Well	Septic
2	027-231-023	10.32	AG		Low Prob, Low Density	3.1	1	0.4 Unit/Ac	Terrace	10.9	Low	Well	Septic
2	027-231-022	12.03	AG		Low Prob, Low Density	3.8	1	0.4 Unit/Ac	Terrace	13.3	Low	Well	Septic
2	027-221-046	12.54	AG		Low Prob, Low Density	4.0	1	0.4 Unit/Ac	Terrace	14.1	Low	Well	Septic
38	027-251-029	0.98	RS		Unit in Progress	1.0	0	1 Unit/Lot	Terrace	3.5	High	Well	Septic
39	027-251-030	2.07	RS		Planned Unit	1.0	0	1 Unit/Lot	Terrace	3.5	High	Well	Septic
2	027-251-013	15	AG		Low Prob, Low Density	5.0	1	0.4 Unit/Ac	Terrace	17.5	Low	Well	Septic
2	027-261-005	10.09	AG		Low Prob, Low Density	3.0	1	0.4 Unit/Ac	Terrace	10.6	Low	Well	Septic
2	027-261-004	9.84	AG		Low Prob, Low Density	2.9	1	0.4 Unit/Ac	Terrace	10.3	Low	Well	Septic
2	027-261-011	8.61	AG		Low Prob, Low Density	2.4	1	0.4 Unit/Ac	Terrace	8.6	Low	Well	Septic
2	027-261-010	10.67	AG		Low Prob, Low Density	3.3	1	0.4 Unit/Ac	Terrace	11.4	Low	Well	Septic
2	027-261-009	9.78	AG		Low Prob, Low Density	2.9	1	0.4 Unit/Ac	Terrace	10.2	Low	Well	Septic
2	027-261-008	9.74	AG		Low Prob, Low Density	2.9	1	0.4 Unit/Ac	Terrace	10.1	Low	Well	Septic
1	021-361-001	0.96	RSF			1.0	1.0	1 Unit/Lot		3.5	High	District	Sewer
1	021-361-002	1.01	RSF			1.0	1.0	1 Unit/Lot		3.5	High	District	Sewer

Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Proposed Re-Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
		1557.866			Totals	2563.3	Units			8971.4	People		

Appendix E: WWTP Effluent Wastewater Sampling

To evaluate effluent loading and quality from the existing WWTP, a review was performed of available historic quarterly data collected by SMCSD, from the WWTP from 2008 to 2018. **The data confirms that the existing WWTP effluent has consistently been out of compliance with TDS, sodium and chloride levels exceeding permit limits.** These results align with the findings of the California Water Boards, Central Coast Regional Water Quality Control Board, as indicated in their letter dated June 18, 2019 (Appendix A). A brief summary of the results of this analysis, by effluent constituent, is presented below:

pH

The pH level in the effluent has steadily decreased from about 7.8 to 7.2 since 2013. The existing permit requires that the pH remain between 6.5 and 8.4.

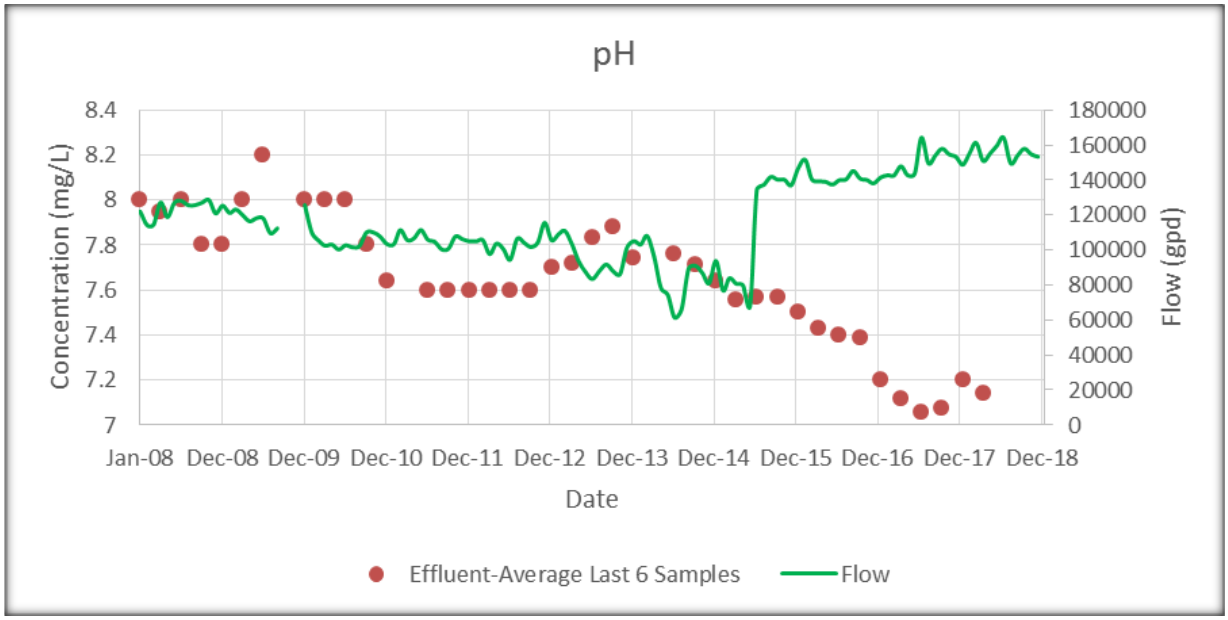


Figure B.1. pH Effluent Levels (2008 – 2018)

Total Dissolved Solids

Total Dissolved Solids (TDS) remain constant in both the effluent and water supply. The effluent TDS concentration is about 980 mg/L and the water supply is about 550 mg/L. The existing permit requires that the average TDS concentration in the last 6 samples remain less than 825 mg/L and that the maximum concentration not exceed 900 mg/L.

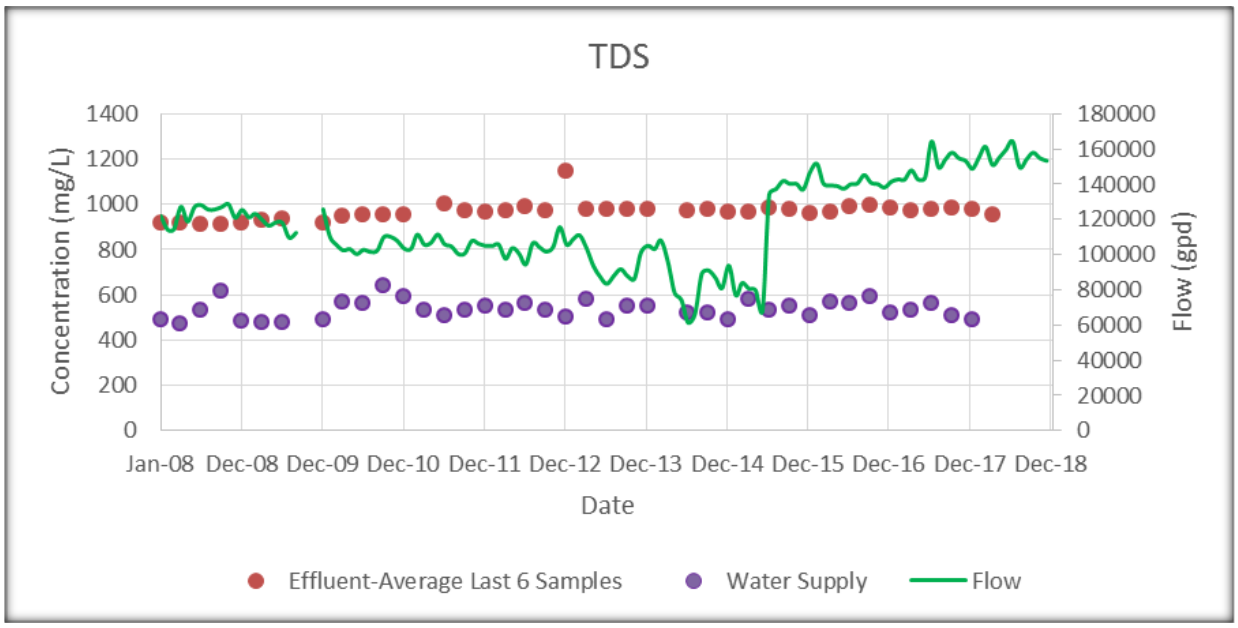


Figure B.2. TDS Effluent Levels (2008 – 2018)

Sulfates

Sulfates have increased in the effluent water by about 10 mg/L since 2015 and currently are about 155 mg/L. Sulfates in the water supply are very sporadic and average about 100 mg/L. The existing permit requires that the average sulfate concentration in the last 6 samples remain less than 175 mg/L and that the maximum concentration not exceed 200 mg/L.

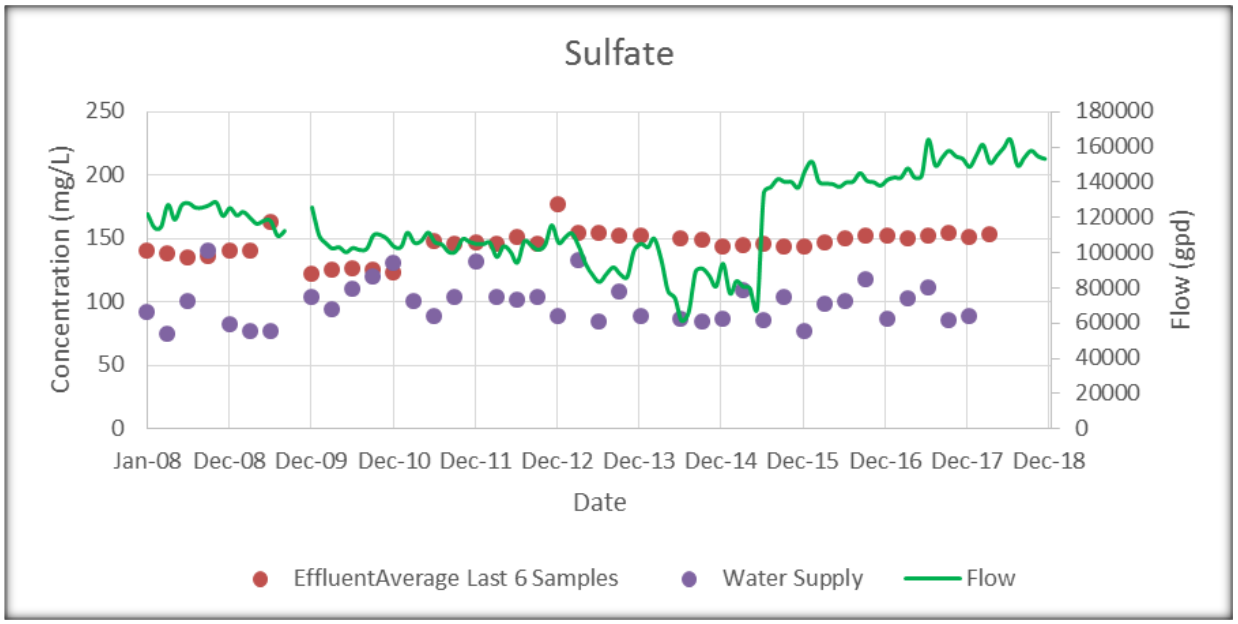


Figure B.3. Sulfate Effluent Levels (2008 – 2018)

Sodium

Sodium levels have slightly decreased in effluent since 2014 and are currently around 180 mg/L and have remained semi-constant in water supply near 70 mg/L. The existing permit requires that the average sodium concentration in the last 6 samples remain less than 150 mg/L and that the maximum concentration not exceed 170 mg/L.

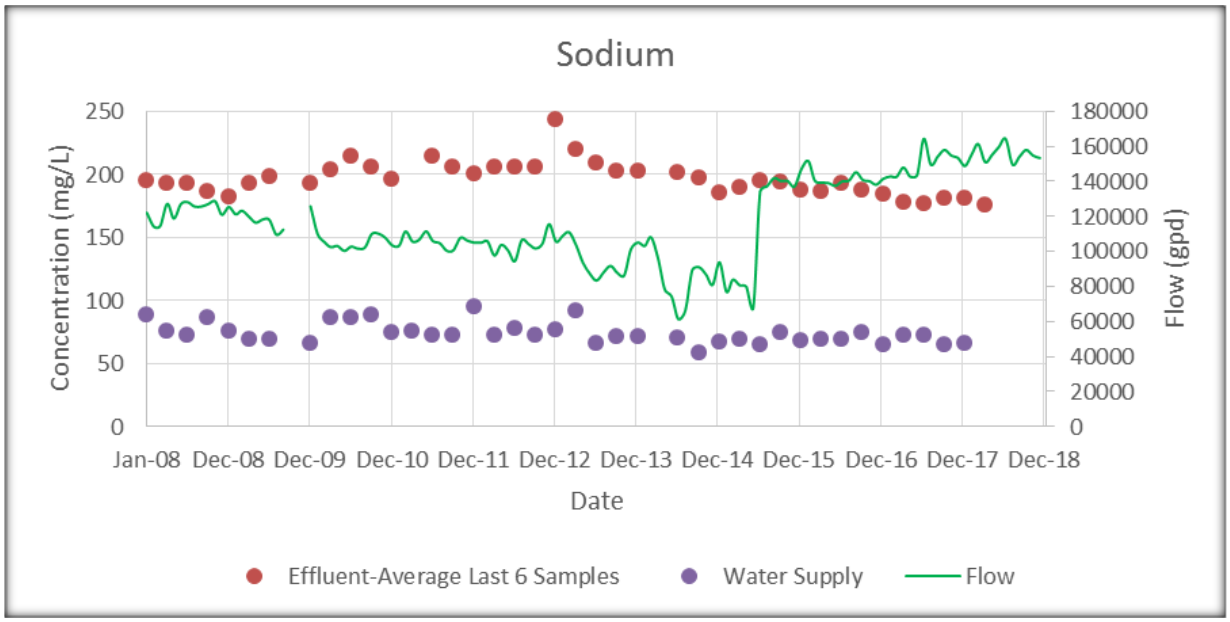


Figure B.4. Sodium Effluent Levels (2008 – 2018)

Chloride

Chloride levels have not had a significant increase or decrease in effluent or water supply. The effluent concentration levels have remained semi-constant at about 225 mg/L and the water supply near 75 mg/L. The existing permit requires that the average chloride concentration in the last 6 samples remain less than 180 mg/L and that the maximum concentration not exceed 200 mg/L.

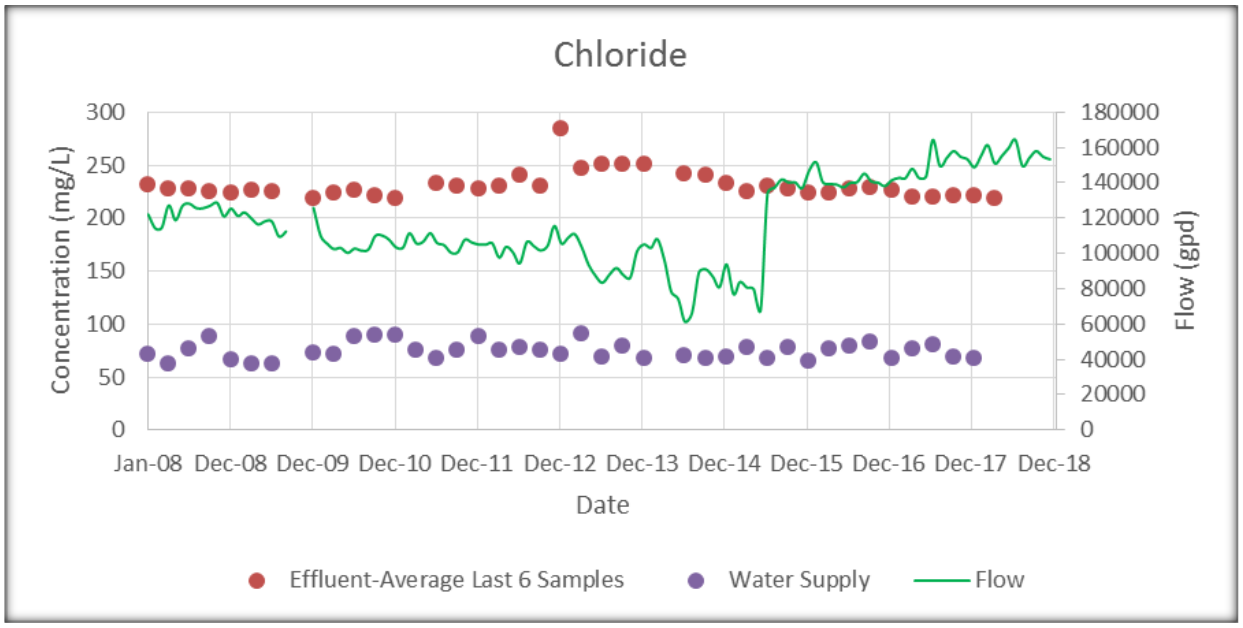


Figure B.5. Chloride Effluent Levels (2008 – 2018)

Boron

Boron levels have decreased from 0.7 mg/L to 0.6 mg/L since mid-2014. Boron is typically naturally occurring in water. Levels in drinking water vary from 0.1- 0.3 mg/L and depend greatly on geologic formations in the area. Other sources of boron can come from detergents that contain sodium perborate. The existing permit does not address boron in the WWTP effluent.

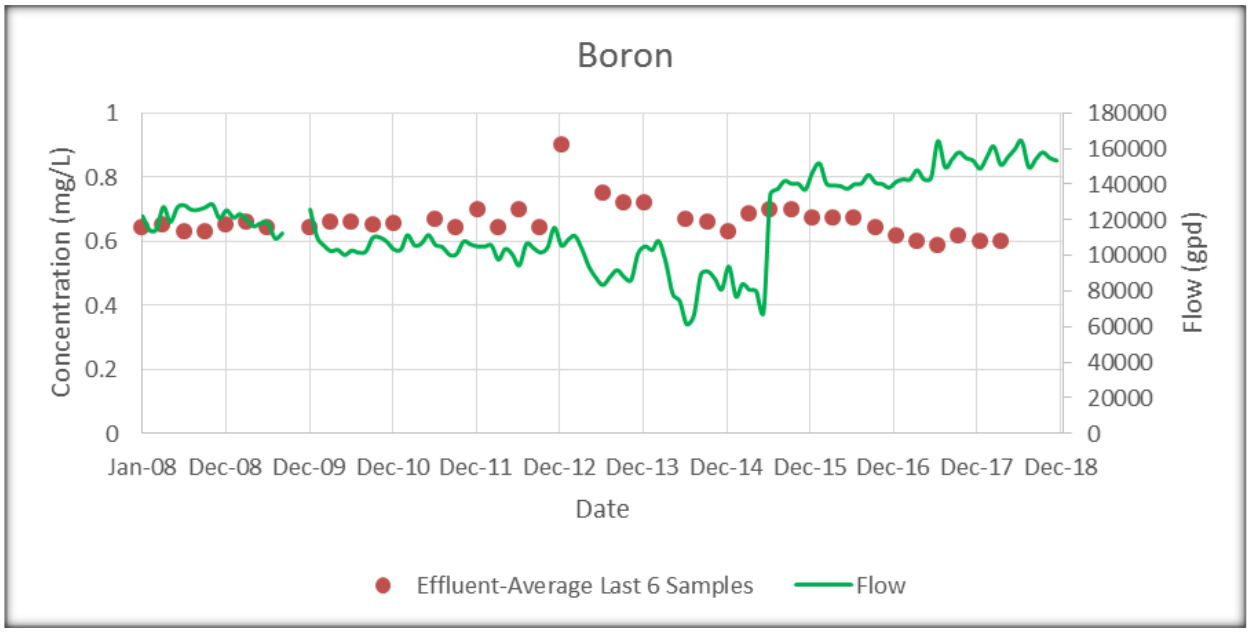


Figure B.6. Boron Effluent Levels (2008 – 2018)

Nitrogen: Total Nitrogen and Nitrate

Historic Total Nitrogen concentrations do not appear to have a consistent pattern, however recent trends average to about 27 mg/L in the effluent. Nitrate as N has an increasing trend since mid-2012 and current levels are around 23 mg/L. The Water Supply has not increased in Nitrate concentration and remains semi-constant at about 4 mg/L. The existing permit requires that nitrate concentrations in the WWTP downgradient monitoring well not exceed 5 mg/L.

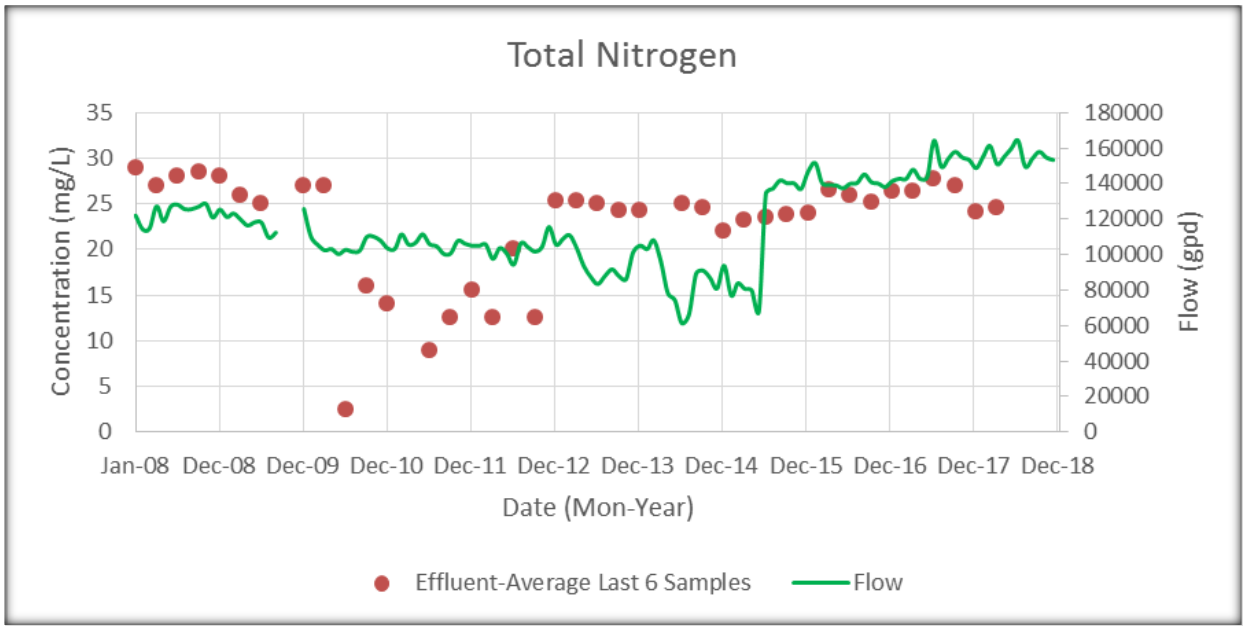


Figure B.7. Total Nitrogen Effluent Levels (2008 – 2018)

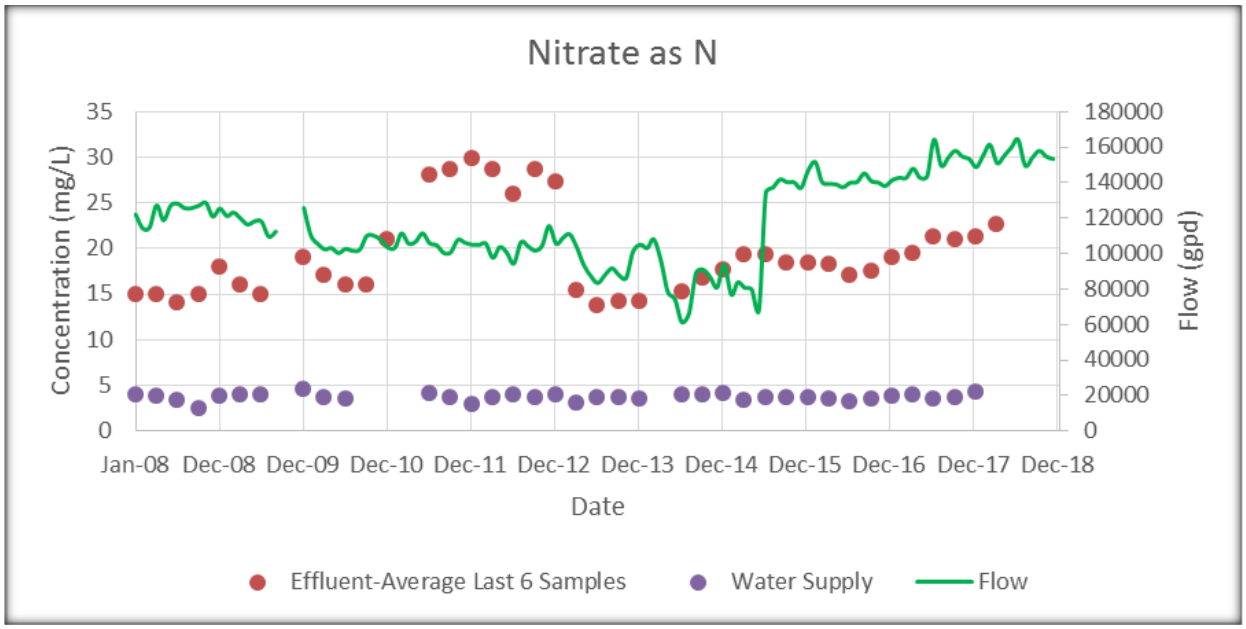


Figure B.8. Nitrate as N Effluent Levels (2008 – 2018)

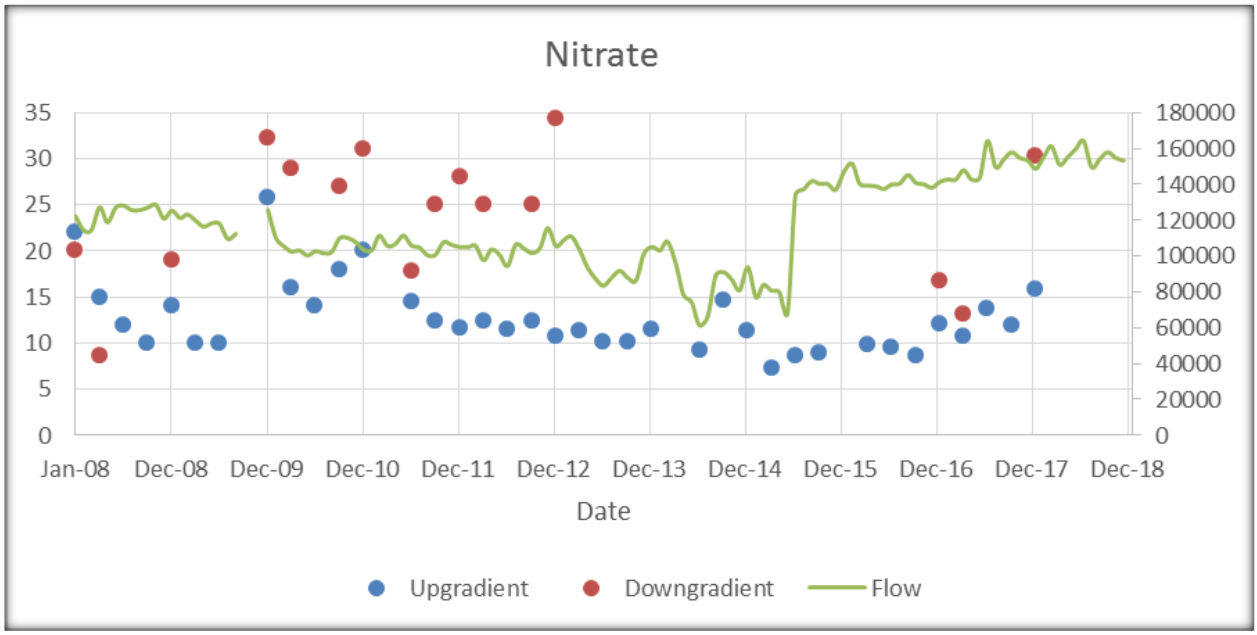


Figure B.9. Nitrate Levels (2008 – 2018)

To develop a more comprehensive understanding of the WWTP effluent chemistry, SMCSD staff performed a 9-week sampling program between October and December 2017 to characterize the WWTP influent. The sampling plan included the collection of one 24-hour composite sample and multiple grab samples. The samples were tested for dissolved oxygen (DO), pH, temperature, BODs, carbonaceous biological oxygen demand (cBOD), TSS, and nitrogen constituents including ammonia nitrogen, nitrate nitrogen, and Total Kjeldahl Nitrogen (TKN). A summary of the WWTP influent quality is summarized in the following Table B.1.

Table B.1 SMCSD WWTP Effluent Quality Parameters

Constituent	Units	Influent 24-hr Composite	Influent Grab	Pond 1 Grab	Pond 2 Grab	Pond 3 Grab	Pond 4 Grab
DO @ 1'	mg/L	---	3.59	1.48	9.11	10.11	9.41
DO @ 3'	mg/L	---	3.55	1.3	8.38	9.01	9.15
PH	pH units	7.74	8.37	---	8.1	8.28	8.37
Temp	°C	---	22.37	15.81	12.64	11.28	10.83
Ammonia Nitrogen (as N)	mg/L	58	69.4	---	1.0	1.7	0.9
BOD_5	mg/L	320	334	---	170	46	38
Nitrate Nitrogen (as N)	mg/L	0.1	2.9	---	25.9	23.1	22.2
TKN (as N)	mg/L	54.8	77.8	---	17.7	6.6	5.1
TSS	mg/L	130	270	---	193	50	42
CBOD	mg/L	438	310	---	61	22	16

Appendix F: November/December 2018 Influent Sampling Data- SMCSD and EJ Gallo Courtside Cellars

November 27, 2018

San Miguel CSD
1150 Mission St.
San Miguel, CA 93451

Lab ID : CC 1883409
Customer : 8-654

Laboratory Report

Introduction: This report package contains total of 11 pages divided into 3 sections:

Case Narrative	(3 pages)	: An overview of the work performed at FGL.
Sample Results	(2 pages)	: Results for each sample submitted.
Quality Control	(6 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
SMWWTP Influent	11/06/2018	11/06/2018	CC 1883409-001	WW
GALLOWWTP Influent	11/06/2018	11/06/2018	CC 1883409-002	WW

Sampling and Receipt Information: All samples were received, prepared and analyzed within the method specified holding except those as listed in the table below.

Lab ID	Analyte/Method	Required Holding Time	Actual Holding Time
CC 1883409-001	pH	15	10300.2 Minutes
CC 1883409-002	pH	15	10240.2 Minutes

All samples arrived on ice. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

Inorganic - Metals QC

200.7	11/13/2018:216700 All analysis quality controls are within established criteria.
200.8	11/15/2018:216814 All analysis quality controls are within established criteria.
3010	11/13/2018:213492 All preparation quality controls are within established criteria, except:

Corporate Offices & Laboratory
853 Corporation Street
Santa Paula, CA 93060
TEL: (805)392-2000
Env FAX: (805)525-4172 / Ag FAX: (805)392-2063
CA ELAP Certification No. 1573

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Stockton, CA 95215
TEL: (209)942-0182
FAX: (209)942-0423
CA ELAP Certification No. 1563

Office & Laboratory
563 E. Lindo Avenue
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FAX: (530)343-3807
CA ELAP Certification No. 2670

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CA ELAP Certification No. 2775

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FAX: (559)734-8435
CA ELAP Certification No. 2810

November 27, 2018 Lab ID : CC 1883409
San Miguel CSD Customer : 8-654

Inorganic - Metals QC

3010	The following note applies to Calcium: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery. The following note applies to Calcium, Iron, Potassium, Magnesium, Sodium: 430 Post Digestion Spike (PDS) not within Acceptance Range (AR) because of matrix interferences affecting this analyte. Data was accepted based on the LCS recovery.
	11/14/2018:213528 All preparation quality controls are within established criteria.

Inorganic - Wet Chemistry QC

2130B	11/07/2018:216401 All analysis quality controls are within established criteria.
	11/07/2018:213309 All preparation quality controls are within established criteria.
2320B	11/13/2018:216652 All analysis quality controls are within established criteria.
	11/12/2018:213447 All preparation quality controls are within established criteria.
2510B	11/08/2018:216406 All analysis quality controls are within established criteria.
	11/08/2018:213313 All preparation quality controls are within established criteria.
2540CE	11/08/2018:213333 All preparation quality controls are within established criteria.
2540D	11/08/2018:213322 All preparation quality controls are within established criteria.
300.0	11/07/2018:216429 All analysis quality controls are within established criteria.
	11/07/2018:213326 All preparation quality controls are within established criteria, except: The following note applies to Chloride, Nitrate: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.
351.2	11/15/2018:213601 All preparation quality controls are within established criteria.
4500-H B	11/13/2018:213491 All preparation quality controls are within established criteria.
4500HB	11/13/2018:216654 All analysis quality controls are within established criteria.
4500NH3G	11/12/2018:216606 All analysis quality controls are within established criteria.

November 27, 2018 Lab ID : CC 1883409
San Miguel CSD Customer : 8-654

Inorganic - Wet Chemistry QC

4500NH3G	11/12/2018:213430 All preparation quality controls are within established criteria.
4500-P B	11/15/2018:213593 All preparation quality controls are within established criteria.
	11/26/2018:213918 All preparation quality controls are within established criteria.
4500PE	11/16/2018:216765 All analysis quality controls are within established criteria.
	11/26/2018:217200 All analysis quality controls are within established criteria.
5210B	11/12/2018:216602 All analysis quality controls are within established criteria.
	11/12/2018:216605 All analysis quality controls are within established criteria.
	11/07/2018:213260 All preparation quality controls are within established criteria.
	11/07/2018:213281 All preparation quality controls are within established criteria, except: The following note applies to CBOD: 440 Sample nonhomogeneity may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.
EPA351.2	11/15/2018:216799 All analysis quality controls are within established criteria.

Certification:: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2018-11-27

November 27, 2018

San Miguel CSD
1150 Mission St.
San Miguel, CA 93451

Lab ID : CC 1883409-001
Customer ID : 8-654

Sampled On : November 6, 2018-08:00
Sampled By : Kelly Dodds
Received On : November 6, 2018-12:55
Matrix : Waste Water

Description : SMWWTP Influent
Project : WWTP Recycled Water

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Total								
Arsenic	0.003	0.002	mg/L		3010	11/14/18:213528	200.8	11/15/18:216814
Boron	0.543	0.025	mg/L		3010	11/13/18:213492	200.7	11/13/18:216700
Copper	0.045	0.001	mg/L		3010	11/14/18:213528	200.8	11/15/18:216814
Total Hardness as CaCO3	326	--	mg/L		3010	11/13/18:213492	200.7	11/13/18:216700
Calcium	53	1	mg/L		3010	11/13/18:213492	200.7	11/13/18:216700
Magnesium	47	1	mg/L		3010	11/13/18:213492	200.7	11/13/18:216700
Iron	0.29	0.05	mg/L		3010	11/13/18:213492	200.7	11/13/18:216700
Lead	0.0009	0.0002	mg/L		3010	11/14/18:213528	200.8	11/15/18:216814
Manganese	0.0219	0.0005	mg/L		3010	11/14/18:213528	200.8	11/15/18:216814
Potassium	20	1	mg/L		3010	11/13/18:213492	200.7	11/13/18:216700
Sodium Adsorption Ratio (SAR)	3.6	--	--		3010	11/13/18:213492	200.7	11/13/18:216700
Calcium	53	1	mg/L		3010	11/13/18:213492	200.7	11/13/18:216700
Magnesium	47	1	mg/L		3010	11/13/18:213492	200.7	11/13/18:216700
Sodium	148	1	mg/L		3010	11/13/18:213492	200.7	11/13/18:216700
Wet Chemistry								
Ammonia Nitrogen	74	2*	mg/L		4500NH3G	11/12/18:213430	4500NH3G	11/12/18:216606
Alkalinity (as CaCO3)	520	10	mg/L		2320B	11/12/18:213447	2320B	11/13/18:216652
Bicarbonate	640	10	mg/L		2320B	11/12/18:213447	2320B	11/13/18:216652
Carbonate	ND	10	mg/L		2320B	11/12/18:213447	2320B	11/13/18:216652
Hydroxide	ND	10	mg/L		2320B	11/12/18:213447	2320B	11/13/18:216652
BOD	391	260*	mg/L		5210B	11/07/18:213260	5210B	11/12/18:216602
Chloride	132	3*	mg/L		300.0	11/07/18:213326	300.0	11/07/18:216429
Specific Conductance	1.79	0.001	dS/m		2510B	11/08/18:213313	2510B	11/08/18:216406
Nitrate Nitrogen	ND	0.1	mg/L		300.0	11/07/18:213326	300.0	11/07/18:216429
Nitrogen, Total as Nitrogen	80	--	mg/L		351.2	11/15/18:213601	EPA351.2	11/15/18:216799
Nitrate + Nitrite as N	ND	0.1	mg/L		300.0	11/07/18:213326	300.0	11/07/18:216429
Kjeldahl Nitrogen	80	5*	mg/L		351.2	11/15/18:213601	EPA351.2	11/15/18:216799
pH	7.6	--	units		4500-H B	11/13/18:213491	4500HB	11/13/18:216654
Phosphorus, Total	14	2*	mg/L		4500-P B	11/26/18:213918	4500PE	11/26/18:217200
Total Dissolved Solids (TFR)	840	20	mg/L		2540CE	11/08/18:213333	2540C	11/09/18:216476
Solids, Total Suspended (TSS)	450	29*	mg/L		2540D	11/08/18:213322	2540D	11/09/18:216494
Sulfate	135	0.5	mg/L		300.0	11/07/18:213326	300.0	11/07/18:216429
Turbidity	63.0	0.1	NTU		2130B	11/07/18:213309	2130B	11/07/18:216401
CBOD	241	120*	mg/L		5210B	11/07/18:213281	5210B	11/12/18:216605

ND=Non-Detected. PQL=Practical Quantitation Limit. * PQL adjusted for dilution.

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November 27, 2018

San Miguel CSD
1150 Mission St.
San Miguel, CA 93451

Lab ID : CC 1883409-002
Customer ID : 8-654

Sampled On : November 6, 2018-09:00
Sampled By : Kelly Dodds
Received On : November 6, 2018-12:55
Matrix : Waste Water

Description : GALLOWWTP Influent
Project : WWTP Recycled Water

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Total								
Arsenic	0.01	0.002	mg/L		3010	11/14/18:213528	200.8	11/15/18:216814
Boron	0.568	0.025	mg/L		3010	11/13/18:213492	200.7	11/13/18:216700
Copper	0.033	0.001	mg/L		3010	11/14/18:213528	200.8	11/15/18:216814
Total Hardness as CaCO3	554	--	mg/L		3010	11/13/18:213492	200.7	11/13/18:216700
Calcium	95	1	mg/L		3010	11/13/18:213492	200.7	11/13/18:216700
Magnesium	77	1	mg/L		3010	11/13/18:213492	200.7	11/13/18:216700
Iron	0.68	0.05	mg/L		3010	11/13/18:213492	200.7	11/13/18:216700
Lead	0.001	0.0002	mg/L		3010	11/14/18:213528	200.8	11/15/18:216814
Manganese	0.0326	0.0005	mg/L		3010	11/14/18:213528	200.8	11/15/18:216814
Potassium	51	1	mg/L		3010	11/13/18:213492	200.7	11/13/18:216700
Sodium Adsorption Ratio (SAR)	4.0	--	--		3010	11/13/18:213492	200.7	11/13/18:216700
Calcium	95	1	mg/L		3010	11/13/18:213492	200.7	11/13/18:216700
Magnesium	77	1	mg/L		3010	11/13/18:213492	200.7	11/13/18:216700
Sodium	218	1	mg/L		3010	11/13/18:213492	200.7	11/13/18:216700
Wet Chemistry								
Ammonia Nitrogen	0.7	0.1	mg/L		4500NH3G	11/12/18:213430	4500NH3G	11/12/18:216606
Alkalinity (as CaCO3)	310	10	mg/L		2320B	11/12/18:213447	2320B	11/13/18:216652
Bicarbonate	380	10	mg/L		2320B	11/12/18:213447	2320B	11/13/18:216652
Carbonate	ND	10	mg/L		2320B	11/12/18:213447	2320B	11/13/18:216652
Hydroxide	ND	10	mg/L		2320B	11/12/18:213447	2320B	11/13/18:216652
BOD	2200	1000*	mg/L		5210B	11/07/18:213260	5210B	11/12/18:216602
Chloride	160	3*	mg/L		300.0	11/07/18:213326	300.0	11/07/18:216429
Specific Conductance	1.99	0.001	dS/m		2510B	11/08/18:213313	2510B	11/08/18:216406
Nitrate Nitrogen	5.6	0.1	mg/L		300.0	11/07/18:213326	300.0	11/07/18:216429
Nitrogen, Total as Nitrogen	16.1	--	mg/L		351.2	11/15/18:213601	EPA351.2	11/15/18:216799
Nitrate + Nitrite as N	5.6	0.1	mg/L		300.0	11/07/18:213326	300.0	11/07/18:216429
Kjeldahl Nitrogen	10.5	0.5	mg/L		351.2	11/15/18:213601	EPA351.2	11/15/18:216799
pH	6.1	--	units		4500-H B	11/13/18:213491	4500HB	11/13/18:216654
Phosphorus, Total	12	1*	mg/L		4500-P B	11/15/18:213593	4500PE	11/16/18:216765
Total Dissolved Solids (TFR)	2310	20	mg/L		2540CE	11/08/18:213333	2540C	11/09/18:216476
Solids, Total Suspended (TSS)	120	20*	mg/L		2540D	11/08/18:213322	2540D	11/09/18:216494
Sulfate	290	1.5*	mg/L		300.0	11/07/18:213326	300.0	11/07/18:216429
Turbidity	29.4	0.1	NTU		2130B	11/07/18:213309	2130B	11/07/18:216401
CBOD	2900	1000*	mg/L		5210B	11/07/18:213281	5210B	11/12/18:216605

ND=Non-Detected. PQL=Practical Quantitation Limit. * PQL adjusted for dilution.

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November 27, 2018 Lab ID : CC 1883409
San Miguel CSD Customer : 8-654

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Boron	200.7	11/13/18:216700AC	CCV	ppm	5.000	101 %	90-110	
			CCB	ppm		-0.035	0.1	
			CCV	ppm	5.000	96.3 %	90-110	
			CCB	ppm		-0.031	0.1	
			CCV	ppm	5.000	91.2 %	90-110	
			CCB	ppm		0.003	0.1	
			CCV	ppm	5.000	90.1 %	90-110	
			CCB	ppm		-0.030	0.1	
Calcium	200.7	11/13/18:216700AC	CCV	ppm	25.00	103 %	90-110	
			CCB	ppm		0.04	1	
			CCV	ppm	25.00	97.6 %	90-110	
			CCB	ppm		-0.002	1	
			CCV	ppm	25.00	96.9 %	90-110	
			CCB	ppm		0.007	1	
			CCV	ppm	25.00	95.6 %	90-110	
			CCB	ppm		-0.02	1	
Iron	200.7	11/13/18:216700AC	CCV	ppm	5.000	102 %	90-110	
			CCB	ppm		-0.0041	0.03	
			CCV	ppm	5.000	95.8 %	90-110	
			CCB	ppm		0.0033	0.03	
			CCV	ppm	5.000	94.8 %	90-110	
			CCB	ppm		0.0048	0.03	
			CCV	ppm	5.000	93.2 %	90-110	
			CCB	ppm		-0.0038	0.03	
Magnesium	200.7	11/13/18:216700AC	CCV	ppm	25.00	102 %	90-110	
			CCB	ppm		-0.02	1	
			CCV	ppm	25.00	97.6 %	90-110	
			CCB	ppm		-0.02	1	
			CCV	ppm	25.00	97.0 %	90-110	
			CCB	ppm		-0.02	1	
			CCV	ppm	25.00	96.9 %	90-110	
			CCB	ppm		-0.02	1	
Potassium	200.7	11/13/18:216700AC	CCV	ppm	25.00	98.5 %	90-110	
			CCB	ppm		-0.008	1	
			CCV	ppm	25.00	97.9 %	90-110	
			CCB	ppm		0.19	1	
			CCV	ppm	25.00	101 %	90-110	
			CCB	ppm		0.09	1	
			CCV	ppm	25.00	101 %	90-110	
			CCB	ppm		-0.08	1	
Sodium	200.7	11/13/18:216700AC	CCV	ppm	25.00	100 %	90-110	
			CCB	ppm		-0.006	1	
			CCV	ppm	25.00	98.7 %	90-110	
			CCB	ppm		0.08	1	
			CCV	ppm	25.00	102 %	90-110	
			CCB	ppm		0.37	1	
			CCV	ppm	25.00	102 %	90-110	
			CCB	ppm		0.29	1	
Arsenic	200.8	11/15/18:216814AC	ICV	ppb	120.0	104 %	90-110	
			ICB	ppb		-0.03	1	
			CCV	ppb	120.0	106 %	90-110	
			CCB	ppb		-0.02	1	
			CCV	ppb	120.0	107 %	90-110	
			CCB	ppb		-0.02	1	
Copper	200.8	11/15/18:216814AC	ICV	ppb	120.0	102 %	90-110	

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November 27, 2018 Lab ID : CC 1883409
San Miguel CSD Customer : 8-654

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Copper	200.8	11/15/18:216814AC	ICB	ppb		0.345	0.5	
			CCV	ppb	120.0	105 %	90-110	
			CCB	ppb		0.328	0.5	
			CCV	ppb	120.0	108 %	90-110	
			CCB	ppb		0.379	0.5	
Lead	200.8	11/15/18:216814AC	ICV	ppb	120.0	102 %	90-110	
			ICB	ppb		0.01	0.5	
			CCV	ppb	120.0	103 %	90-110	
			CCB	ppb		-0.002	0.5	
			CCV	ppb	120.0	103 %	90-110	
			CCB	ppb		0.014	0.5	
Manganese	200.8	11/15/18:216814AC	ICV	ppb	120.0	106 %	90-110	
			ICB	ppb		0.119	0.5	
			CCV	ppb	120.0	110 %	90-110	
			CCB	ppb		0.083	0.5	
			CCV	ppb	120.0	105 %	90-110	
			CCB	ppb		0.10	0.5	
Arsenic	3010	11/14/18:213528EMM	Blank	ug/L		ND	<2	
			LCS	ug/L	40.00	102 %	85-115	
			MS	ug/L	40.00	87.7 %	75-125	
		(CC 1883271-001)	MSD	ug/L	40.00	90.8 %	75-125	
			MSRPD	ug/L	40.00	3.3%	≤20	
			PDS	ug/L	40.00	86.2 %	75-125	
Boron	3010	11/13/18:213492emm	Blank	mg/L		ND	<0.025	
			LCS	mg/L	4.000	110 %	85-115	
			MS	mg/L	4.000	99.5 %	75-125	
		(CC 1883409-001)	MSD	mg/L	4.000	101 %	75-125	
			MSRPD	mg/L	0.8000	1.4%	≤20.0	
			PDS	mg/L	4.000	90.3 %	75-125	
			Blank	mg/L		ND	<0.025	
			LCS	mg/L	4.000	95.2 %	85-115	
			MS	mg/L	4.000	85.4 %	75-125	
		(STK1856005-001)	MSD	mg/L	4.000	88.0 %	75-125	
			MSRPD	mg/L	0.8000	2.9%	≤20.0	
			PDS	mg/L	4.000	90.1 %	75-125	
Calcium	3010	11/13/18:213492emm	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	113 %	85-115	
			MS	mg/L	12.00	81.8 %	75-125	
		(CC 1883409-001)	MSD	mg/L	12.00	81.9 %	75-125	
			MSRPD	mg/L	0.8000	0.03%	≤20.0	
			PDS	mg/L	12.00	-338 %	75-125	430
			Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	100 %	85-115	
			MS	mg/L	12.00	65.2 %	75-125	435
		(STK1856005-001)	MSD	mg/L	12.00	71.9 %	75-125	435
			MSRPD	mg/L	0.8000	2.2%	≤20.0	
			PDS	mg/L	12.00	-127 %	75-125	430
Copper	3010	11/14/18:213528EMM	Blank	ug/L		ND	<1	
			LCS	ug/L	40.00	107 %	85-115	
			MS	ug/L	40.00	86.1 %	75-125	
		(CC 1883271-001)	MSD	ug/L	40.00	89.5 %	75-125	
			MSRPD	ug/L	40.00	3.3%	≤20.0	
			PDS	ug/L	40.00	82.4 %	75-125	
Iron	3010	11/13/18:213492emm	Blank	mg/L		ND	<0.05	

November 27, 2018 Lab ID : CC 1883409
San Miguel CSD Customer : 8-654

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Iron	3010	11/13/18:213492emm	LCS	mg/L	4.000	112 %	85-115	
			MS	mg/L	4.000	92.4 %	75-125	
		(CC 1883409-001)	MSD	mg/L	4.000	93.7 %	75-125	
			MSRPD	mg/L	0.8000	1.3%	≤20.0	
			PDS	mg/L	4.000	98.4 %	75-125	
			Blank	mg/L		ND	<0.05	
			LCS	mg/L	4.000	97.5 %	85-115	
			MS	mg/L	4.000	82.2 %	75-125	
		(STK1856005-001)	MSD	mg/L	4.000	84.9 %	75-125	
			MSRPD	mg/L	0.8000	1.5%	≤20.0	
			PDS	mg/L	4.000	1.9 %	75-125	430
Lead	3010	11/14/18:213528EMM	Blank	ug/L		ND	<0.2	
			LCS	ug/L	40.00	104 %	85-115	
			MS	ug/L	40.00	102 %	75-125	
		(CC 1883271-001)	MSD	ug/L	40.00	103 %	75-125	
			MSRPD	ug/L	40.00	1.5%	≤20.0	
			PDS	ug/L	40.00	98.8 %	75-125	
Magnesium	3010	11/13/18:213492emm	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	113 %	85-115	
			MS	mg/L	12.00	81.0 %	75-125	
		(CC 1883409-001)	MSD	mg/L	12.00	80.0 %	75-125	
			MSRPD	mg/L	0.8000	0.2%	≤20.0	
			PDS	mg/L	12.00	-285 %	75-125	430
			Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	101 %	85-115	
			MS	mg/L	12.00	76.9 %	75-125	
		(STK1856005-001)	MSD	mg/L	12.00	82.0 %	75-125	
			MSRPD	mg/L	0.8000	2.6%	≤20.0	
			PDS	mg/L	12.00	-16.4 %	75-125	430
Manganese	3010	11/14/18:213528EMM	Blank	ug/L		ND	<0.5	
			LCS	ug/L	40.00	105 %	85-115	
			MS	ug/L	40.00	89.3 %	75-125	
		(CC 1883271-001)	MSD	ug/L	40.00	90.6 %	75-125	
			MSRPD	ug/L	40.00	1.3%	≤20	
			PDS	ug/L	40.00	86.6 %	75-125	
Potassium	3010	11/13/18:213492emm	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	109 %	85-115	
			MS	mg/L	12.00	88.7 %	75-125	
		(CC 1883409-001)	MSD	mg/L	12.00	93.0 %	75-125	
			MSRPD	mg/L	0.8000	1.7%	≤20	
			PDS	mg/L	12.00	-62.5 %	75-125	430
			Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	101 %	85-115	
			MS	mg/L	12.00	0.4 %	<¼	
		(STK1856005-001)	MSD	mg/L	12.00	-3.5 %	<¼	
			MSRPD	mg/L	0.8000	0.4%	≤20	
			PDS	mg/L	12.00	-823 %	75-125	430
Sodium	3010	11/13/18:213492emm	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	110 %	85-115	
			MS	mg/L	12.00	20.0 %	<¼	
		(CC 1883409-001)	MSD	mg/L	12.00	39.9 %	<¼	
			MSRPD	mg/L	0.8000	1.6%	≤20.0	
			PDS	mg/L	12.00	-1130 %	75-125	430
			Blank	mg/L		ND	<1	

November 27, 2018 Lab ID : CC 1883409
San Miguel CSD Customer : 8-654

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Sodium	3010	11/13/18:213492emm	LCS	mg/L	12.00	107 %	85-115	
			MS	mg/L	12.00	-1410 %	<¼	
		(STK1856005-001)	MSD	mg/L	12.00	-1440 %	<¼	
			MSRPD	mg/L	0.8000	0.5%	≤20.0	
			PDS	mg/L	12.00	-6140 %	75-125	430
Wet Chem								
Turbidity	2130B	(CC 1883397-001)	Dup	NTU		0.016	0.1	
	2130B	11/07/18:216401jba	CCV	NTU	10.00	107 %	90-110	
			CCB	NTU		0.098	0.1	
			CCV	NTU	10.00	107 %	90-110	
			CCB	NTU		0.099	0.1	
Alkalinity (as CaCO3)	2320B	(STK1856051-001)	Dup	mg/L		1.8	10	
		(CC 1883409-002)	Dup	mg/L		2.8%	10	
	2320B	11/13/18:216652AMM	CCV	mg/L	234.9	98.0 %	90-110	
			CCV	mg/L	234.9	101 %	90-110	
Bicarbonate	2320B	(STK1856051-001)	Dup	mg/L		2.2	10	
		(CC 1883409-002)	Dup	mg/L		2.8%	10	
Carbonate	2320B	(STK1856051-001)	Dup	mg/L		0.0	10	
		(CC 1883409-002)	Dup	mg/L		0.0	10	
Hydroxide	2320B	(STK1856051-001)	Dup	mg/L		0.0	10	
		(CC 1883409-002)	Dup	mg/L		0.0	10	
Conductivity	2510B	11/08/18:216406JMG	ICB	umhos/cm		0.15	1	
			ICV	umhos/cm	999.0	103 %	95-105	
			CCV	umhos/cm	999.0	103 %	95-105	
E. C.	2510B	11/08/18:213313jmg	Blank	umhos/cm		ND	<1	
		(CC 1883409-001)	Dup	umhos/cm		0.2%	5	
Total Dissolved Solids (TFR)	2540CE	11/08/18:213333CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	993.1	102 %	90-110	
		(SP 1814794-001)	Dup	mg/L		1.8%	5	
		(SP 1814794-002)	Dup	mg/L		0.8%	5	
Solids, Suspended	2540D	11/08/18:213322jba	Blank	mg/L		ND	<1	
			LCS	mg/L	50.11	68.8 %	61-112	
			LCS	mg/L	50.11	71.8 %	61-112	
		(CC 1883384-001)	Dup	mg/L		3.3%	20	
		(CC 1883393-001)	Dup	mg/L		15.9%	20	
Chloride	300.0	11/07/18:213326mca	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	99.8 %	90-110	
			MS	mg/L	50.00	69.0 %	85-121	435
		(STK1855646-002)	MSD	mg/L	50.00	78.2 %	85-121	435
			MSRPD	mg/L	10.00	4.2%	≤19	
			MS	mg/L	50.00	99.0 %	85-121	
		(STK1855846-001)	MSD	mg/L	50.00	99.1 %	85-121	
			MSRPD	mg/L	10.00	0.1%	≤19	
	300.0	11/07/18:216429MCA	ICB	mg/L		0.00	1	
			ICV	mg/L	25.00	101 %	90-110	
			CCB	mg/L		0.09	1	
			CCV	mg/L	25.00	101 %	90-110	
			CCB	mg/L		0.09	1	
			CCV	mg/L	25.00	101 %	90-110	
Nitrate	300.0	11/07/18:213326mca	Blank	mg/L		ND	<0.4	
			LCS	mg/L	20.00	96.9 %	90-110	
			MS	mg/L	40.00	101 %	85-119	
		(STK1855646-002)	MSD	mg/L	40.00	100 %	85-119	
			MSRPD	mg/L	10.00	0.6%	≤19	

November 27, 2018 Lab ID : CC 1883409
San Miguel CSD Customer : 8-654

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Nitrate	300.0		MS	mg/L	40.00	77.5 %	85-119	435
		(STK1855846-001)	MSD	mg/L	40.00	77.3 %	85-119	435
			MSRPD	mg/L	10.00	0.1%	≤19	
	300.0	11/07/18:216429MCA	ICB	mg/L		0.000	0.5	
			ICV	mg/L	20.00	97.6 %	90-110	
			CCB	mg/L		0.000	0.5	
			CCV	mg/L	20.00	98.5 %	90-110	
Sulfate	300.0	11/07/18:213326mca	Blank	mg/L		ND	<0.5	
			LCS	mg/L	50.00	98.6 %	90-110	
			MS	mg/L	100.0	94.8 %	82-124	
		(STK1855646-002)	MSD	mg/L	100.0	95.1 %	82-124	
			MSRPD	mg/L	10.00	0.2%	≤23	
			MS	mg/L	100.0	96.5 %	82-124	
		(STK1855846-001)	MSD	mg/L	100.0	96.6 %	82-124	
			MSRPD	mg/L	10.00	0.04%	≤23	
	300.0	11/07/18:216429MCA	ICB	mg/L		0.000	0.5	
			ICV	mg/L	50.00	99.3 %	90-110	
			CCB	mg/L		0.181	0.5	
			CCV	mg/L	50.00	99.9 %	90-110	
			CCB	mg/L		0.181	0.5	
			CCV	mg/L	50.00	99.4 %	90-110	
Nitrogen, Total Kjeldahl	351.2	11/15/18:213601jmg	Blank	mg/L		ND	<0.5	
			LCS	mg/L	12.00	78.6 %	73-124	
			MS	mg/L	12.00	61.2 %	54-136	
		(CC 1883412-002)	MSD	mg/L	12.00	67.8 %	54-136	
			MSRPD	mg/L	12.00	7.1%	≤27	
pH	4500-H B	(CC 1883253-001)	Dup	units		0.0%	4.80	
	4500HB	11/13/18:216654JBA	CCV	units	8.000	99.5 %	95-105	
			CCV	units	8.000	99.5 %	95-105	
Ammonia Nitrogen	4500NH3G		MS	mg/L	2.000	104 %	70-130	
		(STK1855936-001)	MSD	mg/L	2.000	105 %	70-130	
			MSRPD	mg/L	2.000	0.6%	≤20	
	4500NH3G	11/12/18:216606JDD	CCB	mg/L		-0.043	0.1	
			CCV	mg/L	2.000	105 %	90-110	
			CCB	mg/L		0.074	0.1	
			CCV	mg/L	2.000	109 %	90-110	
			CCB	mg/L		0.060	0.1	
			CCV	mg/L	2.000	105 %	90-110	
			CCB	mg/L		0.044	0.1	
			CCV	mg/L	2.000	105 %	90-110	
Phosphorus	4500-P B	11/15/18:213593JMR	Blank	mg/L		ND	<0.1	
			LCS	mg/L	0.5000	97.5 %	90-116	
			MS	mg/L	0.5000	58.3 %	25-292	
		(STK1856269-002)	MSD	mg/L	0.5000	63.1 %	25-292	
			MSRPD	mg/L	0.5000	0.024	≤0.1	
	4500-P B	11/26/18:213918JMR	Blank	mg/L		ND	<0.1	
			LCS	mg/L	0.5000	98.6 %	90-116	
			MS	mg/L	0.5000	13.1 %	<¼	
		(VI 1846331-001)	MSD	mg/L	0.5000	39.6 %	25-292	
			MSRPD	mg/L	0.5000	2.0%	≤13.2	
BOD	5210B	11/07/18:213260JMR	RgBlk	mg/L		0.07	2	
			LCS	mg/L	198.0	106 %	84.6-115	
		(VI 1845938-001)	Dup	mg/L		0.9%	15.9	
		(VI 1845938-001)	Dup	mg/L		4.7%	15.9	

November 27, 2018 Lab ID : CC 1883409
San Miguel CSD Customer : 8-654

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
BOD	5210B	(VI 1845938-001)	Dup	mg/L		1.1%	15.9	
	5210B	11/12/18:216602JMR	CCV	mg/L	1.000	102 %	80-120	
			CCV	mg/L	1.000	102 %	80-120	
CBOD	5210B	11/07/18:213281JMR	RgBlk	mg/L		0.14	2	
			LCS	mg/L	198.0	85.9 %	84.5-115	
		(CC 1883409-002)	Dup	mg/L		1.6%	11.6	
		(CC 1883409-002)	Dup	mg/L		20.7%	11.6	440
	5210B	11/12/18:216605JMR	CCV	mg/L	1.000	102 %	80-120	
			CCV	mg/L	1.000	102 %	80-120	
Nitrogen, Total Kjeldahl	EPA351.2	11/15/18:216799JDD	ICB	mg/L		0.192	0.5	
			ICV	mg/L	5.000	91.6 %	90-110	
			CCB	mg/L		0.207	0.5	
			CCV	mg/L	5.000	98.8 %	90-110	

Definition

PDS	: PDS failed, matrix - Post Digestion Spike (PDS) not within Acceptance Range (AR) because of matrix interferences affecting this analyte. Data was accepted based on the LCS recovery.
ICV	: Initial Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
ICB	: Initial Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
RgBlk	: Method Reagent Blank - Prepared to correct for any reagent contributions to sample result.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
Dup	: Duplicate Sample - A random sample with each batch is prepared and analyzed in duplicate. The relative percent difference is an indication of precision for the preparation and analysis.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
ND	: Non-detect - Result was below the DQO listed for the analyte.
<¼	: High Sample Background - Spike concentration was less than one forth of the sample concentration.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

Explanation

430	: Post Digestion Spike (PDS) not within Acceptance Range (AR) because of matrix interferences affecting this analyte. Data was accepted based on the LCS recovery.
435	: Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.
440	: Sample nonhomogeneity may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.

January 8, 2019

San Miguel CSD
1150 Mission St.
San Miguel, CA 93451

Lab ID : CC 1883703
Customer : 8-654

Laboratory Report

Introduction: This report package contains total of 10 pages divided into 3 sections:

Case Narrative	(3 pages)	: An overview of the work performed at FGL.
Sample Results	(2 pages)	: Results for each sample submitted.
Quality Control	(5 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
SMWWTP Influent	12/04/2018	12/04/2018	CC 1883703-001	WW
GALLOWWTP Influent	12/04/2018	12/04/2018	CC 1883703-002	WW

Sampling and Receipt Information: All samples were received, prepared and analyzed within the method specified holding except those as listed in the table below.

Lab ID	Analyte/Method	Required Holding Time	Actual Holding Time
CC 1883703-001	pH	15	21810 Minutes
CC 1883703-002	pH	15	39094.8 Minutes

All samples arrived on ice. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

Inorganic - Metals QC

200.7	12/06/2018:217819 All analysis quality controls are within established criteria
200.8	12/06/2018:217815 All analysis quality controls are within established criteria
	12/08/2018:217927 All analysis quality controls are within established criteria
3010	12/05/2018:214360 All preparation quality controls are within established criteria

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January 8, 2019 Lab ID : CC 1883703
San Miguel CSD Customer : 8-654

Inorganic - Metals QC

3010	12/06/2018:214370 All preparation quality controls are within established criteria

Inorganic - Wet Chemistry QC

2130B	12/05/2018:217793 All analysis quality controls are within established criteria
	12/05/2018:214413 All preparation quality controls are within established criteria
2320B	12/10/2018:218014 All analysis quality controls are within established criteria
	12/10/2018:214474 All preparation quality controls are within established criteria
2510B	12/06/2018:217765 All analysis quality controls are within established criteria
	12/06/2018:214379 All preparation quality controls are within established criteria
2540CE	12/06/2018:214398 All preparation quality controls are within established criteria
2540D	12/06/2018:214394 All preparation quality controls are within established criteria
300.0	12/05/2018:218044 All analysis quality controls are within established criteria
	12/05/2018:214525 All preparation quality controls are within established criteria
351.2	12/06/2018:214369 All preparation quality controls are within established criteria
4500-H B	12/19/2018:214877 All preparation quality controls are within established criteria
	12/31/2018:215227 All preparation quality controls are within established criteria
4500HB	12/19/2018:218404 All analysis quality controls are within established criteria
	12/31/2018:218841 All analysis quality controls are within established criteria
4500NH3G	12/10/2018:217942 All analysis quality controls are within established criteria
	12/10/2018:214505 All preparation quality controls are within established criteria
4500-P B	12/06/2018:214383 All preparation quality controls are within established criteria
4500PE	12/07/2018:217768 All analysis quality controls are within established criteria
5210B	12/10/2018:217941 All analysis quality controls are within established criteria

January 8, 2019 Lab ID : CC 1883703
San Miguel CSD Customer : 8-654

Inorganic - Wet Chemistry QC

5210B	12/10/2018:217943 All analysis quality controls are within established criteria
	12/05/2018:214333 All preparation quality controls are within established criteria
	12/05/2018:214358 All preparation quality controls are within established criteria
EPA351.2	12/07/2018:217872 All analysis quality controls are within established criteria

Certification:: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2019-01-08

January 8, 2019

San Miguel CSD
1150 Mission St.
San Miguel, CA 93451

Description : SMWWTP Influent
Project : WWTP Recycled Water

Lab ID : CC 1883703-001
Customer ID : 8-654

Sampled On : December 4, 2018-08:20
Sampled By : Kelly Dodds
Received On : December 4, 2018-12:42
Matrix : Waste Water

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Total								
Arsenic	ND	0.01*	mg/L		3010	12/06/18:214370	200.8	12/08/18:217927
Boron	0.474	0.025	mg/L		3010	12/05/18:214360	200.7	12/06/18:217819
Copper	0.060	0.005*	mg/L		3010	12/06/18:214370	200.8	12/08/18:217927
Total Hardness as CaCO3	283	--	mg/L		3010	12/05/18:214360	200.7	12/06/18:217819
Calcium	46	1	mg/L		3010	12/05/18:214360	200.7	12/06/18:217819
Magnesium	41	1	mg/L		3010	12/05/18:214360	200.7	12/06/18:217819
Iron	0.33	0.05	mg/L		3010	12/05/18:214360	200.7	12/06/18:217819
Lead	0.001	0.001*	mg/L		3010	12/06/18:214370	200.8	12/08/18:217927
Manganese	0.0248	0.0025*	mg/L		3010	12/06/18:214370	200.8	12/08/18:217927
Potassium	20	1	mg/L		3010	12/05/18:214360	200.7	12/06/18:217819
Sodium Adsorption Ratio (SAR)	3.7	--	--		3010	12/05/18:214360	200.7	12/06/18:217819
Calcium	46	1	mg/L		3010	12/05/18:214360	200.7	12/06/18:217819
Magnesium	41	1	mg/L		3010	12/05/18:214360	200.7	12/06/18:217819
Sodium	145	1	mg/L		3010	12/05/18:214360	200.7	12/06/18:217819
Wet Chemistry								
Ammonia Nitrogen	85	2*	mg/L		4500NH3G	12/10/18:214505	4500NH3G	12/10/18:217942
Alkalinity (as CaCO3)	620	10	mg/L		2320B	12/10/18:214474	2320B	12/10/18:218014
Bicarbonate	760	10	mg/L		2320B	12/10/18:214474	2320B	12/10/18:218014
Carbonate	ND	10	mg/L		2320B	12/10/18:214474	2320B	12/10/18:218014
Hydroxide	ND	10	mg/L		2320B	12/10/18:214474	2320B	12/10/18:218014
BOD	271	130*	mg/L		5210B	12/05/18:214333	5210B	12/10/18:217941
Chloride	145	6*	mg/L		300.0	12/05/18:214525	300.0	12/05/18:218044
Specific Conductance	2.04	0.001	dS/m		2510B	12/06/18:214379	2510B	12/06/18:217765
Nitrate Nitrogen	ND	0.1	mg/L		300.0	12/05/18:214525	300.0	12/05/18:218044
Nitrogen, Total as Nitrogen	105	--	mg/L		351.2	12/06/18:214369	EPA351.2	12/07/18:217872
Nitrate + Nitrite as N	ND	0.1	mg/L		300.0	12/05/18:214525	300.0	12/05/18:218044
Kjeldahl Nitrogen	105	5*	mg/L		351.2	12/06/18:214369	EPA351.2	12/07/18:217872
pH	7.7	--	units		4500-H B	12/19/18:214877	4500HB	12/19/18:218404
Phosphorus, Total	15	2*	mg/L		4500-P B	12/06/18:214383	4500PE	12/07/18:217768
Total Dissolved Solids (TFR)	900	20	mg/L		2540CE	12/06/18:214398	2540C	12/07/18:217822
Solids, Total Suspended (TSS)	380	20*	mg/L		2540D	12/06/18:214394	2540D	12/09/18:217892
Sulfate	153	0.5	mg/L		300.0	12/05/18:214525	300.0	12/05/18:218044
Turbidity	41.9	0.1	NTU		2130B	12/05/18:214413	2130B	12/05/18:217793
CBOD	235	120*	mg/L		5210B	12/05/18:214358	5210B	12/10/18:217943

ND=Non-Detected. PQL=Practical Quantitation Limit. * PQL adjusted for dilution.

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January 8, 2019

San Miguel CSD
1150 Mission St.
San Miguel, CA 93451

Lab ID : CC 1883703-002
Customer ID : 8-654

Sampled On : December 4, 2018-09:00
Sampled By : Kelly Dodds
Received On : December 4, 2018-12:42
Matrix : Waste Water

Description : GALLOWWTP Influent
Project : WWTP Recycled Water

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Total								
Arsenic	0.004	0.002	mg/L		3010	12/06/18:214370	200.8	12/06/18:217815
Boron	0.516	0.025	mg/L		3010	12/05/18:214360	200.7	12/06/18:217819
Copper	0.024	0.001	mg/L		3010	12/06/18:214370	200.8	12/06/18:217815
Total Hardness as CaCO3	632	--	mg/L		3010	12/05/18:214360	200.7	12/06/18:217819
Calcium	113	1	mg/L		3010	12/05/18:214360	200.7	12/06/18:217819
Magnesium	85	1	mg/L		3010	12/05/18:214360	200.7	12/06/18:217819
Iron	0.53	0.05	mg/L		3010	12/05/18:214360	200.7	12/06/18:217819
Lead	0.0008	0.0002	mg/L		3010	12/06/18:214370	200.8	12/06/18:217815
Manganese	0.0156	0.0005	mg/L		3010	12/06/18:214370	200.8	12/06/18:217815
Potassium	20	1	mg/L		3010	12/05/18:214360	200.7	12/06/18:217819
Sodium Adsorption Ratio (SAR)	2.6	--	--		3010	12/05/18:214360	200.7	12/06/18:217819
Calcium	113	1	mg/L		3010	12/05/18:214360	200.7	12/06/18:217819
Magnesium	85	1	mg/L		3010	12/05/18:214360	200.7	12/06/18:217819
Sodium	150	1	mg/L		3010	12/05/18:214360	200.7	12/06/18:217819
Wet Chemistry								
Ammonia Nitrogen	0.3	0.1	mg/L		4500NH3G	12/10/18:214505	4500NH3G	12/10/18:217942
Alkalinity (as CaCO3)	450	10	mg/L		2320B	12/10/18:214474	2320B	12/10/18:218014
Bicarbonate	550	10	mg/L		2320B	12/10/18:214474	2320B	12/10/18:218014
Carbonate	ND	10	mg/L		2320B	12/10/18:214474	2320B	12/10/18:218014
Hydroxide	ND	10	mg/L		2320B	12/10/18:214474	2320B	12/10/18:218014
BOD	980	520*	mg/L		5210B	12/05/18:214333	5210B	12/10/18:217941
Chloride	198	8*	mg/L		300.0	12/05/18:214525	300.0	12/05/18:218044
Specific Conductance	1.93	0.001	dS/m		2510B	12/06/18:214379	2510B	12/06/18:217765
Nitrate Nitrogen	6.1	0.1	mg/L		300.0	12/05/18:214525	300.0	12/05/18:218044
Nitrogen, Total as Nitrogen	10.9	--	mg/L		351.2	12/06/18:214369	EPA351.2	12/07/18:217872
Nitrate + Nitrite as N	6.1	0.1	mg/L		300.0	12/05/18:214525	300.0	12/05/18:218044
Kjeldahl Nitrogen	4.8	0.5	mg/L		351.2	12/06/18:214369	EPA351.2	12/07/18:217872
pH	6.5	--	units		4500-H B	12/31/18:215227	4500HB	12/31/18:218841
Phosphorus, Total	3	1*	mg/L		4500-P B	12/06/18:214383	4500PE	12/07/18:217768
Total Dissolved Solids (TFR)	1410	20	mg/L		2540CE	12/06/18:214398	2540C	12/07/18:217822
Solids, Total Suspended (TSS)	28	5*	mg/L		2540D	12/06/18:214394	2540D	12/09/18:217892
Sulfate	268	4*	mg/L		300.0	12/05/18:214525	300.0	12/05/18:218044
Turbidity	10.7	0.1	NTU		2130B	12/05/18:214413	2130B	12/05/18:217793
CBOD	1120	480*	mg/L		5210B	12/05/18:214358	5210B	12/10/18:217943

ND=Non-Detected. PQL=Practical Quantitation Limit. * PQL adjusted for dilution.

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January 8, 2019 Lab ID : CC 1883703
San Miguel CSD Customer : 8-654

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Boron	200.7	12/06/18:217819AC	CCV	ppm	5.000	97.8 %	90-110	
			CCB	ppm		0.008	0.1	
			CCV	ppm	5.000	95.0 %	90-110	
			CCB	ppm		-0.004	0.1	
Calcium	200.7	12/06/18:217819AC	CCV	ppm	25.00	104 %	90-110	
			CCB	ppm		-0.04	1	
			CCV	ppm	25.00	103 %	90-110	
			CCB	ppm		-0.05	1	
Iron	200.7	12/06/18:217819AC	CCV	ppm	5.000	98.6 %	90-110	
			CCB	ppm		0.0076	0.03	
			CCV	ppm	5.000	96.2 %	90-110	
			CCB	ppm		0.0039	0.03	
Magnesium	200.7	12/06/18:217819AC	CCV	ppm	25.00	104 %	90-110	
			CCB	ppm		-0.002	1	
			CCV	ppm	25.00	103 %	90-110	
			CCB	ppm		-0.001	1	
Potassium	200.7	12/06/18:217819AC	CCV	ppm	25.00	94.3 %	90-110	
			CCB	ppm		0.04	1	
			CCV	ppm	25.00	93.3 %	90-110	
			CCB	ppm		0.14	1	
Sodium	200.7	12/06/18:217819AC	CCV	ppm	25.00	109 %	90-110	
			CCB	ppm		0.15	1	
			CCV	ppm	25.00	109 %	90-110	
			CCB	ppm		0.19	1	
Arsenic	200.8	12/06/18:217815AC	CCV	ppb	120.0	99.9 %	90-110	
			CCB	ppb		-0.005	1	
			CCV	ppb	120.0	102 %	90-110	
			CCB	ppb		0.03	1	
	200.8	12/08/18:217927AC	CCV	ppb	120.0	107 %	90-110	
			CCB	ppb		0.01	1	
			CCV	ppb	120.0	104 %	90-110	
			CCB	ppb		0.03	1	
Copper	200.8	12/06/18:217815AC	CCV	ppb	120.0	90.4 %	90-110	
			CCB	ppb		-0.002	0.5	
			CCV	ppb	120.0	90.6 %	90-110	
			CCB	ppb		-0.014	0.5	
	200.8	12/08/18:217927AC	CCV	ppb	120.0	96.9 %	90-110	
			CCB	ppb		0.106	0.5	
			CCV	ppb	120.0	92.7 %	90-110	
			CCB	ppb		-0.094	0.5	
Lead	200.8	12/06/18:217815AC	CCV	ppb	120.0	92.3 %	90-110	
			CCB	ppb		0.023	0.5	
			CCV	ppb	120.0	91.4 %	90-110	
			CCB	ppb		0.029	0.5	
	200.8	12/08/18:217927AC	CCV	ppb	120.0	93.6 %	90-110	
			CCB	ppb		-0.020	0.5	
			CCV	ppb	120.0	92.7 %	90-110	
			CCB	ppb		-0.01	0.5	
Manganese	200.8	12/06/18:217815AC	CCV	ppb	120.0	92.5 %	90-110	
			CCB	ppb		0.045	0.5	
			CCV	ppb	120.0	93.3 %	90-110	
			CCB	ppb		0.048	0.5	
	200.8	12/08/18:217927AC	CCV	ppb	120.0	98.0 %	90-110	
			CCB	ppb		0.012	0.5	
			CCV	ppb	120.0	96.7 %	90-110	

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January 8, 2019 Lab ID : CC 1883703
San Miguel CSD Customer : 8-654

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Manganese	200.8	12/08/18:217927AC	CCB	ppb		0.036	0.5	
Arsenic	3010	12/06/18:214370ac	Blank	ug/L		ND	<2	
			LCS	ug/L	40.00	101 %	85-115	
			MS	ug/L	40.00	99.0 %	75-125	
		(STK1857292-002)	MSD	ug/L	40.00	103 %	75-125	
			MSRPD	ug/L	40.00	3.1%	≤20	
			PDS	ug/L	40.00	97.5 %	75-125	
Boron	3010	12/05/18:214360ac	Blank	mg/L		ND	<0.025	
			LCS	mg/L	4.000	97.1 %	85-115	
			MS	mg/L	4.000	85.1 %	75-125	
		(SP 1815998-001)	MSD	mg/L	4.000	88.1 %	75-125	
			MSRPD	mg/L	0.8000	3.4%	≤20.0	
			PDS	mg/L	4.000	87.2 %	75-125	
Calcium	3010	12/05/18:214360ac	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	103 %	85-115	
			MS	mg/L	12.00	97.9 %	75-125	
		(SP 1815998-001)	MSD	mg/L	12.00	89.6 %	75-125	
			MSRPD	mg/L	0.8000	4.6%	≤20.0	
			PDS	mg/L	12.00	87.6 %	75-125	
Copper	3010	12/06/18:214370ac	Blank	ug/L		ND	<1	
			LCS	ug/L	40.00	94.4 %	85-115	
			MS	ug/L	40.00	86.8 %	75-125	
		(STK1857292-002)	MSD	ug/L	40.00	87.2 %	75-125	
			MSRPD	ug/L	40.00	0.4%	≤20.0	
			PDS	ug/L	40.00	84.1 %	75-125	
Iron	3010	12/05/18:214360ac	Blank	mg/L		ND	<0.05	
			LCS	mg/L	4.000	99.4 %	85-115	
			MS	mg/L	4.000	91.4 %	75-125	
		(SP 1815998-001)	MSD	mg/L	4.000	84.2 %	75-125	
			MSRPD	mg/L	0.8000	5.0%	≤20.0	
			PDS	mg/L	4.000	85.4 %	75-125	
Lead	3010	12/06/18:214370ac	Blank	ug/L		ND	<0.2	
			LCS	ug/L	40.00	96.7 %	85-115	
			MS	ug/L	40.00	95.3 %	75-125	
		(STK1857292-002)	MSD	ug/L	40.00	97.1 %	75-125	
			MSRPD	ug/L	40.00	1.8%	≤20.0	
			PDS	ug/L	40.00	94.1 %	75-125	
Magnesium	3010	12/05/18:214360ac	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	104 %	85-115	
			MS	mg/L	12.00	95.4 %	75-125	
		(SP 1815998-001)	MSD	mg/L	12.00	91.6 %	75-125	
			MSRPD	mg/L	0.8000	3.6%	≤20.0	
			PDS	mg/L	12.00	90.9 %	75-125	
Manganese	3010	12/06/18:214370ac	Blank	ug/L		ND	<0.5	
			LCS	ug/L	40.00	95.9 %	85-115	
			MS	ug/L	40.00	89.5 %	75-125	
		(STK1857292-002)	MSD	ug/L	40.00	90.9 %	75-125	
			MSRPD	ug/L	40.00	1.2%	≤20	
			PDS	ug/L	40.00	89.6 %	75-125	
Potassium	3010	12/05/18:214360ac	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	97.5 %	85-115	
			MS	mg/L	12.00	89.8 %	75-125	
		(SP 1815998-001)	MSD	mg/L	12.00	84.9 %	75-125	
			MSRPD	mg/L	0.8000	4.1%	≤20	

January 8, 2019 Lab ID : CC 1883703
San Miguel CSD Customer : 8-654

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Potassium	3010	12/05/18:214360ac	PDS	mg/L	12.00	83.5 %	75-125	
Sodium	3010	12/05/18:214360ac	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	109 %	85-115	
			MS	mg/L	12.00	99.7 %	75-125	
		(SP 1815998-001)	MSD	mg/L	12.00	95.0 %	75-125	
			MSRPD	mg/L	0.8000	3.4%	≤20.0	
			PDS	mg/L	12.00	94.1 %	75-125	
Wet Chem								
Turbidity	2130B	(CC 1883594-001)	Dup	NTU		0.012	0.1	
	2130B	12/05/18:217793jba	CCV	NTU	10.00	104 %	90-110	
			CCB	NTU		0.099	0.1	
			CCV	NTU	10.00	106 %	90-110	
			CCB	NTU		0.096	0.1	
Alkalinity (as CaCO3)	2320B	(CH 1890178-003)	Dup	mg/L		0.3%	10	
		(SP 1816156-001)	Dup	mg/L		7.1	10	
	2320B	12/10/18:218014AMM	CCV	mg/L	234.9	95.3 %	90-110	
			CCV	mg/L	234.9	104 %	90-110	
			CCV	mg/L	234.9	106 %	90-110	
Bicarbonate	2320B	(CH 1890178-003)	Dup	mg/L		0.4%	10	
		(SP 1816156-001)	Dup	mg/L		8.5	10	
Carbonate	2320B	(CH 1890178-003)	Dup	mg/L		0.0	10	
		(SP 1816156-001)	Dup	mg/L		0.0	10	
Hydroxide	2320B	(CH 1890178-003)	Dup	mg/L		0.0	10	
		(SP 1816156-001)	Dup	mg/L		0.0	10	
Conductivity	2510B	12/06/18:217765JMG	ICB	umhos/cm		0.1	1	
			ICV	umhos/cm	999.0	103 %	95-105	
			CCV	umhos/cm	999.0	103 %	95-105	
E. C.	2510B	12/06/18:214379jmg	Blank	umhos/cm		ND	<1	
		(CC 1883663-001)	Dup	umhos/cm		0.08%	5	
Total Dissolved Solids (TFR)	2540CE	12/06/18:214398CTL	Blank	mg/L		3.9	20	
			LCS	mg/L	993.1	98.0 %	90-110	
		(STK1857360-001)	Dup	mg/L		1.9%	5	
		(STK1857361-002)	Dup	mg/L		0.3%	5	
Solids, Suspended	2540D	12/06/18:214394jba	Blank	mg/L		ND	<1	
			LCS	mg/L	50.11	84.8 %	61-112	
			LCS	mg/L	50.11	91.8 %	61-112	
		(CC 1883671-001)	Dup	mg/L		1.1%	20	
		(CC 1883685-001)	Dup	mg/L		0.2%	20	
Chloride	300.0	12/05/18:214525mca	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	99.1 %	90-110	
			MS	mg/L	50.00	95.6 %	85-121	
		(STK1857091-001)	MSD	mg/L	50.00	103 %	85-121	
			MSRPD	mg/L	10.00	5.9%	≤19	
			MS	mg/L	50.00	99.2 %	85-121	
		(STK1857091-004)	MSD	mg/L	50.00	100 %	85-121	
			MSRPD	mg/L	10.00	0.9%	≤19	
	300.0	12/05/18:218044MCA	CCB	mg/L		0.00	1	
			CCV	mg/L	25.00	101 %	90-110	
			CCB	mg/L		0.11	1	
			CCV	mg/L	25.00	101 %	90-110	
Nitrate	300.0	12/05/18:214525mca	Blank	mg/L		ND	<0.4	
			LCS	mg/L	20.00	97.8 %	90-110	
			MS	mg/L	40.00	97.8 %	85-119	
		(STK1857091-001)	MSD	mg/L	40.00	105 %	85-119	

January 8, 2019 Lab ID : CC 1883703
San Miguel CSD Customer : 8-654

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Nitrate	300.0	12/05/18:214525mca	MSRPD	mg/L	10.00	7.1%	≤19	
			MS	mg/L	40.00	100 %	85-119	
		(STK1857091-004)	MSD	mg/L	40.00	101 %	85-119	
			MSRPD	mg/L	10.00	1.0%	≤19	
	300.0	12/05/18:218044MCA	CCB	mg/L		0.000	0.5	
			CCV	mg/L	20.00	99.6 %	90-110	
			CCB	mg/L		0.000	0.5	
			CCV	mg/L	20.00	99.5 %	90-110	
Nitrate + Nitrite as N	300.0	12/05/18:214525mca	Blank	mg/L		ND	<0.1	
Nitrate Nitrogen	300.0	12/05/18:214525mca	Blank	mg/L		ND	<0.1	
Sulfate	300.0	12/05/18:214525mca	Blank	mg/L		ND	<0.5	
			LCS	mg/L	50.00	97.8 %	90-110	
			MS	mg/L	100.0	96.4 %	82-124	
		(STK1857091-001)	MSD	mg/L	100.0	104 %	82-124	
			MSRPD	mg/L	10.00	7.0%	≤23	
			MS	mg/L	100.0	99.0 %	82-124	
		(STK1857091-004)	MSD	mg/L	100.0	100 %	82-124	
			MSRPD	mg/L	10.00	1.0%	≤23	
	300.0	12/05/18:218044MCA	CCB	mg/L		0.177	0.5	
			CCV	mg/L	50.00	99.6 %	90-110	
			CCB	mg/L		0.000	0.5	
			CCV	mg/L	50.00	99.8 %	90-110	
			CCB	mg/L		0.211	0.5	
			CCV	mg/L	50.00	99.8 %	90-110	
Nitrogen, Total Kjeldahl	351.2	12/06/18:214369jmg	Blank	mg/L		ND	<0.5	
			LCS	mg/L	12.00	79.9 %	73-124	
			MS	mg/L	12.00	79.9 %	54-136	
		(CC 1883667-001)	MSD	mg/L	12.00	89.0 %	54-136	
			MSRPD	mg/L	12.00	11.4%	≤27	
pH	4500-H B	(CC 1883703-001)	Dup	units		0.0%	4.80	
	4500-H B	(CC 1883610-001)	Dup	units		0.0%	4.80	
	4500HB	12/19/18:218404JBA	CCV	units	8.000	101 %	95-105	
			CCV	units	8.000	101 %	95-105	
	4500HB	12/31/18:218841JBA	CCV	units	8.000	100 %	95-105	
			CCV	units	8.000	101 %	95-105	
Ammonia Nitrogen	4500NH3G		MS	mg/L	2.000	102 %	70-130	
		(SP 1816138-001)	MSD	mg/L	2.000	103 %	70-130	
			MSRPD	mg/L	2.000	0.8%	≤20	
	4500NH3G	12/10/18:217942JDD	CCB	mg/L		0.016	0.1	
			CCV	mg/L	2.000	103 %	90-110	
			CCB	mg/L		0.038	0.1	
			CCV	mg/L	2.000	103 %	90-110	
Phosphorus	4500-P B	12/06/18:214383JMR	Blank	mg/L		ND	<0.1	
			LCS	mg/L	0.5000	93.8 %	90-116	
			MS	mg/L	0.5000	45.6 %	25-292	
		(SP 1816119-003)	MSD	mg/L	0.5000	40.3 %	25-292	
			MSRPD	mg/L	0.5000	0.026	≤0.1	
BOD	5210B	12/05/18:214333JMR	RgBlk	mg/L		0.21	2	
			LCS	mg/L	198.0	100 %	84.6-115	
		(CH 1890169-001)	Dup	mg/L		15.0%	15.9	
		(CH 1890169-001)	Dup	mg/L		12.4%	15.9	
	5210B	12/10/18:217941JMR	CCV	mg/L	1.000	102 %	80-120	
			CCV	mg/L	1.000	102 %	80-120	
CBOD	5210B	12/05/18:214358JMR	RgBlk	mg/L		-0.05	2	

January 8, 2019 Lab ID : CC 1883703
San Miguel CSD Customer : 8-654

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
CBOD	5210B	12/05/18:214358JMR	LCS	mg/L	198.0	96.2 %	84.5-115	
		(SP 1815989-001)	Dup	mg/L		0.020	2	
	5210B	12/10/18:217943JMR	CCV	mg/L	1.000	102 %	80-120	
			CCV	mg/L	1.000	102 %	80-120	
Nitrogen, Total Kjeldahl	EPA351.2	12/07/18:217872JDD	CCB	mg/L		0.297	0.5	
			CCV	mg/L	5.000	100 %	90-110	
			CCB	mg/L		0.291	0.5	
			CCV	mg/L	5.000	99.6 %	90-110	

Definition

PDS	: PDS failed, matrix - Post Digestion Spike (PDS) not within Acceptance Range (AR) because of matrix interferences affecting this analyte. Data was accepted based on the LCS recovery.
ICV	: Initial Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
ICB	: Initial Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
RgBlk	: Method Reagent Blank - Prepared to correct for any reagent contributions to sample result.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
Dup	: Duplicate Sample - A random sample with each batch is prepared and analyzed in duplicate. The relative percent difference is an indication of precision for the preparation and analysis.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
ND	: Non-detect - Result was below the DQO listed for the analyte.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

Appendix G: SMCSD Sanitary Sewer Collection System Salt Sampling Results and Analysis

MONSOON CONSULTANTS

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breely@monsoonconsultants.com

September 10, 2019

Kelly Dodds
San Miguel Community Services District
1150 Mission St
San Miguel CA 93451

Re: **SMCSD Sanitary Sewer Collection System Salt Sampling Results and Analysis**

Dear Kelly:

Per your request, Monsoon Consultants (Monsoon) has collected and analyzed samples from the sanitary sewer collection system to determine the presence and relative distribution of identified salt concentrations throughout the SMCSD sanitary sewer system. These samples were taken from seven (7) contributing areas within the District. The goal of the sampling program was be to help identify the source and movement of salts within the SMCSD sanitary sewer system and pinpoint any source of elevated levels of salt concentration, if any, that pass into the San Miguel Wastewater Treatment Plant (SMWWTP). The samples were collected by FGL Environmental and focused on collecting concentration data for the following constituents at each manhole:

- Sodium
- Chloride
- Total Dissolved Solids
- Sulfate

Based on the results of the recently completed WWTP Expansion/Renovation Engineering study, it was identified that salt treatment was not feasible and salt concentrations would be passed through the system and be discharged with the plant effluent. With the production of recycled water based on advanced secondary treatment that meets title 22 standards for non-contact between edible portion and recycled water, nearby local vineyards would be interested in taking future SMCSD treated effluent but are apprehensive due to the high concentration of salt within the recycled stream. Monsoon identified manholes within the District to possibly identify outside source contribution of salts within the sewer system to reduce influent concentration going into the SMWWTP.

Monsoon identified seven (7) sewer manhole locations that served as sampling sites for the study of concentrations of salts within the SMCSD. The proposed sampling was selected to be representative of areas within the District that shared similar characteristics, including the age of the home, location, land use permitting, and demographic profile. Manholes were selected from all parts of the District to receive evenly distributed areas of concentrations across the whole District. The manholes identified and the corresponding constituent concentrations are shown below:

SAMPLING MANHOLE SALT SURVEY RESULTS					
Number	Manhole I.D.	Sodium Level (mg/L)	Chloride Level (mg/L)	Total Dissolved Solids (mg/L)	Sulfate Level (mg/L)
1	1-18	197	235	840	96
2	3-28	113	142	820	114
3	3-36	163	131	900	162
4	5-09*	183	178	920	129
5	5-13	165	141	950	168
6	5-21	116	144	810	126
7	7-31	181	178	1040	180

For an exhibit of contributing areas and sampling manholes within the District, refer to Attachment A.

*Manhole ID incorrect and results from manhole 5-05 are on the way. Table will be updated when results are gathered.

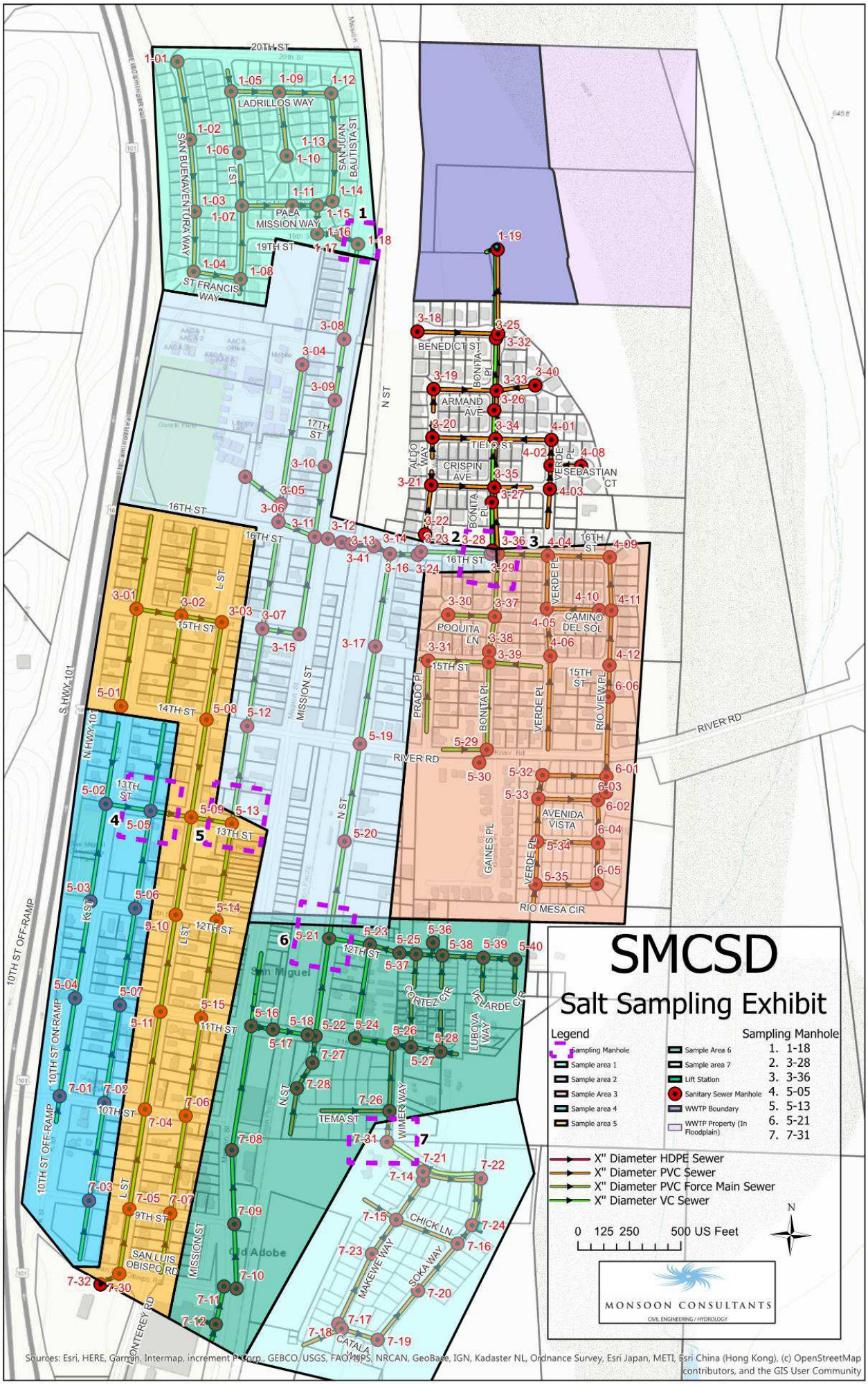
Sample area 1, which is a newer neighborhood, was recorded to have the highest concentrations of both sodium and chloride but comparatively lower concentrations of Sulfate and TDS. Sample area two, which routes sewage from all the other sample areas (except Sample Area 3) had the lowest recorded sodium levels and relatively low concentrations of all constituents. This could be attributed to a significant portion of this area being designated for commercial use as well as the elementary school. In addition, sample area 7 had some of the highest observed constituent levels across the board and is entirely residential. Sample area 6 is substantially lower in all constituents despite area 7 factoring into its routed sewage. This could potentially be attributed to the laundromat (located near the sample manhole 5-21) and other commercial facilities diluting the salt levels in the sewage.

Based on the information available, including the salt surveys performed by FGL Environmental, Monsoon concludes that high salt levels found in the SMCSD could be coming from the residential areas. These high salt levels are then diluted by the commercial facilities located near the center of town as the sewage maneuvers towards the wastewater treatment plant.

ATTACHMENT:

Figure A: SMCSD Salt Sampling Exhibit

Figure A: SMCSD SALT SAMPLING EXHIBIT


SMCSD
Salt Sampling Exhibit
Legend
Sampling Manhole
Sample area 1
Sample area 2
Sample Area 3
Sample area 4
Sample area 5
Sample Area 6
Sample area 7
Lift Station
Sanitary Sewer Manhole
WWTP Boundary
WWTP Property (In Floodplain)
Sampling Manhole
1. 1-18
2. 3-28
3. 3-36
4. 5-05
5. 5-13
6. 5-21
7. 7-31
X" Diameter HDPE Sewer
X" Diameter PVC Sewer
X" Diameter PVC Force Main Sewer
X" Diameter VC Sewer
0 125 250 500 US Feet
N
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20TH ST
LADRILLOS WAY
SAN BUENAVENTURA WAY
SAN JUAN BAUTISTA ST
PALA MISSION WAY
19TH ST
ST FRANCIS WAY
BENEDICT ST
ARMAND AVE
CRISPIN AVE
TIENO ST
ALDO WAY
BONITA PL
VERDE PL
SEBASTIAN CT
N ST
17TH ST
16TH ST
15TH ST
14TH ST
13TH ST
12TH ST
11TH ST
10TH ST
9TH ST
L ST
MISSION ST
POQUITA LN
CAMINO DEL SOL
PRADO PL
RIO VIEW PL
RIVER RD
AVENIDA VISTA
GAINES PL
RIO MESA CIR
CORTEZ CIR
LARDE CIR
LUBOVA WAY
WIMER WAY
TEMA ST
CHICK LN
SOKA WAY
MAKEWE WAY
CATALA WAY
S HWY 101
N HWY 101
10TH ST OFF-RAMP
10TH ST ON-RAMP
SAN LUIS OBISPO RD
MONTEREY RD
San Miguel
Old Adobe
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Appendix H: Groundwater Quality Impact Assessment

MONSOON CONSULTANTS

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(805) 476-6168 www.monsoonconsultants.com

Mr. Kelly Dodds, Director of Utilities
San Miguel Community Services District
1150 Mission Street
San Miguel, CA 93451

June 4, 2020

Re: SMCSD Machado WWTF – Groundwater Quality Impact Assessment

Dear Kelly:

Per your request, Monsoon Consultants (Monsoon) has performed a study to assess the potential impact to groundwater quality that may be occurring from historical and current operations from the existing Machado Wastewater Treatment Facility (WWTF). The subject property includes four (4) separate parcels of land which in total comprise approximately 38.4 acres (APN 021-051-013, 021-051-015, 021-051-016 & 021-051-017). The location of the site is depicted in Figure 1.

SITE HYDROGEOLOGY

Under existing operations, treated effluent from the aerated treatment pond facility is discharged into percolation basins from which the effluent migrates downward into the alluvial deposits that are associated with the Salinas River. There are three percolation basins with a combined surface area of 1.7 acres. The two northernmost basins were re-conditioned in 2008. The third and southern most basin was not re-worked at that time but continues to serve as a percolation basin.

The District's facilities are regulated by Region 3 (Central Coast Region) Regional Water Quality Control Board (Regional Board) Order No. 99-046. Under the terms of the current Order No. 99-046, the effluent quality limits are as follows:

Effluent limitations:	Avg. last 6 samples	Maximum
TDS, mg/L	825	900
Chloride, mg/L	180	200
Sulfate, mg/L	175	200
Sodium, mg/L	150	170

In addition, the Order stipulates that the WWTF discharge shall not cause nitrate concentrations in downgradient groundwater to exceed 5 mg/L (as N).

SITE HYDROGEOLOGY

The WWTP percolation basins are constructed on the alluvial clay and sand deposits that is generally occur along the overbank and floodplain areas of the Salinas River. The alluvial aquifer that exists within these deposits varies in thickness but can reach thicknesses in excess of 100 feet. The alluvial aquifer is highly permeable and can have a large storage capacity. The District does not rely on the alluvial aquifer as a source of potable water supply. There are two (2) existing monitoring wells on the WWTF property that are completed in the alluvial deposits. These monitoring wells are routinely tested for water quality to assess potential impacts to the alluvial aquifer from the WWTF operations. In periods of extended dry weather, the downstream monitoring well often goes dry.

The Paso Robles Formation underlies the alluvial deposits. The Paso Robles formation contains shallow and deep aquifer zones that have been identified at various locations within the Paso Robles Formation. These aquifer zones generally correspond to the sand and gravel zones. Geologic information reported in previous studies suggests that the sand and gravel zones are generally thin, discontinuous, and are usually separated vertically by relatively thick zones of silts and clays. In general, the shallow and deep aquifers occur throughout the Paso Robles Formation, although they may be locally discontinuous or absent in some areas. San Miguel is wholly dependent on the groundwater which is produced from the Paso Robles Formation for its water supply. The District's water supply is pumped from Well Nos. 3 & 4, which are located on the west side of the Salinas River and the SLT Well which is located on the east side of the Salinas River. A Well Location Map is included as Figure 2.

PREVIOUS STUDIES

In 2016, the Wallace Group prepared a report entitled "Evaluation of Wastewater Treatment Facility", in which they evaluated groundwater quality in the alluvial aquifer at the WWTF for

the period between January 2012 and January 2013. Referencing the CCRWQCB Order 99-046, which requires that nitrates shall not increase by more than 5 mg/L (as Nitrate-Nitrogen) in the downgradient well and that TDS levels shall not be significantly increased, the Wallace Group concluded that the effluent disposal operations do have an impact on local groundwater quality. Specifically, they concluded that "*based on their review of the 2012 and 2013 monitoring data, the TDS quality in the effluent and groundwater are directly related to the potable water quality, and effluent TDS quality appears to be in direct correlation with the downstream groundwater quality. However, the effluent TDS concentrations are stable and not increasing over time. Nitrate-Nitrogen concentrations are not in direct relation to potable water quality but are a function of the nitrogen cycle as nitrogen compounds go through the treatment process*".

GROUNDWATER IMPACT ASESSMENT

For the purposes of assessing the potential impact to groundwater quality from the District's WWTF operations, Monsoon reviewed water quality laboratory test results from a total of nine (9) existing wells in the area. The location of these well are depicted in Figure 2. The assessment was performed in two phases. The goal of the first phase was to determine if the groundwater quality in the alluvial deposits underlying the WWTF property had any evidence of impact from the WWTF operations and specifically the infiltration of treated effluent from the percolation basins. To address this question, Monsoon compiled all available water quality test results for the two (2) WWTF monitoring wells and the District's three (3) water supply wells for the period between January 2011 and present. The parameters that were compared included TDS, nitrate, sodium, chloride, and sulfate. The data for each of these parameters are graphically depicted in Figure Nos. 3-7. Based on a review of this data, it is apparent that water quality within the alluvial deposits, that are proximate to the WWTF downgradient monitoring well, are higher in concentration for TDS, nitrate, sodium and chloride, when compared to the District's water supply. The water quality within the alluvial deposits, that are proximate to the WWTF upgradient monitoring well, are higher in concentration for nitrate and chloride, when compared to the District's water supply.

The goal of the second phase was to determine if there is evidence to indicate that any impacts to groundwater quality, that may be attributed to the WWTF operations, have affected the quality of groundwater outside of the limits of the WWTF property. To address this question, Monsoon compiled water quality test results from four (4) offsite wells which are located north of the WWTF. The location of these well are depicted in Figure 2. One of these wells is operated by Gallo as a vineyard irrigation well, which is located downstream along the

Salinas River. A comparison of the water quality data for these wells, with WWTF monitoring wells, did not indicate that any of the offsite wells had any evidence of impact to groundwater quality from the WWTF operations. The results of the comparative water quality assessment of all wells, that were considered, are graphically depicted in Figure Nos. 8-12.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our analysis, it appears that there is a localized impact to the groundwater present in the shallow alluvial aquifer which underlies the WWTF property. The groundwater concentrations are elevated for TDS, nitrate, sodium, and chloride, when compared to the District's water supply. It is further concluded that the concentration of these constituents which are present in the shallow alluvial aquifer exceed the effluent quality limits set forth in the CCRWQCB Order 99-046.

It is recommended that this condition be considered during the planning and design phases of the SMCSD WWTF Renovation and Expansion project and that an alternative to effluent percolation to the Salinas River alluvial deposits be considered as the primary method of effluent disposal.

If you have any questions or require additional information, please do not hesitate to contact me.

MONSOON CONSULTANTS

Blaine T. Reely

Blaine T. Reely, Ph.D., P.E.
President, Monsoon Consultants

June 4, 2020
Date

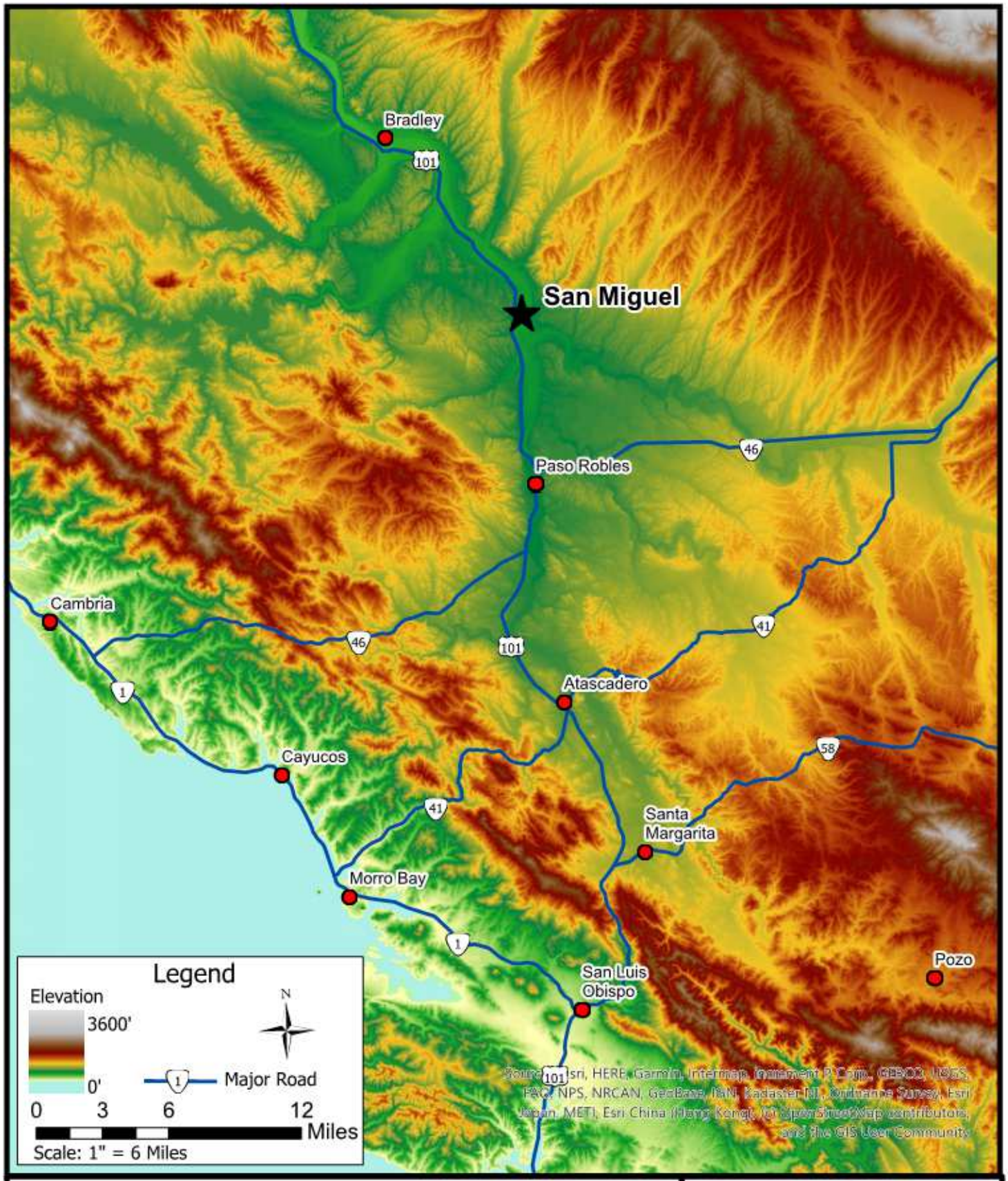


Attachments

Figures

Figure 1: Project Location Map
Figure 2: Well Location Map
Figure 3: WWTF GW Impact Assessment - TDS
Figure 4: WWTF GW Impact Assessment - Nitrate
Figure 5: WWTF GW Impact Assessment - Sodium
Figure 6: WWTF GW Impact Assessment - Chloride
Figure 7: WWTF GW Impact Assessment - Sulfate
Figure 8: Regional GW Impact Assessment - TDS
Figure 9: Regional GW Impact Assessment - Nitrate
Figure 10: Regional GW Impact Assessment - Sodium
Figure 11: Regional GW Impact Assessment - Chloride
Figure 12: Regional GW Impact Assessment - Sulfate

FIGURES

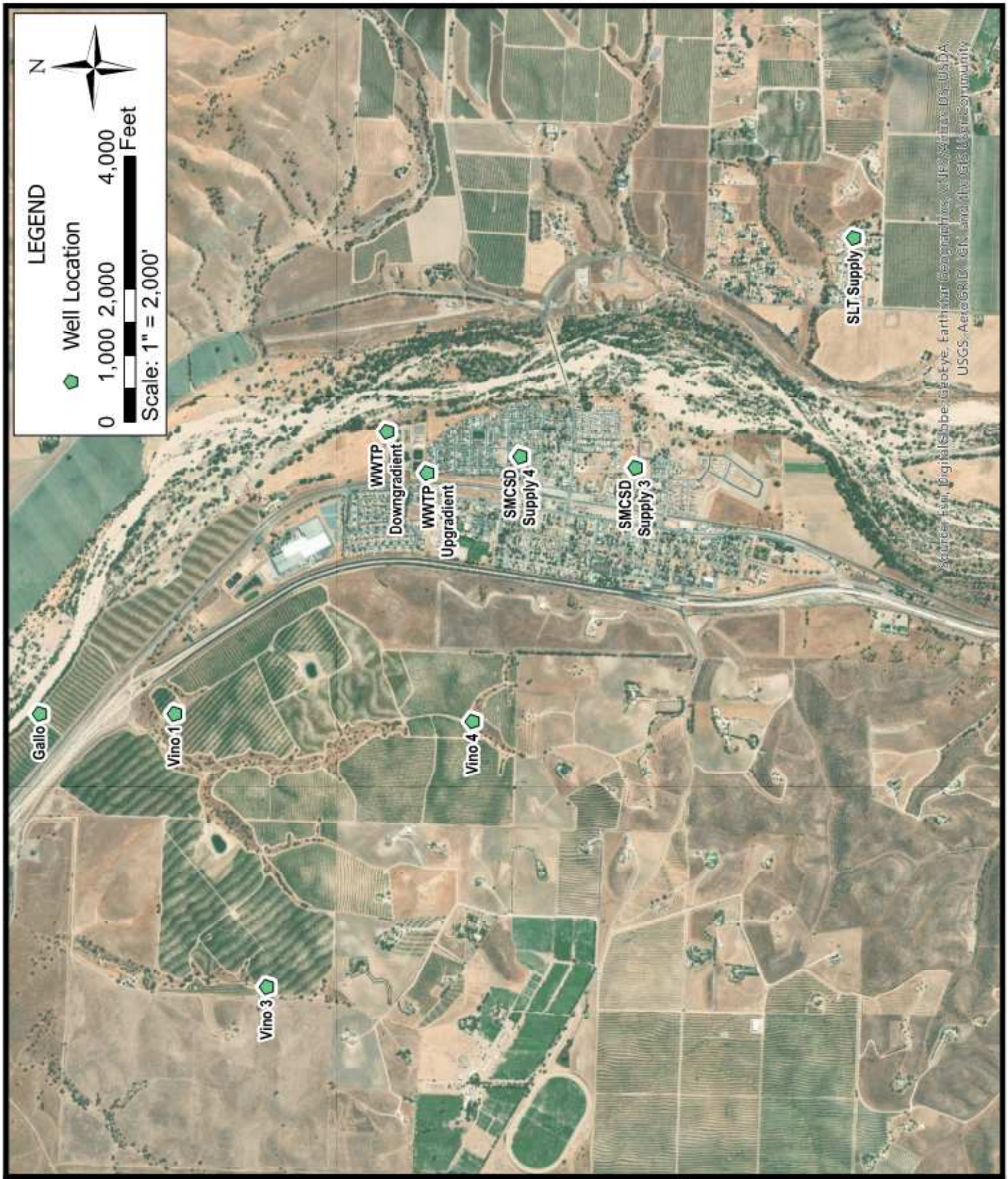


Location Map

2020.05.010 - SMCSD WWTF Groundwater Impact Assessment

San Miguel Community Services District Figure 1

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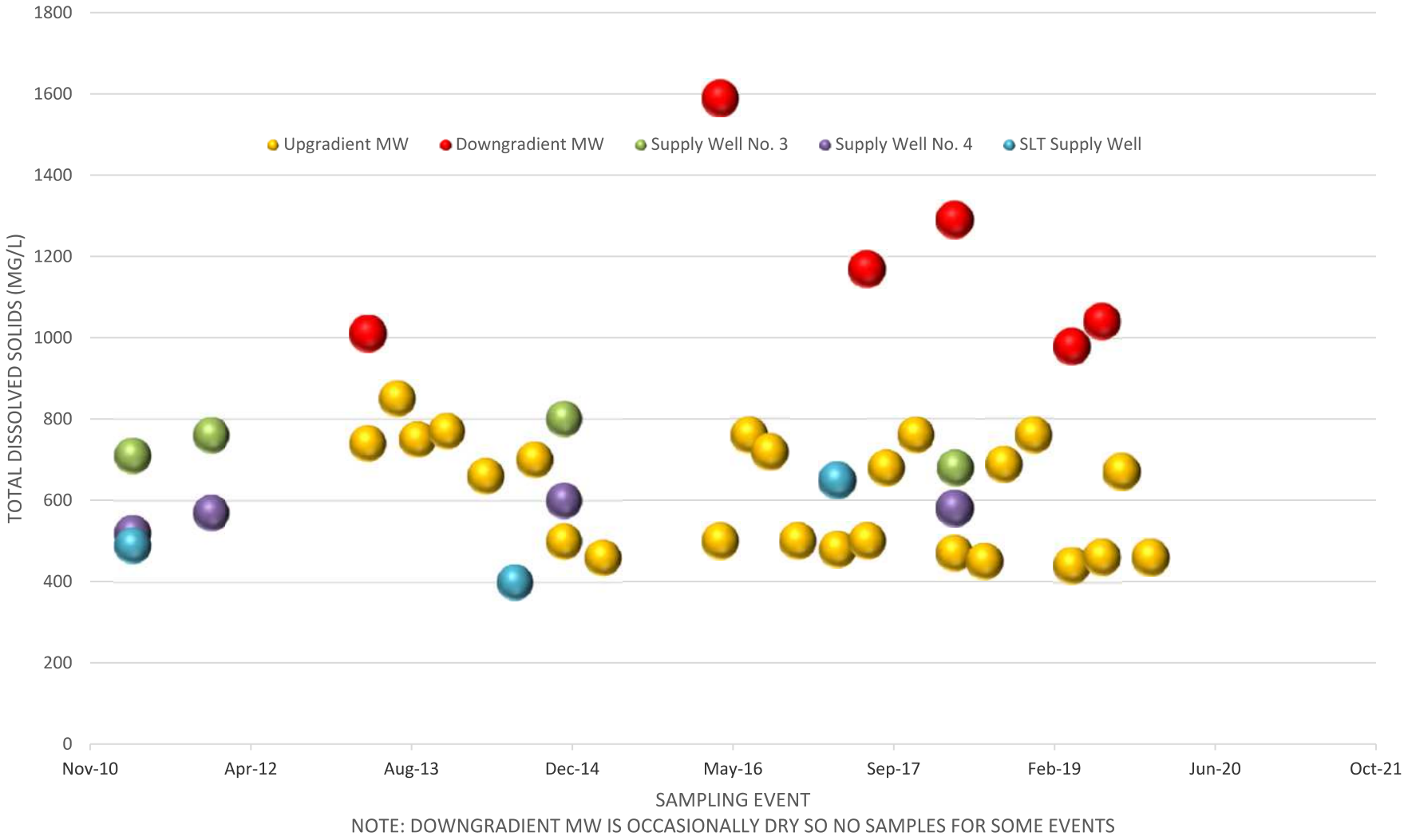
Well Location Map

2020.05.007 - SMCSD New Water Source Investigation

San Miguel Community Services District Figure 2

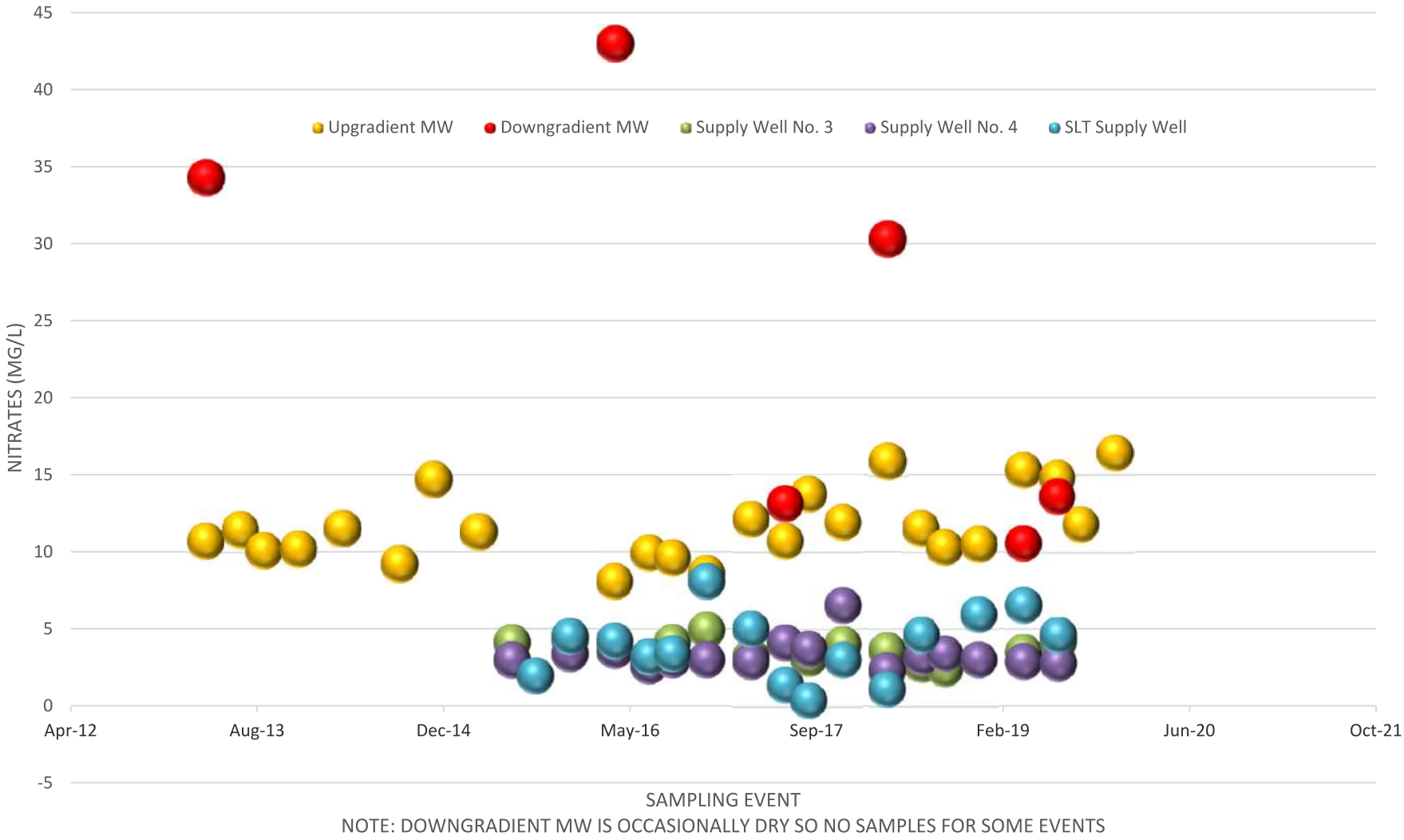
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WWTP GROUNDWATER IMPACT ASSESSMENT
TOTAL DISSOLVED SOLIDS
FIGURE 3



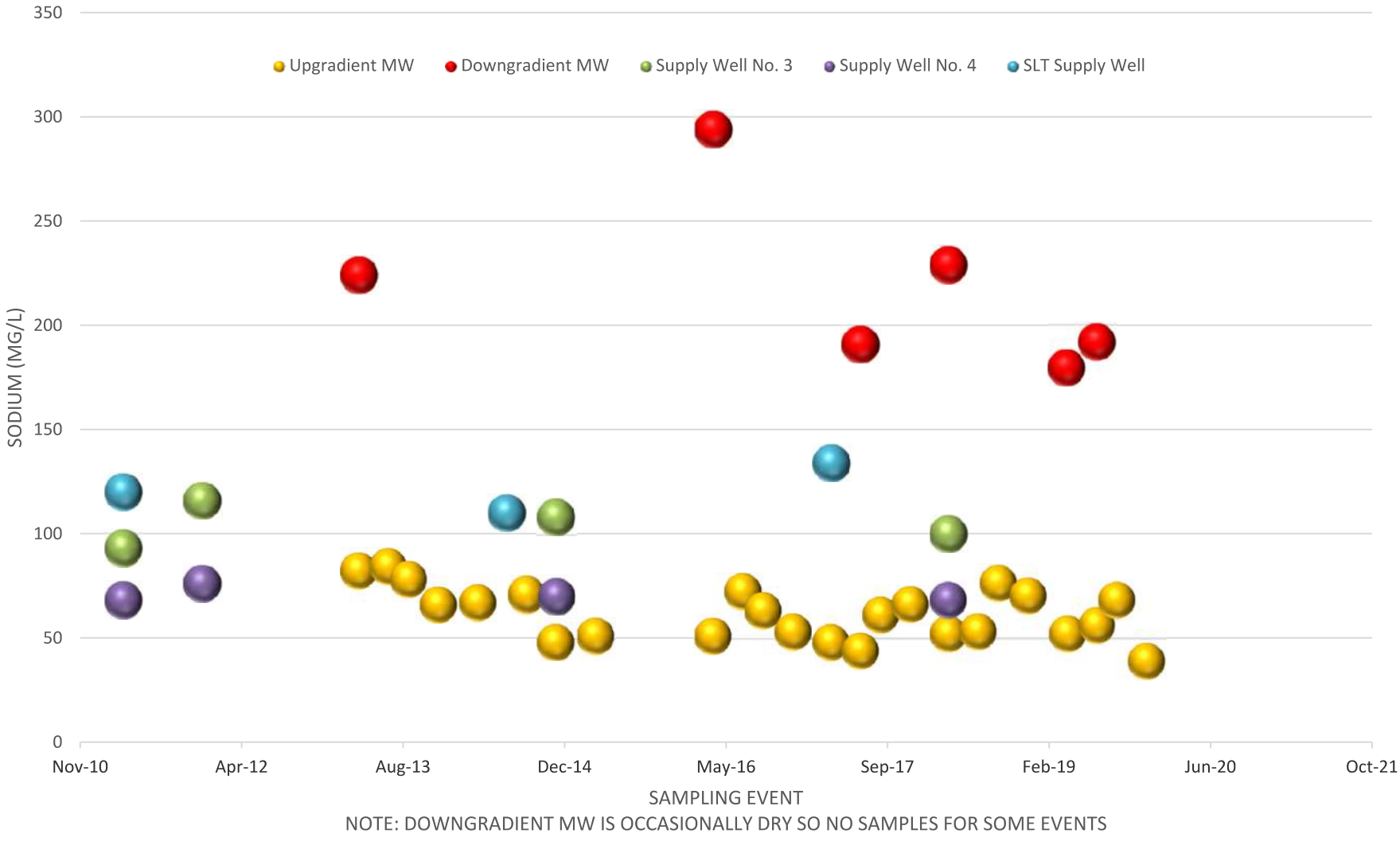
NOTE: DOWNGRADIENT MW IS OCCASIONALLY DRY SO NO SAMPLES FOR SOME EVENTS

WWTP GROUNDWATER IMPACT ASSESSMENT
NITRATE
FIGURE 4



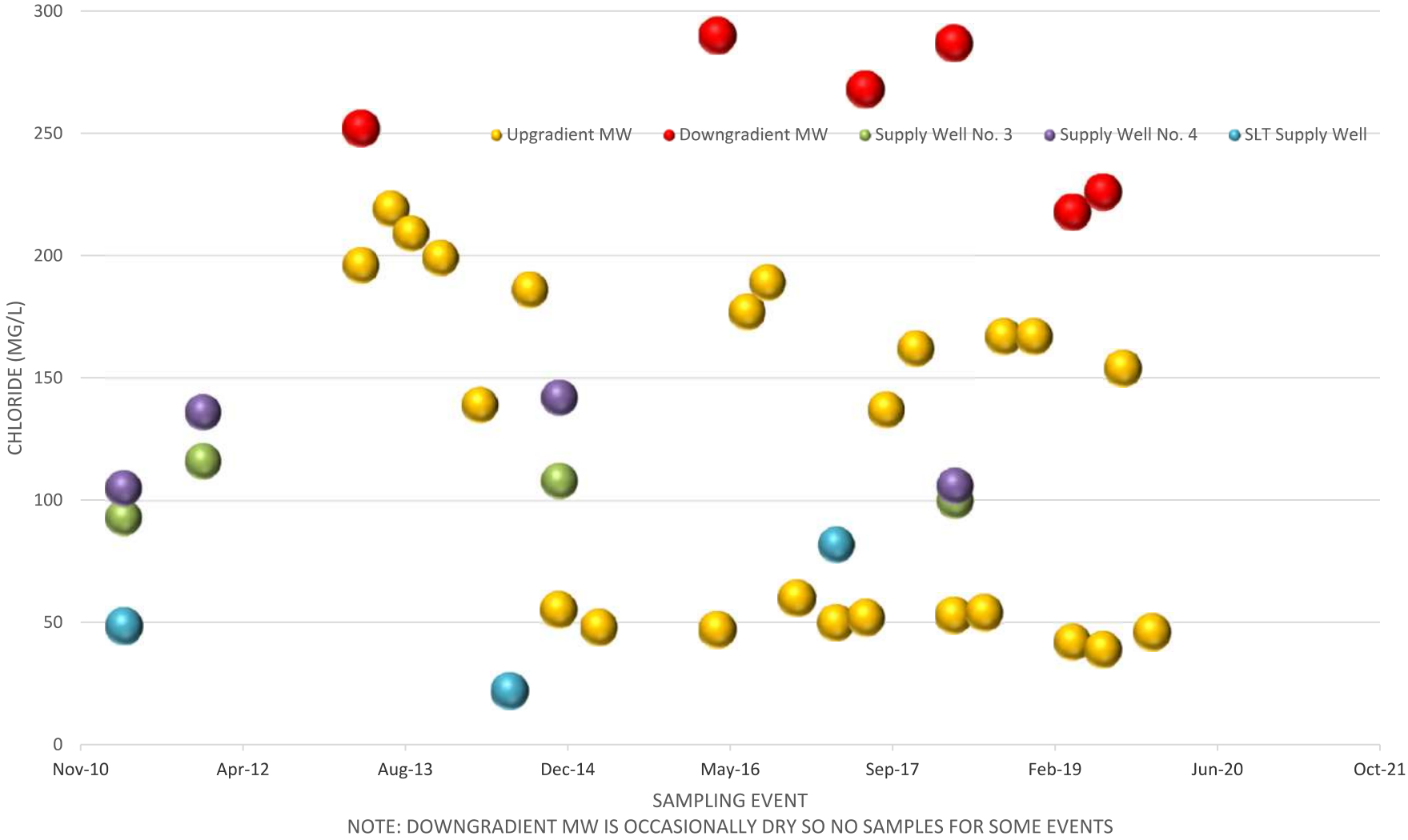
NOTE: DOWNGRADIENT MW IS OCCASIONALLY DRY SO NO SAMPLES FOR SOME EVENTS

WWTP GROUNDWATER IMPACT ASSESSMENT
SODIUM
FIGURE 5



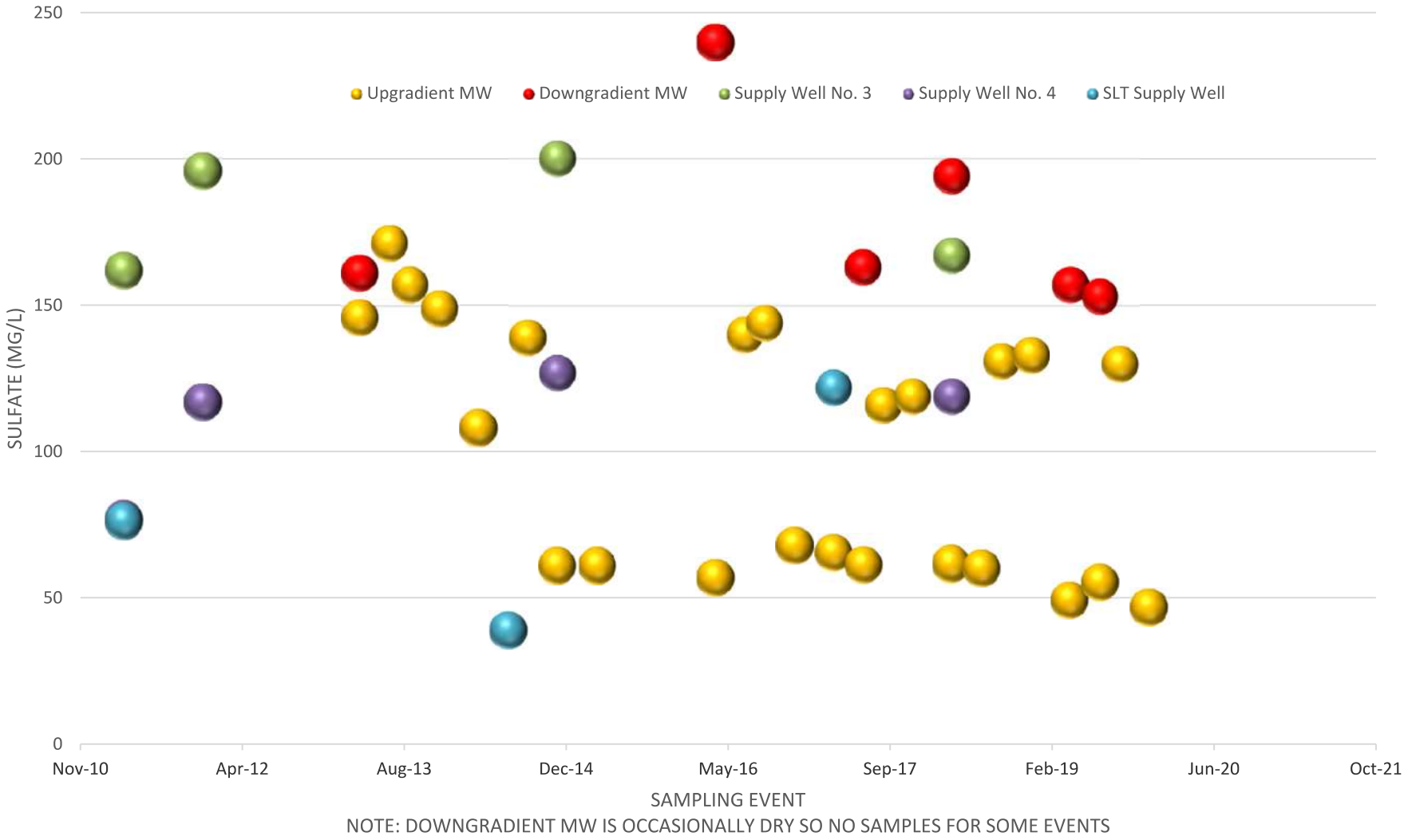
NOTE: DOWNGRADIENT MW IS OCCASIONALLY DRY SO NO SAMPLES FOR SOME EVENTS

WWTP GROUNDWATER IMPACT ASSESSMENT
CHLORIDE
FIGURE 6

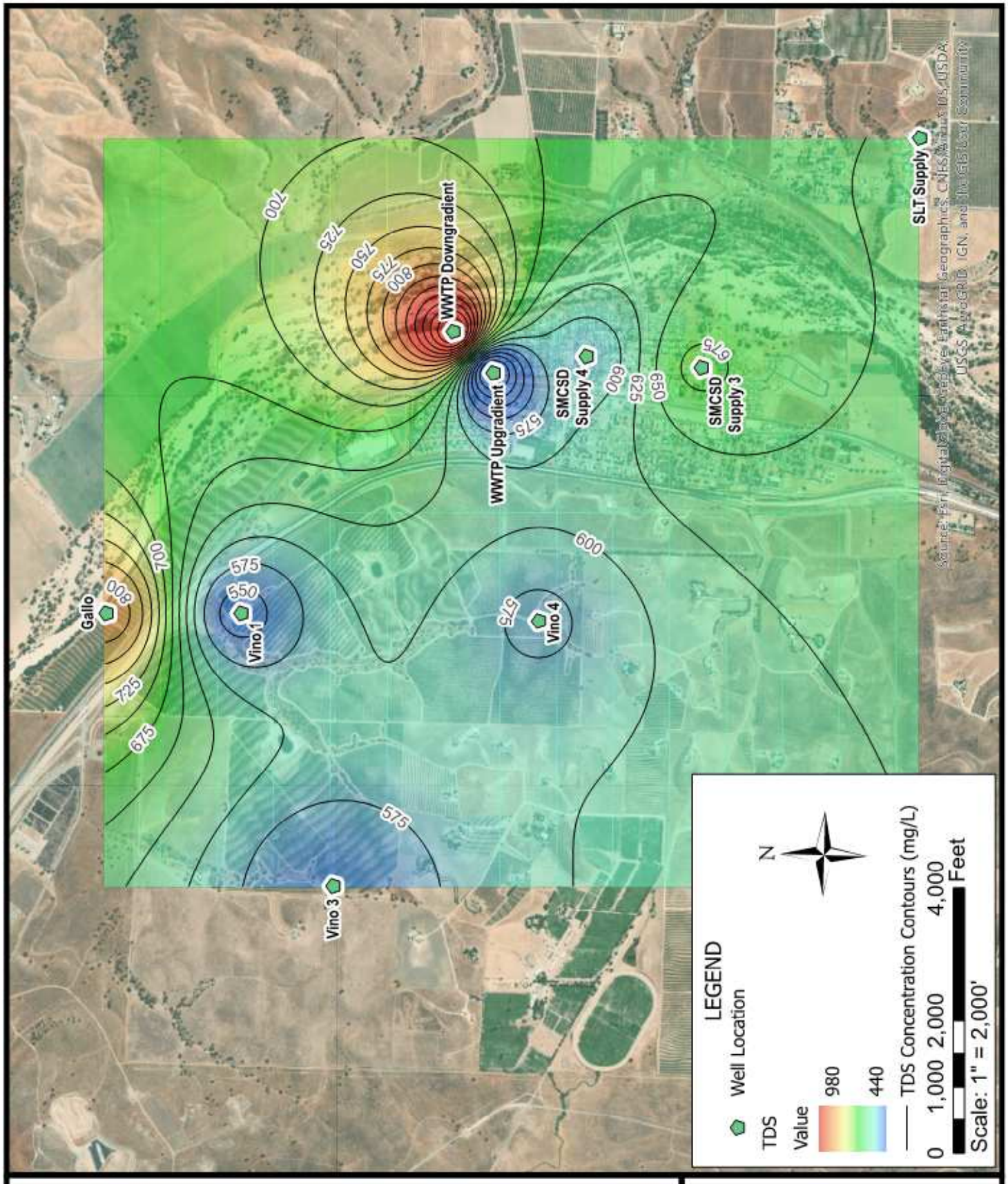


NOTE: DOWNGRADIENT MW IS OCCASIONALLY DRY SO NO SAMPLES FOR SOME EVENTS

WWTP GROUNDWATER IMPACT ASSESSMENT
SULFATE
FIGURE 7



NOTE: DOWNGRADIENT MW IS OCCASIONALLY DRY SO NO SAMPLES FOR SOME EVENTS



Total Dissolved Solids Concentration

2020.05.010 - SMCSD WWTF Groundwater Impact Assessment

San Miguel Community Services District — Figure 8

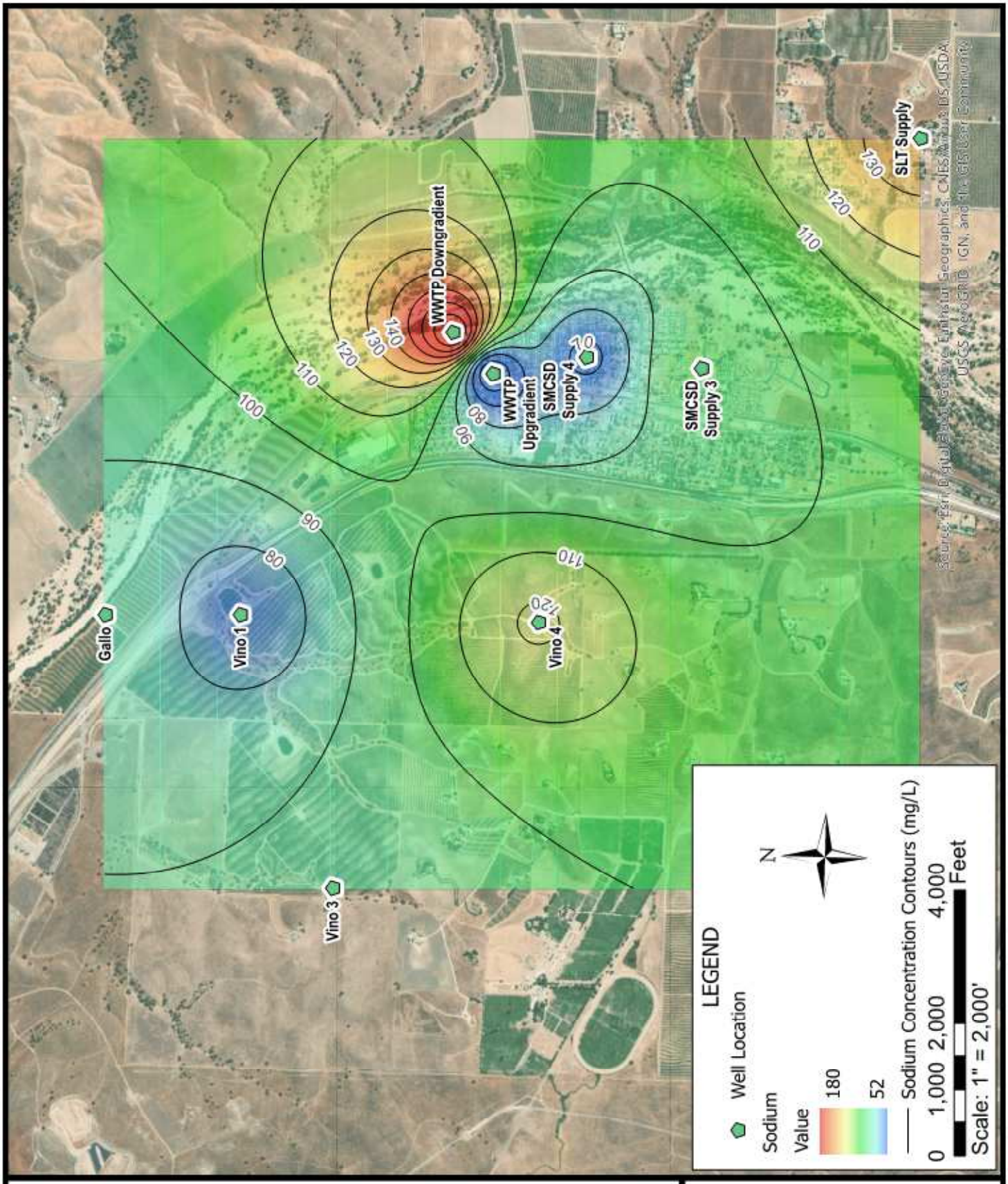
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Nitrate Concentration

2020.05.010 - SMCSD WWTF Groundwater Impact Assessment

San Miguel Community Services District Figure 9

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Sodium Concentration

2020.05.010 - SMCSD WWTF Groundwater Impact Assessment

San Miguel Community Services District — Figure 10

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Chloride Concentration

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San Miguel Community Services District — Figure 11

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Sulfate Concentration

2020.05.010 - SMCSD WWTF Groundwater Impact Assessment

San Miguel Community Services District Figure 12

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Appendix I: CCRWQCB General Waste Discharge Requirements
DRAFT



CENTRAL COAST REGIONAL WATER QUALITY CONTROL BOARD

895 Aerovista Place, Suite 101
San Luis Obispo, California 93401

GENERAL WASTE DISCHARGE REQUIREMENTS
ORDER NO. R3-2020-0020
FOR
DISCHARGES FROM DOMESTIC WASTEWATER SYSTEMS
WITH FLOWS GREATER THAN 100,000 GALLONS PER DAY

Draft
June 18, 2020

CALIFORNIA
Water Boards
STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS

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I. List of Frequently Used Acronyms and Abbreviations

Antidegradation Policy	State Water Board Resolution 68-16
Basin Plan (BP)	Water Quality Control Plan for the Central Coastal Basin
CFR	Code of Federal Regulations
CEQA	California Environmental Quality Act
CWC	California Water Code
DDW	State Water Resources Control Board, Division of Drinking Water
e.g.	Latin *exempli gratia* (for example)
General Permit	General Waste Discharge Requirements Order No. R3-2020-0020
MCL	Maximum contaminant level
mg/L	Milligrams per liter
MRP	Monitoring and Reporting Program
N	Nitrogen
NPDES	National Pollutant Discharge Elimination System
Central Coast Water Board	Central Coast Regional Water Quality Control Board
Recycled Water Policy	State Water Board's Policy for Water Quality Control for Recycled Water
RV	Recreational vehicle
State Water Board	State Water Resources Control Board
title 22	California Code of Regulations, title 22, division 4, chapter 3
USEPA	United States Environmental Protection Agency
WDRs	Waste Discharge Requirements
Wastewater System	Wastewater treatment and disposal system

II. Findings

The Central Coast Regional Water Quality Control Board (Central Coast Water Board) finds that:

A. Background Information

1. California Water Code section 13260(a) requires that any person discharging waste or proposing to discharge waste within any region, other than to a community sewer plant, that could affect the quality of the waters of the state, file a report of waste discharge to obtain coverage under waste discharge requirements (WDRs) or a waiver of WDRs. "Waste" is defined in California Water Code section 13050(d). A report of waste discharge is also referred to as an application.

2. Discharges to land from domestic wastewater treatment and disposal systems (Wastewater Systems) have certain common characteristics, such as similar constituents of concern, concentrations of constituents of concern, disposal techniques, flow ranges, and they use the same or similar treatment methods. These types of discharges are appropriately regulated under a general waste

discharge requirements permit[1]. Currently many of the Wastewater Systems in the central coast region are regulated through individual permits. Once effective, this General Waste Discharge Requirements Order No. R3-2020-0020 for Discharges from Domestic Wastewater Systems with Flows Greater Than 100,000 Gallons per Day (General Permit) will allow for enrollment of domestic Wastewater Systems and reduce the need for individual permits.

3. For the purposes of this General Permit, the term "Wastewater Systems" shall mean the collection system, treatment equipment, pumping stations, treatment ponds, biological treatment systems, chemical treatment systems, clarifiers, sand/media filters, disinfection systems, recycled water systems (including distribution systems), storage ponds, land application areas, disposal ponds, and other systems associated with the collection, treatment, storage, and disposal of wastewater.
4. Wastewater Systems with monthly average flow rates[2] of more than 100,000 gallons per day that discharge to land are eligible for coverage under this General Permit. Wastewater Systems are typically located at commercial or residential subdivisions, communities, cities, and correctional facilities. An owner and/or operator of a Wastewater System(s) is referred to as a Discharger(s) in this General Permit.
5. Wastewater Systems with monthly average flow rates of 100,000 gallons per day or less may be regulated by State Water Resources Control Board (State Water Board) Order WQ 2014-0153-DWQ. Wastewater Systems regulated by Order WQ 2014-0153-DWQ may continue that coverage unless otherwise directed by the Central Coast Water Board Executive Officer.
6. Domestic wastewater treatment may include ponds (e.g., facultative, aerobic, anaerobic), constructed wetlands, aerobic treatment systems (e.g., activated sludge, sequencing batch reactors, extended aeration, membrane biological reactors, etc.), biofiltration (e.g., attached growth system, trickling filters, etc.), filtration, clarification, settling, and disinfection systems. The level to which wastewater is treated must be based upon the receiving water quality at the wastewater disposal location.
7. Disposal/dispersal options for treated effluent may include land application, disposal ponds (evaporation/percolation ponds), spreading basins, non-potable water reuse[3] or another engineered alternative approved by the Executive Officer.
8. This General Permit allows the production and use of recycled water (as defined in California Water Code section 13050(n)) and requires all recycled water use to comply with the applicable requirements described in California Code of Regulations, title 22, division 4, chapter 3, (title 22). Compliance with title 22 water recycling criteria and title 17 sanitation requirements will be determined by the

[1] The terms "permit" and "waste discharge requirements" are used in this document and are referring to a set of requirements for a permitted discharge of wastewater.
[2] See Attachment A.
[3] Water reuse refers to water reclamation and water recycling for non-potable uses. See Attachment A.

State Water Board Division of Drinking Water (DDW), who are responsible for reviewing and approving title 22 Engineering Reports. This General Permit also allows for the application of treated wastewater to land that does not meet the definition of beneficial use[4] and is therefore not subject to the title 22 requirements.

9. The discussion in this General Permit of treatment, disposal/dispersal, and water reuse is not intended to limit the selection of alternatives available to the wastewater system designer.

10. This General Permit implements the Water Quality Control Plan for the Central Coastal Basin (Basin Plan)[5] and therefore requires Dischargers to comply with all applicable requirements in the Basin Plan, including any prohibitions and water quality objectives, governing the discharge of treated wastewater.

11. Wastewater and treated wastewater quality vary depending upon source water quality, the activities generating the wastewater, water conservation efforts, inflow and infiltration, and treatment technology. Some examples of typical domestic wastewater and treated wastewater characteristics are presented in Table 1. Peer reviewed published wastewater books and/or United States Environmental Protection Agency (USEPA) wastewater publications may also be used to characterize wastewater characteristics.

Table 1: Summary of Domestic Wastewater Characteristics

Constituent	Units [1]	Typical Domestic Wastewater	Septic Tank Influent	Septic Tank Effluent	Secondary Treatment Effluent
Biochemical Oxygen Demand	mg/L	200-290 [2]	155-286 [3]	140-200 [4]	30-45 [5]
Total Suspended Solids	mg/L	200-290 [2]	155-330 [3]	50-100 [4]	30-45 [5]
Ammonia (as N)	mg/L	6-18 [2]	4-13 [3]	40-75 [8]	0-65 [6]
Nitrite and Nitrate (as N)	mg/L	<1 [2]	<1 [3]	<1 [8]	0-65 [6]
Total Nitrogen	mg/L	35-100 [2]	26-75 [3]	40-100 [4]	5-35 [7]
Total Phosphorus (as P)	mg/L	6-12 [2]	6-12 [3]	5-15 [4]	0-10 [7]

[1] mg/L denotes milligrams per liter
[2] Table 4-3, USEPA Wastewater Treatment/Disposal for Small Communities, Manual, September 1992, EPA/625/R-92/005.
[3] Table 3-7, USEPA Onsite Wastewater Treatment System Manual, June 2005, EPA/625/R-00/008.
[4] Table 3-19, USEPA Onsite Wastewater Treatment Systems Manual, June 2005, EPA/625/R-00/008.
[5] 40 CFR section 133.102.
[6] Value highly variable depending upon treatment technology.

[4] See Attachment A.
[5] Please refer to the current Water Quality Control Plan for the Central Coastal Basin adopted by the Central Coast Water Board.
https://www.waterboards.ca.gov/centralcoast/publications_forms/publications/basin_plan/

[7] USEPA Case Studies on Implementing Low-Cost Modifications to Improve Nutrient Reduction at Wastewater Treatment Plants. https://www.epa.gov/nutrient-policy-data/case-studies-implementing-low-cost-modifications-improve-nutrient-reduction.

[8] Insignificant change expected in treatment.

12. Discharges from holding tanks (e.g., recreation vehicles [RV], portable toilets, airplane wastewater, etc.) may contain chemicals that can pollute water. Some commercially available products used to control holding tank/portable toilet odors may contain harmful chemicals such as formaldehyde, zinc, or phenol. The harmful chemicals can kill the bacteria in the Wastewater System and cause wastewater to be inadequately treated. Inadequately treated wastewater may cause additional problems such as disposal system failure, surfacing wastewater, and potential exposure and health risks.

13. The USEPA recommends *Escherichia coli* (E. coli) and enterococci bacteria, which exist in fecal material from humans and other warm-blooded animals, as the best indicators of health risk from water contact[6]. Because both bacteria are present in domestic wastewater, there is no need to monitor separately for them in wastewater effluent. The effectiveness of disinfection procedures is similar for both bacteria, therefore total coliform[7], which is a less expensive analysis, is appropriate to determine if wastewater effluent is effectively disinfected for bacteria. Total coliform monitoring is also required for recycled water use consistent with title 22.

14. Beneficial uses for groundwater are determined by the Central Coast Water Board and are listed in the Basin Plan. Beneficial uses for groundwater are municipal supply (MUN), industrial service supply (IND), and agricultural supply (AGR). Some beneficial uses only apply to certain geographic areas within the central coast region.

15. The Basin Plan establishes water quality objectives to protect beneficial uses. The objectives may be narrative, numerical, or both. This General Permit requires the Discharger to comply with those objectives in receiving waters.

B. Treated Wastewater Disposal/Dispersal

1. Treated wastewater disposal/dispersal occurs by different methods. Treated wastewater is often percolated from ponds, percolated from spreading basins, evaporated from ponds, or applied to the ground surface by spray, flood, or drip methods. The disposal method will depend upon the amount of wastewater generated, the quality of the wastewater, land availability, site characteristics, and the receiving water.

    i. Untreated wastewater discharged to an unlined pond for treatment, storage, or disposal (e.g., percolation pond) has the potential to degrade water quality to an unacceptable extent or result in nuisance odors.

    Reducing the volume of wastewater percolated from a treatment, storage, or evaporation pond by lining the pond with a synthetic or low permeability liner

[6] USEPA Internet page accessed June 10, 2014 http://water.epa.gov/type/rsl/monitoring/vms511.cfm

[7] *Escherichia coli* is a subset of fecal coliforms and fecal coliforms are a subset of total coliforms.

can control the percolation rate and reduce the potential threat to water quality from the percolated wastewater.

Discharging high quality, treated wastewater to an adequately designed percolation pond (e.g., adequately sized with appropriate percolation rates and sufficient separation to groundwater) will reduce the potential threat to surface water and groundwater quality from the percolated wastewater.

Overloading a wastewater pond with biochemical oxygen demand constituents can result in nuisance odor generation. Source control of biochemical oxygen demand constituents, additional pretreatment prior to discharge to the pond, or mechanical aeration of wastewater in the pond are typically used to prevent a pond from generating nuisance odors.

Burrowing animals can result in rapid failure of a containment berm. The population of such animals should be promptly controlled and repairs to the containment completed as soon as possible.

ii. When land application of treated wastewater is selected as a disposal method, adequate acreage must be available to allow application rates that will not create nuisance conditions (e.g., vectors, nuisance odors, offsite discharge, ponding, etc.), degrade water quality, or impact public health.

Crops are often grown and harvested from a land application area to take up wastewater constituents such as nitrogen and dissolved solids, as well as maintain roots which promote wastewater infiltration rates.

Hydraulic loading of a land application area must be controlled to prevent offsite wastewater discharge and impacts to either surface or groundwater.

2. Wastewater discharged to land near a surface waterbody has the potential to impact surface water quality via runoff, surfacing effluent or underflow to a gaining stream. Additional monitoring may be required by the Central Coast Water Board Executive Officer to determine if the discharge has degraded surface water quality.

3. Setbacks from wastewater treatment areas, disposal/dispersal areas, and/or land application areas from domestic wells, flowing and/or ephemeral streams, lakes/reservoirs, and property lines are required in this General Permit. Setbacks are included as a means of reducing potential impacts to water quality associated with wastewater constituents. Setbacks provide attenuation of wastewater constituents through physical, chemical, and biological processes. The setbacks required in this General Permit are based on the title 22 water recycling criteria, the California Well Standards, the California Plumbing Code, and commonly imposed setbacks by regulatory agencies.

C. Recycled Water

1. Use of recycled water in lieu of potable water is encouraged by the State Water Board. The State Water Board's Water Quality Control Policy for Recycled Water (Recycled Water Policy) states the following goals (in part):

i. Increase the use of recycled water.

ii. Reuse dry weather direct discharges of treated wastewater to enclosed bays, estuaries and coastal lagoons, and ocean waters that can be viably put to a beneficial use.

iii. Maximize the use of recycled water in areas where groundwater supplies are in a state of overdraft, to the extent that downstream water rights, instream flow requirements, and public trust resources are protected

2. The Recycled Water Policy calls on local water and wastewater entities together with other stakeholders who contribute salt and nutrients to a groundwater basin or sub-area, to fund and develop salt and nutrient management plans to comprehensively address all sources of salts and nutrients. The comprehensive salt and nutrient management plans should be implemented to manage salts and nutrients consistent with the Recycled Water Policy. It is the intent of the Recycled Water Policy that every groundwater basin/sub-basin in California ultimately has a salt and nutrient management plan. One way to address salt and nutrient issues is through the development of regional or sub-regional salt and nutrient management plans. Dischargers may be directed to perform or participate in salt and nutrient management plan planning activities as described in the Provisions of this General Permit.

D. Pretreatment Program for Publicly Owned Treatment Works

1. Under California Code of Regulations, title 23, section 2233, subdivision (a), WDRs for publicly owned treatment works treating or designed to treat an average dry weather flow of five million gallons per day or more of community wastewater must include provisions that that the discharger must have and enforce an adequate pretreatment program approved by the appropriate regional board. A regional board may determine that it is appropriate to require a local pretreatment program for publicly owned treatment works treating or designed to treat an average dry weather flow of less than five million gallons per day. A pretreatment program is a regulatory program administered by the discharger that implements national pretreatment standards. USEPA in accordance with section 307(b) and (c) of the Clean Water Act promulgate these standards. This General Permit incorporates General Pretreatment Regulations of Codified Federal Regulation, Code of Federal Regulations, title 40, part 403, as reference.

2. Pretreatment programs are necessary for some facilities to prevent the introduction of pollutants which will interfere with the operation of the treatment works, pass through the treatment system, reduce opportunities to recycle and reuse domestic wastewater and sludge, or expose publicly owned treatment works employees to hazardous chemicals.

E. Antidegradation Analysis

1. State Water Board Resolution No. 68-16, the Statement of Policy with Respect to Maintaining High Quality of Waters in California (Antidegradation Policy) requires the following:

i. Higher quality water will be maintained until it has been demonstrated to the state that any change will be consistent with the maximum benefit to the people of the state, will not unreasonably affect present and anticipated beneficial use

of the water, and will not result in water quality less than that prescribed in the policies.

ii. Any activity that produces a waste and discharges to existing high quality waters will be required to meet WDRs that will result in the best practicable treatment or control of the discharge necessary to assure pollution or nuisance will not occur, and the highest water quality consistent with the maximum benefit to the people of the state will be maintained.

2. The Antidegradation Policy requires maintenance of high quality of waters of the state unless limited degradation is consistent with the maximum benefit to the people of the state. When issuing a notice of applicability under this General Permit, the Central Coast Water Board Executive Officer must assure that Dischargers implement best practicable treatment or control as necessary to maintain the highest water quality consistent with the maximum benefit to the people of the state.

3. This General Permit allows discharges to numerous groundwater basins/sub-areas, each with its own chemical characteristics. To the extent a discharge covered under this General Permit may be to high quality waters, this General Permit authorizes limited degradation consistent with the Antidegradation Policy as described in the findings below.

4. This General Permit authorizes discharges of domestic wastewater from Wastewater Systems, which are centralized facilities. Limited degradation of groundwater by some waste constituents associated with domestic wastewater effluent, after effective source control, treatment, and control measures are implemented, pursuant to this General Permit, is consistent with the maximum benefit to the people of the state because the technology, energy use, water recycling, and waste management at centralized Wastewater Systems are far more efficient than at individual wastewater systems that would otherwise be used to treat domestic wastewater. The impacts of centralized Wastewater Systems on water quality are typically less than the cumulative impacts from individual wastewater systems, which tend to be concentrated by location.

5. Constituents of concern that have the potential to degrade groundwater include salts, nutrients, chemicals, and pathogens. In addition, excessive biochemical oxygen demand loading of treatment systems (e.g., pond systems, activated sludge systems, etc.) or land application areas may result in nuisance odors or anaerobic conditions, which are not favorable biological treatment conditions.

6. This General Permit includes effluent limitations and a process to determine how to apply these limits. Implementation of the applicable effluent limitations will result in the best practicable treatment or control for the wastewater constituents, and corresponding monitoring requirements specified in this General Permit will ensure the best practicable treatment or control is effective and confirms that water quality will be maintained at a level that is protective of beneficial uses.

7. This General Permit also includes technology-based effluent limitations for biochemical oxygen demand and total suspended solids to create conditions that support nitrogen reduction and the protection of beneficial uses.

8. Compliance with the General Permit, the notice of applicability, DDW requirements, and any mitigation measures will ensure compliance with the Basin Plan necessary to assure pollution or nuisance will not occur.

F. Title 27 Exemption

1. The wastewater treatment, storage, and disposal activities regulated by this General Permit are exempt from the requirements of *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste* in California Code of Regulations, title 27, section 20005, et seq , which allows a conditional exemption from some or all of the provisions of title 27. The following exemptions apply:

    i. California Code of Regulations, title 27, section 20090(a), which exempts discharges of domestic sewage or treated effluent which are regulated by WDRs (e.g., this General Permit) issued pursuant to California Code of Regulations, title 23, division 3, chapter 9, or for which WDRs have been waived, and which are consistent with applicable water quality objectives, and treatment or storage facilities associated with municipal wastewater treatment plants, provided that residual sludge or solid waste from wastewater systems must be discharged only in accordance with the applicable State Water Board promulgated provisions of this division (California Code of Regulations, title 27, section 20090(a)).

    ii. California Code of Regulations, title 27, section 20090(b), which exempts discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or applied to the ground surface by spray, flood, or drip methods if the following conditions are met:

        a. The Central Coast Water Board has issued WDRs, reclamation requirements, or waived such issuance;

        b. The discharge is in compliance with the applicable water quality control plan; and

        c. The wastewater does not need to be managed according to California Code of Regulations, title 22, division 4.5, chapter 11, as a hazardous waste.

    iii. California Code of Regulations, title 27, section 20090(i), which exempts waste treatment in fully enclosed facilities, such as tanks, or in concrete lined facilities of limited areal extent, such as oil water separators designed, constructed, and operated according to American Petroleum Institute specifications.

G. California Environmental Quality Act

1. This General Permit is intended to cover both new and existing Wastewater Systems. Existing Wastewater Systems are those that were under construction or operating prior to the adoption date of this General Permit.

    i. The adoption of this General Permit for existing domestic Wastewater Systems is categorically exempt from the California Environmental Quality Act (CEQA) pursuant to California Code of Regulations, title 14, section 15301 (ongoing or existing projects), section 15302 (replacement or reconstruction

of existing utility systems), and section 15303 (new construction or conversion of structures).

ii. Discharges from new domestic Wastewater Systems and expanded domestic Wastewater Systems may not be covered by this General Permit until after CEQA requirements have been satisfied. New or expanded systems are subject to further CEQA evaluation on a case-by-case basis by local agencies performing CEQA evaluations of proposed projects. The potential significant environmental impacts from discharges of domestic wastewater from new and expanded Wastewater Systems may be mitigated to less than significant impacts by compliance with this General Permit, the notice of applicability, and any mitigation measures adopted by local agencies.

H. Monitoring and Reporting Program

1. A general Monitoring and Reporting Program (MRP) is included as Attachment D and includes monitoring for Wastewater Systems, water supply, influent, effluent, recreational vehicle discharge, recycled water, land application area, solids disposal, groundwater and surface water. Required reporting includes electronic submittal of technical, quarterly, and annual reports.
2. The Central Coast Water Board is transitioning to using the GeoTracker database for waste discharge requirement MRPs. GeoTracker is the State Water Board's Internet-accessible database system used by the State Water Board, regional boards, and local agencies to track and archive compliance data from authorized or unauthorized discharges of waste to land, or unauthorized releases of hazardous substances from underground storage tanks. This system consists of a relational database, on-line compliance reporting features, a geographical information system (GIS) interface and other features that are utilized by the State Water Board, regional boards, local agencies, regulated industry, and the public to input, manage, or access compliance and regulatory tracking data.
3. California Water Code section 13267(b)(1) states:

   In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region … shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports and shall identify the evidence that supports requiring that person to provide the reports.

4. California Water Code section 13268 states:

   (a)(1) Any person failing or refusing to furnish technical or monitoring program reports as required by subdivision (b) of section 13267, or failing or refusing to furnish a statement of compliance as required by subdivision (b) of section 13399.2, or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in accordance with subdivision (b).

(b)(1) Civil liability may be administratively imposed by a regional board in accordance with article 2.5 (commencing with section 13323) of chapter 5 for a violation of subdivision (a) in an amount which shall not exceed one thousand dollars ($1,000) for each day in which the violation occurs.

5. The technical and monitoring reports required by this General Permit, the notice of applicability, and the attached MRP are necessary to ensure compliance with this General Permit. The burden, including costs, of providing the technical reports required by this General Permit bears a reasonable relationship to the need for the reports and the benefits to be obtained from the reports and is consistent with the best interest of the state in maintaining water quality.
6. Failing to furnish the reports by the due date or falsifying information in the reports, are misdemeanors that may result in assessment of civil liabilities against the Discharger.
7. The Central Coast Water Board authorizes the Executive Officer to modify the attached MRP and to issue facility-specific MRPs to Dischargers tailored to the individual facility treatment and disposal systems consistent with the attached MRP framework and the Discharger's notice of applicability.

I. Other Regulatory Requirements

1. Dischargers that meet the criteria for coverage under State Water Board Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, or updated order, are required to enroll in State Water Board Order No. 2006-0003-DWQ.
2. California Water Code section 13263(a) requires the Central Coast Water Board to consider the factors in section 13241 when adopting WDRs. Consistent with California Water Code section 13241, the Central Coast Water Board, in establishing the requirements contained in this General Permit, considered factors including, but not limited to, the following:
    i. Past, present, and probable future beneficial uses of water.
    ii. Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.
    iii. Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.
    iv. Economic considerations.
    v. The need for developing housing within the region(s).
    vi. The need to develop and use recycled water.
    vii. The need to support the human right to clean water.
    viii. The need to implement management strategies that adapt to climate change.
    ix. The need to support disadvantaged communities' access to wastewater treatment and disposal.
3. Human Right to Water - California Water Code section 106.3, subdivision (a) provides that "that every human being has the right to safe, clean, affordable, and

accessible water adequate for human consumption, cooking, and sanitation purposes."

Central Coast Water Board Resolution No. R3-2017-0004 recognizes the human right to water as a core value, affirms the realization of the human right to water and protecting human health as one of the Central Coast Water Board's top priorities, and also directs staff to conduct specific activities and prioritize regulatory programs to prevent and address discharges that could threaten human health by causing or contributing to pollution or contamination of drinking water sources.

This General Permit incorporates the human right to water resolution by containing requirements that will protect the drinking water beneficial use.

4. Climate Change – This General Permit addresses the threat of climate change, sea-level rise, flooding, and fire by including provisions that require the Dischargers to assess and implement mitigation and adaptation strategies as necessary (section VI.A.3).

   To address the threat of fire, this General Permit requires the submission of reports and planning documents consistent with the MRP that assess the potential risk to fire.

   The Discharger must submit a Climate Change Adaptation Plan to the Central Coast Water Board for Executive Officer review and approval. This plan must provide a clear, long-term plan for addressing flooding, fire, and other local hazards, as well as resource impacts, to public and private infrastructure within the Discharger's current service area and areas projected for annexation.

5. Disadvantaged Community Status – A disadvantaged community is a community with an annual median household income that is less than 80 percent of the statewide annual median household income. Data from the US Census American Community Survey Data from 2013 to 2017 identifies 12 cities and 36 Specific Census Tract or Block Group areas designated as disadvantaged communities in the central coast region.

6. California Water Code section 13263(i) states, *the state board or regional board may prescribe general waste discharge requirements for a category of discharges if the state board or that regional board finds or determines that all the following criteria apply to the discharges in that category:*

   i. *The discharges are produced by the same or similar operations.*

   ii. *The discharges involve the same or similar types of waste.*

   iii. *The discharges require the same or similar treatment standards.*

   iv. *The discharges are more appropriately regulated under general waste discharge requirements than individual waste discharge requirements.*

   Wastewater Systems that will be regulated under this General Permit are consistent with the criteria listed above, and therefore, a General Permit is appropriate. All discharges regulated under this General Permit will be from similar operations and will be consistent with the description of domestic wastewater treatment as defined in section II.A.6. Dischargers will use similar treatment and disposal methods (e.g., screening, settling, biological/chemical treatment,

clarification, and application to land). Individual WDRs are not necessary because the discharges are similar and discharge requirements would be similar if individual WDRs were issued.

7. The biochemical oxygen demand and total suspended solids effluent limitations contained in this General Permit are technology-based. USEPA has developed technology-based effluent limits for secondary treatment for use in National Pollutant Discharge Elimination System (NPDES) permits. However, pond treatment systems often cannot comply with the limits that apply to activated sludge treatment systems due to algae growth in the pond. In response, USEPA developed an equivalent to secondary treatment definition for alternative biological treatment technologies such as a trickling filter or wastewater treatment pond (Code of Federal Regulations, title 40, section 133.105). Although this General Permit only authorizes discharges to land, some of the secondary treatment standards are appropriate to demonstrate that wastewater is adequately treated.
8. Discharge to the waters of the state is a privilege, not a right, and authorization to discharge is conditional upon the discharges complying with provisions of division 7 of the California Water Code and any more stringent effluent limitations necessary to implement water quality control plans, to protect beneficial uses, and to prevent nuisance. Compliance with this General Permit should ensure this and mitigate any potential adverse changes in water quality due to the discharge.
9. This General Permit does not preempt or supersede the authority of municipalities, flood control agencies, or other local agencies to prohibit, restrict, or control discharges of waste subject to their jurisdiction.
10. To avoid multiple permits simultaneously imposing similar requirements on the same discharge, when a Wastewater System currently regulated by an individual permit enrolls in this General Permit, the existing individual permit is terminated upon issuance of a notice of applicability.

J. Public Participation

1. On February 12, 2020, the Central Coast Water Board held a scoping meeting with Dischargers and interested persons to discuss the proposed development of a waste discharge requirement permit for the discharge of domestic wastewater with monthly average flow rates of greater than 100,000 gallons per day and solicited comments regarding the proposed General Permit development.
2. On June 18, 2020, the Central Coast Water Board notified facilities that currently have WDRs for domestic wastewater with design flows greater than 100,000 gallons per day and other interested persons of its intent to issue a general waste discharge requirements permit for the discharge of domestic wastewater flows of greater than 100,000 gallons per day and provided them with a copy of the proposed General Permit. The Central Coast Water Board has also provided them with an opportunity to submit written comments.
3. The Central Coast Water Board, in a public hearing held on September 25, 2020, has heard and considered all comments pertaining to the proposed discharge.

4. After considering all comments pertaining to this General Permit during a public hearing on September 25, 2020, this General Permit was found consistent with the above findings.
5. Any person aggrieved by this action of the Central Coast Water Board may petition the State Water Board to review the action in accordance with California Water Code section 13320 and title 23 California Code of Regulations sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., within 30 calendar days of the date of adoption of this General Permit at the following address, except that if the thirtieth day following the date of this General Permit falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day:

   State Water Resources Control Board
   Office of Chief Counsel
   P.O. Box 100, 1001 I Street
   Sacramento, CA 95812-0100

   Or by email at waterqualitypetitions@waterboards.ca.gov

   For instructions on how to file a petition for review, see http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml.

K. Application Process

1. Dischargers seeking coverage under this General Permit must submit an application (also referred to as a report of waste discharge) to the Central Coast Water Board. The application process is summarized in Attachment B. The Central Coast Water Board has procedures for electronic submittal of application documents. An application consists of:
   i. A completed Form 200, which is available at: http://www.waterboards.ca.gov/publications_forms/forms/docs/form200.pdf
   ii. An application fee that serves as the first annual fee. Fees are charged annually and are based on threat and complexity ratings, and the treatment technology employed. Threat and complexity ratings are defined in the fee schedule listed in California Code of Regulations, title 23, section 2200 and available at: https://www.waterboards.ca.gov/resources/fees/
   iii. A technical report that describes the wastewater generation, treatment, storage, and disposal. See Attachment C.
2. Upon review of the application, Central Coast Water Board staff will determine if coverage under this General Permit is appropriate. The Central Coast Water Board Executive Officer will issue a notice of applicability when coverage under this General Permit has been authorized. The notice of applicability will contain the necessary site-specific monitoring and reporting requirements.
3. Although a Discharger may be eligible for coverage under this General Permit, the Central Coast Water Board Executive Officer may determine that the discharge would be better regulated by a waiver of WDRs, individual WDRs, or different general WDRs.

IT IS HEREBY ORDERED that upon adoption of this General Permit, pursuant to California Water Code sections 13263, 13267, and 13523, the Discharger, its agents, successors, and assigns, to meet the provisions contained in division 7 of the California Water Code and regulations adopted hereunder, must comply with the requirements in this General Permit. It is further ordered that where a Wastewater System discharge is currently regulated by an individual permit, that permit is terminated upon the enrollment of the Wastewater System into this General Permit.

III. Prohibitions

1. The direct or indirect discharge of any wastewater to surface waters or surface water drainage courses is prohibited. CWC
2. Discharge of untreated or partially treated wastewater is prohibited. CWC
3. The treatment, storage, and/or disposal of waste in or at the Wastewater System must not cause or contribute to a condition of pollution, contamination, or nuisance as defined in California Water Code section 13050. CWC
4. The discharge of wastewater other than treated domestic[8] wastewater is prohibited.
5. Bypass or overflow of treated or untreated waste is prohibited.
6. The discharge of waste to land not owned, operated, or controlled[9] by the Discharger is prohibited. An exception to this prohibition is when recycled water is used as described in a title 22 Engineering Report conditionally accepted by DDW. DDW
7. Discharge to any areas other than those designated in the notice of applicability is prohibited.
8. The discharge of waste classified as hazardous (California Code of Regulations, title 23, section 2521(a)), or designated (California Water Code, section 13173) is prohibited. CWC
9. The Discharger's use of agricultural chemicals inconsistent with product labeling, storage instructions, or California Department of Pesticide Regulation requirements for pesticide[10] applications is prohibited.
10. The discharge of waste in violation of, or not consistent with, the Basin Plan is prohibited.
11. A physical connection between a recycled water system and a potable water system is prohibited.
12. The use of recycled water in a manner different than described in the DDW conditionally accepted title 22 Engineering Report is prohibited.
13. Transportation of undisinfected recycled water within a pipeline used to transport disinfected tertiary treated recycled water is prohibited. DDW

[8] See Attachment A.
[9] By property ownership or permanent easement.
[10] See Attachment A.

14. The use of recycled water for direct human consumption or for processing of food or drink intended for human consumption is prohibited. [DDW]
15. The use of equipment used to convey recycled water (e.g., tanks, piping, valves) also used for potable water supply, is prohibited.
16. The discharge may not contain substances in concentrations which are toxic to human, animal, aquatic, or plant life.
17. Cause a significant increase of mineral constituent concentrations in underlying groundwater, as determined by comparison of samples collected from wells located upgradient and downgradient of the disposal area.
18. Cause groundwater to contain taste or odor producing substances in concentrations that adversely affect beneficial uses. [BP]
19. Cause groundwater to exhibit an instantaneous pH of less than 6.5 or greater than 8.4. [BP]
20. Cause total nitrogen concentrations in underlying groundwater to exceed 10 mg/L or background concentrations, whichever is less.
21. Cause groundwater to contain concentrations of chemical substances or its by-products in amounts that adversely affect any designated beneficial uses. [BP]
22. Cause groundwater to contain concentrations of:
    i. Organic chemicals more than the MCLs for primary drinking water standards specified in California Code of Regulations, title 22, division 4, chapter 15, article 5.5, section 64444, Table 64444-A.
    ii. Inorganic chemicals more than the maximum contaminant levels for primary drinking water standards specified in California Code of Regulations, title 22, division 4, chapter 15, article 4, section 64431, Table 64431-A.
    iii. Inorganic chemicals (optimal fluoride levels) more than the maximum contaminant levels for primary drinking water standards specified in California Code of Regulations, title 22, division 4, chapter 15, article 4.1, section 64433.2, Table 64433.2-A.
    iv. Radionuclides more than the limits specified in California Code of Regulations, title 22, division 4, chapter 15, article 5, section 64443, Table 64443.

    This incorporation-by-reference is prospective, including future changes to the incorporated provisions as the changes take effect. [BP]
23. Cause groundwater to contain concentrations of chemical constituents in amounts that adversely affect the agriculture beneficial use. Interpretation of adverse effect must be as derived from the University of California Agricultural Extension Service guidelines provided in Table 3-1 of the Basin Plan. No controllable water quality factor shall degrade the quality of any groundwater resource or adversely affect long-term soil productivity. The salts control aspects of groundwater management will account for effects from all sources. [BP]

IV. Specifications

A. All Wastewater Systems

1. The Discharger must not discharge wastewater more than the flow limit(s) specified in the notice of applicability.
2. Treatment and disposal/dispersal of wastewater and sludge/solids/biosolids must demonstrate best practicable treatment or control for domestic wastewater. Best practicable treatment or control must be demonstrated by compliance with all the following:
    i. Compliance with this General Permit, including but not limited to effluent limitations.
    ii. Compliance with the notice of applicability, which will specify the following (at a minimum):
        a. Site-specific flow or volume limit(s).
        b. Treatment and disposal methods provided in this General Permit.
        c. Disposal locations.
        d. Applicable effluent limitations as described in this General Permit.
        e. For Wastewater Systems with recycled water, requirements for operation of the Wastewater Systems and disinfection requirements provided by the DDW conditionally accepted title 22 Engineering Report.
        f. Water quality related mitigation measures from an approved site-specific CEQA document (if one is prepared).
    iii. Approved technical reports required by this General Permit.
3. The siting, design, construction, operation, maintenance, and monitoring of the Wastewater System must comply with the requirements of the notice of applicability, the Basin Plan and this General Permit.
4. Technical reports required as part of the application must be stamped by a California licensed or credentialed professional.[11]
5. For new or expanding Wastewater Systems within or nearby the boundaries of a centralized wastewater district or regional service area, the Discharger must demonstrate a good faith effort to connect to the centralized system and provide evidence that connection to the system was not approved.
6. The Central Coast Water Board Executive Officer may require additional investigations or monitoring to demonstrate beneficial uses of water are protected.
7. The Discharger must comply with any water quality related mitigation measures adopted in a CEQA document addressing the Wastewater Systems.
8. When producing or using recycled water, the Discharger must comply with the provisions of the DDW conditionally accepted title 22 Engineering Report.

[11] For example, Professional Engineer or Registered Environmental Health Specialist, etc. performing work pursuant to their area of expertise.

9. Owners and/or operators of a Wastewater System that accepts wastes from RVs or other waste systems that utilize holding tanks (e.g., portable toilets, airplane wastewater, etc.) must ensure that such wastes do not deleteriously affect the wastewater system or adversely affect beneficial uses of groundwater with holding tank additives that may contain, among other chemicals, formaldehyde, zinc, or phenol. Use of holding tank chemicals must be discouraged by the Wastewater System owner/operator.
10. Once any of the following plans (see section VI.A and the MRP) is approved, no material changes can be made without approval by the Central Coast Water Board Executive Officer. The Discharger must notify the Central Coast Water Board in writing at least 90 days in advance of any proposed material change in any of the plans.
    i. Pretreatment Program Plan.
    ii. Operations and Maintenance Manual.
    iii. Climate Change Adaptation Plan.
    iv. Salt and Nutrient Management Plan.
11. The Discharger must comply with the setbacks described in Table 2 unless an approved variance is obtained from the Central Coast Water Board Executive Officer. Setbacks provided in this General Permit are the distances of wastewater treatment areas, disposal/dispersal areas, or land application areas from domestic wells, streams (perennial or ephemeral), lakes/reservoirs, wetlands, and property lines.

    Some existing Wastewater Systems may not comply with the setbacks provided herein. The Central Coast Water Board Executive Officer may choose to enroll such existing, noncomplying Wastewater Systems in this General Permit after approving a variance.

    For new or expanded facilities where a Wastewater System will not comply with the setbacks included in the General Permit, these systems will need further evaluation of the setbacks and approval of a variance by the Central Coast Water Board Executive Officer is required.

    In some cases, more than one setback standard exists. For all existing, expanded, or new Wastewater Systems, the following procedures must be implemented when determining the appropriate setback.

    i. When the setback requirement comes from title 22, approval of a variance must be obtained from both DDW and the Central Coast Water Board Executive Officer.
    ii. When the setback comes from the California Well Standards, a reduced setback may be allowed based on site-specific conditions with approval from the Central Coast Water Board Executive Officer.
    iii. When the setback comes from the Basin Plan, the Central Coast Water Board Executive Officer may allow a reduced setback based upon site-specific conditions.

iv. When the setback comes from the California Plumbing Code, the Central Coast Water Board Executive Officer may not approve a reduced setback.

Approval of a variance for setbacks that are not referenced to a requirement listed above will be based on professional judgment and may be revised by the Central Coast Water Board Executive Officer based on site-specific conditions.

Table 2: Summary of Wastewater System Setbacks [1]

Equipment or Activity	Domestic Well	Flowing Stream [2]	Ephemeral Stream Drainage [3]	Property Line	Lake, Wetland, or Reservoir [5]
Aerobic Treatment Unit, Treatment System, or Collection System [6]	100 [12] 50 [4]	50 [4]	50	5 [4]	200 [17] 50 [4]
Seepage Pit	150 [12,4]	150 [4]	50	8 [4]	200 [17] 150 [4]
LAND APPLICATION AREA REQUIREMENTS					
Land Application Area (disinfected tertiary recycled water) [7, 10, 19]	50 [11]	25	50	25	200
Land Application Area (disinfected secondary-2.2 or secondary-23 recycled water) [8]	100 [14]	50	50	100 [18] 50 [13]	200
Land Application Area (undisinfected secondary recycled water [9], undisinfected secondary treated wastewater)	150 [15]	100	100	100 [18] 50 [13]	200
WASTEWATER TREATMENT, STORAGE, AND EVAPORATION PONDS					
Impoundment (disinfected tertiary recycled water) [7]	100 [16]	100	100	50	200
Impoundment (disinfected secondary-2.2 or secondary-23 recycled water) [8]	100 [14]	100	100	50	200

Equipment or Activity	Domestic Well	Flowing Stream [2]	Ephemeral Stream Drainage [3]	Property Line	Lake, Wetland, or Reservoir [5]
Impoundment (undisinfected secondary recycled water [9], undisinfected secondary treated wastewater)	150 [15]	150	150	50	200

[1] All units are in feet
[2] A flowing stream must be measured from the ordinary high-water mark established by fluctuations of water elevation and indicated by characteristics such as shelving, changes in soil character, vegetation type, presence of litter or debris, or other appropriate means.
[3] Ephemeral stream drainage denotes a surface water drainage feature that flows only after rain or snowmelt and does not have enough groundwater seepage (baseflow) to maintain a condition of flowing surface water. The drainage must be measured from a line that defines the limit of the ordinary high-water mark (described in “a” above). Irrigation canals are not considered ephemeral streams drainage features. The ephemeral stream must be a “losing stream” (discharging surface water to groundwater) at the proposed Wastewater System site.
[4] Setback established by California Plumbing Code, Table K-1.
[5] Lake, wetland, or reservoir boundary measured from the high-water line.
[6] Aerobic treatment unit, treatment system, or collection system addresses equipment located below ground or that impedes leak detection by routine visual inspection.
[7] Disinfected tertiary recycled water is defined in California Code of Regulations, title 22, section 60301.230.
[8] Disinfected secondary-2.2 recycled water is defined in California Code of Regulations, title 22, section 60301.220. Disinfected secondary-23 recycled water is defined in California Code of Regulations, title 22, section 60301.225.
[9] Undisinfected secondary recycled water is defined in California Code of Regulations, title 22, section 60301.900.
[10] Additional restrictions for spray irrigation of recycled water are contained in California Code of Regulations, title 22, section 60310(f).
[11] Setback established by California Code of Regulations, title 22, section 60310(a). A reduced setback is allowed as described in California Code of Regulations, title 22, section 60310(a) if all the conditions in the section are met and compliance is documented in the application and notice of applicability.
[12] California Well Standards, part II, section 8. Site-specific conditions may allow reduced setback or require an increased setback. See discussion in Well Standards.
[13] Setback for drip or flood application methods. Spray irrigation is subject to additional setbacks and restrictions (see footnote k).
[14] Setback established by California Code of Regulations, title 22, section 60310(c).
[15] Setback established by California Code of Regulations, title 22, section 60310(d).
[16] Setback established by California Code of Regulations, title 22, section 60310(b).
[17] Setback established by the Onsite Wastewater Treatment System Policy, section 7.5.5.
[18] Setback established by California Code of Regulations, title 22, section 60310(f).
[19] No spray irrigation of any recycled water, other than disinfected tertiary recycled water, shall take place within 100 feet of a residence or a place where public exposure could be similar to that of a park, playground, or school yard.

B. Additional Specifications for Pond/Wetland Systems (Treatment, Storage, and Disposal)

1. All treatment, storage, and evaporation ponds must be lined[12] to protect groundwater and associated beneficial uses. Existing wastewater treatment, storage, or evaporation ponds constructed prior to the adoption date of this General Permit where the type of existing lining systems is unknown must be evaluated by a California licensed Professional Engineer or Professional Geologist for permeability and a report submitted to the Central Coast Water Board for Executive Officer approval within **one year** of the date of enrollment in this General Permit (issuance of the notice of applicability).

   Existing wastewater treatment, storage, or evaporation ponds, that do not have permeability of less than $1x10^{-6}$ centimeters per second constructed prior to the adoption date of this General Permit, must be evaluated by a California licensed Professional Engineer or Professional Geologist for permeability and a report submitted to the Central Coast Water Board for Executive Officer approval within **one year** of the date of enrollment in this General Permit. The Central Coast Water Board Executive Officer may require these ponds to be lined on a case by case basis depending on the threat to water quality.

2. Two feet of freeboard must always be maintained in ponds to provide adequate storage capacity and prevent wastewater spills. Freeboard must be measured vertically from the lowest elevation of the pond berm to the pond water surface. Wastewater ponds must contain permanent markers indicating depth and freeboard. If freeboard is less than two feet,[13] the Discharger must immediately implement the contingency plan contained in the spill prevention and emergency response plan.[14]

3. Pond systems must have capacity to accommodate wastewater, design seasonal precipitation, ancillary inflow and infiltration, and wind driven waves. Design seasonal precipitation must be based on the following precipitation criteria:

   i. If wastewater spills occur (e.g., breaches in the pond walls, flows spilling over the pond walls, etc.) at existing pond systems, the Central Coast Water Board Executive Officer may require pond upgrades consistent with the size specification defined below (section IV.B.3.ii).

   ii. For new or expanded pond systems, seasonal precipitation used in the pond sizing water balance calculations must be based on the following:

      a. The 100-year return annual total precipitation value distributed monthly in accordance with average (mean) precipitation values. The calculations must

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[12] Liner must have a permeability of less than $1x10^{-6}$ centimeters per second and may be constructed with synthetic materials, two feet of low permeably soils, or another engineered alternative. Discharger must provide documentation for Regional Board Executive Officer approval to confirm that a treatment, storage, or evaporation pond is sufficiently impermeable to prevent discharges of untreated or partially treated wastewater.

[13] Reference – Tchobanoglous, George (1979) "Wastewater Engineering: Treatment, Disposal, Reuse," Metcalf & Eddy, Inc.

[14] See section VI.A.2.iv.

demonstrate adequate capacity to maintain two feet of freeboard in the pond(s).

b. The Central Coast Water Board Executive Officer may allow a lower standard for the return annual total precipitation value, with approval of a technical report describing how operation of the Wastewater System will not result in wastewater spills. If the Discharger seeks relief from the 100-year return annual total precipitation value, the Discharger must certify that the spill prevention and emergency response plan is adequate to respond to forecast conditions using the 100-year return annual total precipitation value distributed monthly in accordance with average (mean) precipitation values. The calculations must demonstrate adequate capacity to maintain two feet of freeboard in the pond(s).

4. All ponds must be managed to mitigate breeding of mosquitoes including, but not limited to, the following:
   i. An erosion control program must be implemented to ensure that small coves and irregularities are not created around the perimeter of the water surface of the pond(s).
   ii. Weeds must be minimized through control of water depth, a shoreline synthetic liner, harvesting, or other suitable measures.
   iii. Vegetation and debris must be removed from the water surface.
   iv. Coordination with the local mosquito abatement or vector control district to supplement the measures described above in cases where other methods are infeasible.
5. A dissolved oxygen concentration of 1.0 mg/L must be maintained in the upper one foot of wastewater ponds to prevent nuisance odors.
6. Burrowing animals active in areas that may compromise the integrity of pond containment must be promptly controlled and repairs to the containment completed as soon as possible.
7. Prior to any removal, drying, treatment, or disposal of sludge for pond maintenance, the Discharger must implement and comply with the Central Coast Water Board Executive Officer approved sludge management plan.
8. Constructed wetlands must be graded to prevent the accumulation of stormwater in the wetland.

C. Land Application

1. Wastewater must not be applied to a land application area within 24 hours of forecasted precipitation with a greater than 50-percent probability of occurring, during precipitation events, or when the land application area surface soil is saturated.
2. Spray irrigation with treated wastewater is prohibited when wind speed (including gusts) exceeds 30 miles per hour. Wind speed may be measured onsite or at a nearby weather station operated by a governmental organization. If the Discharger's land application areas are isolated from receptors, the Discharger

may request Executive Officer approval to spray irrigate when wind speeds exceed 30 miles per hour.

3. Land application of treated wastewater must be managed to prevent ponding, runoff, and erosion.
4. Discharge of wastewater (e.g., surface flow, spray drift, etc.) from a land application area is prohibited.
5. If undisinfected wastewater is applied to a land application area, stormwater runoff from the land application area is prohibited.
6. If stormwater can run off from a land application area (during the time of year wastewater is not applied), all applied wastewater must meet disinfection requirements at a level equivalent to disinfected secondary-23 recycled water (California Code of Regulations, title 22, section 60301.225). Land application of more highly treated water is acceptable. Alternatively, a Discharger may submit a technical report, for Central Coast Water Board Executive Officer approval, describing how the land application area will be operated to prevent pathogens from migrating off the land application area with stormwater.
7. If recycled water is applied, it must comply with the title 22 water recycling criteria, this General Permit, the notice of applicability, a conditionally accepted title 22 Engineering Report, and any DDW conditions.
8. Public contact with wastewater/recycled water must be precluded through use of fences, signs, and/or other appropriate means. All public use areas where recycled water is used must be posted with signs in English, Spanish, and include an international symbol (e.g., a drinking water glass with a slash through it), that are visible, in a size no less than 4 inches by 8 inches and include the following wording, “Recycled Water – Do Not Drink” (California Code of Regulations, title 22, section 60310(g)).
9. Land application of treated wastewater must meet setback requirements specified in Table 2.
10. Land application areas must be managed to mitigate breeding of mosquitoes including, but not limited to the following:
    i. There must be no standing water 48 hours after application of wastewater.
    ii. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes must not be used to store wastewater or recycled water.
    iii. The Discharger must coordinate with the local mosquito abatement or vector control district to supplement the measures described above in cases where other methods are infeasible.

D. Sludge/Solids/Biosolids Disposal

1. Sludge and solid waste must be removed from screens, sumps, tanks, and ponds as needed to ensure optimal plant operation.
2. Treatment and storage of sludge must be confined to the Wastewater System property and must be conducted in a manner that precludes runoff or infiltration of waste constituents into soil.

3. Any storage of residual sludge, solid waste, or biosolids at the Wastewater System must be temporary, and the waste must be controlled and contained in a manner that minimizes leachate formation and precludes runoff or infiltration of waste constituents into soils and groundwater.
4. Residual sludge and solid waste must be disposed of in a manner approved by the Central Coast Water Board Executive Officer and consistent with the Consolidated Requirements for Treatment, Storage, Processing, or Disposal of Solid Waste (California Code of Regulations, title 27 division 2). Removal for further treatment, disposal, or reuse at disposal sites operated in accordance with valid WDRs issued by the State Water Board or Central Coast Water Board will satisfy this specification.

   Use and disposal of biosolids must comply with the USEPA Part 503 Biosolids Rule (Code of Federal Regulations, title 40, part 503).
5. Modifications to an approved sludge management plan deemed part of an emergency action must be noticed to the Central Coast Water Board Executive Officer within **five-days** of disposal with a rationale for the emergency modification.

E. Pretreatment Specifications

1. These Pretreatment Specifications apply to:
   i. Dischargers that own or operate Wastewater Systems considered publicly owned treatment works[15] treating or designed to treat an average dry weather flow of 5 million gallons per day or more of community wastewater.
   ii. Wastewater Systems that the Central Coast Water Board Executive Officer has determined a pretreatment program is necessary to prevent the introduction of pollutants which will interfere with the operation of the treatment works, pass through the treatment system, reduce opportunities to recycle and reuse domestic wastewater and sludge, or expose Wastewater System employees to hazardous chemicals.
2. The Discharger must:
   i. Submit a Pretreatment Program Plan to the Central Coast Water Board for Executive Officer review and approval. This plan must provide a clear, long-term plan for addressing the pretreatment requirements contained in Code of Federal Regulations, title 40, part 403. The Pretreatment Program Plan must be maintained at the wastewater treatment facility and must be presented to the Central Coast Water Board staff upon request or as required by the notice of applicability.
   ii. Comply with the pretreatment requirements contained in Code of Federal Regulations, title 40, part 403. The Discharger must implement and enforce its pretreatment program. The Discharger's pretreatment program is hereby made an enforceable condition of this General Permit. The Central Coast Water Board may initiate enforcement action against an industrial user for

[15] Publicly owned treatment works is defined in Code of Federal Regulations, title 40, part 403.3.

noncompliance with applicable standards and requirements as provided in the Clean Water Act. [CFR]

iii. Enforce the requirements promulgated under section 307(b), 307(c), 307(d), and 402(b) of the Clean Water Act. The Discharger must cause industrial users subject to Federal Categorical Standards to achieve compliance no later than the date specified in those requirements or, in the case of a new industrial user, upon commencement of its discharge. [CFR]

iv. Perform the pretreatment functions as required in Code of Federal Regulations, title 40, part 403.8(f), including but not limited to:

a. Implement the necessary legal authorities as provided in Code of Federal Regulations, title 40, part 103.8(f)(1);

b. Enforce the pretreatment requirements under Code of Federal Regulations, title 40, parts 403.5 and 403.6;

c. Implement the programmatic functions as provided in Code of Federal Regulations, title 40, part 403.8(f)(2); and

d. Provide the requisite funding and personnel to implement the pretreatment program as provided in Code of Federal Regulations, title 40, part 403.8(f)(3) CFR.

V. Limitations

A. Effluent Limitations

This General Permit establishes effluent limitations consistent with USEPA secondary treatment standards, the Basin Plan, and title 22 requirements (if title 22 is applicable).

Central Coast Water Board staff will identify the applicable Wastewater System specific effluent limitations and corresponding monitoring requirements for a Wastewater System in the notice of applicability.

The parameters used within this General Permit to determine Wastewater System specific effluent limitations includes, but is not limited to:

1. Treatment Technology: In the application, the Discharger must identify the treatment technology used at the Wastewater System. The Discharger is required to comply with the applicable secondary treatment effluent limitations specified in Tables 3, 4, and 5.
2. Raw Wastewater Characteristics: In the application, the Discharger must identify if the quality of wastewater entering the Wastewater System contains a significant amount of fats, oil, grease, phenol, formaldehyde, or zinc. The Discharger is required to comply with effluent limitations specified in Table 6 if it is determined the Wastewater System receives raw wastewater with significant amounts of these identified constituents.

   Types of waste streams that could contribute fats, oil, grease, phenol, formaldehyde, or zinc to a Wastewater System might include flows from oil pressing/bottling, meat processing, holding tanks (e.g., recreational vehicles, portable toilets, airplane wastewater), etc.

3. Underlying Groundwater Basin/Sub-Area: In the application, the Discharger must identify the groundwater basin/sub-area that underlies the Wastewater System disposal/dispersal area and is required to proceed with one of the two options presented below.

    i. Option 1: The Discharger elects to comply with effluent limitations specified in Table 7. The Discharger must demonstrate the quality of effluent discharged from the Wastewater System meets effluent limitations specified in Table 7. If the Discharger is unable to comply with the effluent limitations, the Discharger may be required to implement the groundwater monitoring program as described in Option 2.

    Table 7 present effluent limitations consistent with Basin Plan median water quality objectives, Basin plan agriculture water quality goals, USEPA Maximum Contaminant Levels (MCLs), and State of California's MCLs.

    How to use Table 7:

    a. If the Wastewater System discharges treated wastewater or non-potable treated recycled water to a designated basin, use the Basin Plan median water quality objectives as effluent limitations.

    b. If the Wastewater System discharges treated wastewater or non-potable treated recycled water into a non-designated groundwater basin (i.e., a groundwater basin not identified in Table 3-6 of the Basin Plan):

        - Use the MCLs and Basin Plan agriculture water quality goals shown in Table 7 as effluent limitations (in cases where there are two different numbers, the more stringent one applies), **or**;
        - A Discharger may request Executive Officer approval to use the median water quality objectives from an adjacent designated groundwater basin (Basin Plan Table 3-6) as effluent limitations.

    ii. Option 2: The Discharger elects not to treat the wastewater to the effluent limitations specified in Table 7. The Discharger will be required to implement a groundwater monitoring program.

4. Reclamation of Non-Potable Treated Wastewater: In the application, the Discharger must disclose whether they are a non-potable recycled water producer. If treated non-potable recycled water from the Wastewater System is discharged to land for the purposes of reuse, the Discharger must comply with the effluent limitations specified in Table 8. The requirements established in the DDW conditionally accepted title 22 Engineering Report and DDW conditional acceptance letter for the Wastewater System also apply. If the effluent limitations or requirements established in the conditionally accepted title 22 Engineering Report for the Wastewater System cannot be met, the Central Coast Water Board reserves the right to:

    i. Not permit the proposed discharge to land until effluent limitations can be achieved with proposed source control or treatment design, or

    ii. Require the Discharger to provide supplemental technical report(s) (e.g., modeling); conduct additional monitoring (i.e., groundwater monitoring, etc.);

or implement best management practices (i.e., land application area management plan, etc.) to confirm compliance with conditions and an requirements of this General Permit, to avoid unreasonably affecting present and anticipated beneficial uses, and to ensure that any change to water quality will be consistent with the maximum benefit of the people of the State.

Table 3. Secondary Treatment Effluent Limitations – Treatment Ponds

Constituent	Units	30-Day Average	7-Day Average	Sample Maximum
Biochemical Oxygen Demand, 5-Day	mg/L[1] [2]	45 [7]	65[7]	Not Applicable
Total Suspended Solids	mg/L	45[7]	65[7]	Not Applicable
Settleable Solids	mL/L[3]	0.3	Not Applicable	0.5
Total Nitrogen (as N)	mg/L	10	Not Applicable	20
pH	Not Applicable	less than 6.5 or greater than 8.4[5]	Not Applicable	Not Applicable

See notes after Table 8.

Table 4. Secondary Treatment Effluent Limitations - Trickling Filters

Constituent	Units	30-Day Average	7-Day Average	Sample Maximum
Biochemical Oxygen Demand, 5-Day	mg/L	30[7,8]	45[7,8]	90[9]
Total Suspended Solids	mg/L	30[7,8]	45[7,8]	90[10]
Settleable Solids	mL/L	0.3	Not Applicable	0.5
Total Nitrogen (as N)	mg/L	Not Applicable	Not Applicable	10
pH	Not Applicable	less than 6.5 or greater than 8.4[5]	Not Applicable	Not Applicable

See notes after Table 8.

Table 5. Secondary Treatment Effluent Limitations - Activated Sludge, Membrane Biological Reactor, Sequencing Batch Reactor, or Similar Systems

Constituent	Units	30-Day Average	7-Day Average	Sample Maximum
Biochemical Oxygen Demand, 5-Day	mg/L	30[7,8]	45[7,8]	Not Applicable
Total Suspended Solids	mg/L	30[7,8]	45[7,8]	Not Applicable
Settleable Solids	mL/L	0.1	0.3	0.5

Constituent	Units	30-Day Average	7-Day Average	Sample Maximum
Total Nitrogen (as N)	mg/L	Not Applicable	Not Applicable	10
pH	Not Applicable	less than 6.5 or greater than 8.4[5]	Not Applicable	Not Applicable

See notes after Table 8.

Table 6: Effluent Limitations for Select Constituents for All Wastewater Systems

Constituent	Units	30-Day Average	Sample Maximum
Oil & Grease	mg/L	15[11]	25[11]
Phenol	µg/L[4]	0.1[5]	Not Applicable
Formaldehyde	µg/L	Not Applicable	100[12]
Zinc	mg/L	2.0[5]	Not Applicable

See notes after Table 8.

Table 7: Effluent Limitations Based on Basin Plan Median Water Quality Objectives, Basin Plan Agriculture Water Quality Goals, USEPA MCLs, and State of California's MCLs * - all Wastewater Systems

		Basin Plan Median Water Quality Objectives	MCL	Upper MCL	Agriculture Water Quality Goal
Constituent	**Units**	**25-Month Rolling Median**	**25-Month Rolling Median**	**Sample Maximum**	**25-Month Rolling Median**
Total Dissolved Solids	mg/L	Refer to Basin Plan Table 3-6	500[13]	1,000[13]	Not Applicable
Chloride	mg/L	Refer to Basin Plan Table 3-6	250[13]	500[13]	106[8],[5]
Sulfate	mg/L	Refer to Basin Plan Table 3-6	250[13]	500[15]	Not Applicable
Boron	mg/L	Refer to Basin Plan Table 3-6	Not Applicable	Not Applicable	0.5[14],[5]
Sodium	mg/L	Refer to Basin Plan Table 3-6	Not Applicable	Not Applicable	69[14],[5]
Nitrate (as N)	mg/L	Refer to Basin Plan Table 3-6	10[16]	Not Applicable	Not Applicable

See notes after Table 8.
* This table is also used as groundwater limitations for all types of wastewater systems (see section V.C).

Table 8: Effluent Limitations for Non-Potable Recycled Water Producers - All Wastewater Systems

Constituent	Unit	Regulatory Limitations
Total Coliform	MPN/100 mL[6]	title 22[17]
Turbidity	NTU	title 22[17]
Chlorine residual	mg/L	title 22[17]
Other constituents or operational requirements identified in a title 22 Engineering Report	Not Applicable	title 22[17]

[1] mg denotes milligrams.
[2] L denotes liter.
[3] mL denotes milliliters.
[4] µg denotes micrograms.
[5] Basin Plan. For pH, the effluent limitation values shown are a range, not an average or maximum.
[6] MPN denotes most probable number.
[7] USEPA Office of Wastewater Management, Water Permits Division, State and Regional Branch, EPA-833-K-10-001, September 2010.
[8] USEPA, Code of Federal Regulations, title 40, part 133.102, Secondary Treatment Standards, Technology-Based Effluent Limits.
[9] Four of five trickling filter Wastewater Systems in the central coast region have daily maximum biochemical oxygen demand effluent limits of 90 mg/L or less.
[10] Two of five trickling filter Wastewater Systems in the central coast region have daily maximum total suspended solids effluent limits of 90 mg/L or less.
[11] Industrial stormwater discharge requirements, Table 2 (Numeric Action Limit), NPDES No. CAS000001.
[12] California Notification Levels, http://www.waterboards.ca.gov:8080/WaterQualityGoal/
[13] California Division of Drinking Water secondary MCL. California Code of Regulations, Title 22 Division 4. Environmental Health Chapter 15. Domestic Water Quality and Monitoring Regulations Article 16. Secondary Drinking Water Standards.
[14] Water Quality for Agriculture, published by the Food and Agriculture Organization of the United Nations in 1985, contains criteria protective of various agricultural uses of water, including irrigation of various types of crops and stock watering.
[15] USEPA primary MCL.
[16] California Division of Drinking Water primary MCL.
[17] As specified in State Water Board's Division of Drinking Water title 22 conditional acceptance letter. Disinfection methods will vary between plants. Some customization of this table will occur in the notice of applicability based on the title 22 conditional acceptance letter.

B. Organic Loading Limitations

If a Wastewater System land applies treated wastewater or treated non-potable recycled water, Land Application Limitations listed in Table 9 apply. For operational and management requirements refer to section IV.C.

Table 9: Land Application – Organic Loading Rate Limitations

Constituent	Units	30-Day Average	Maximum
Biochemical Oxygen Demand, 5-Day	pounds/acre/day	100	300

C. Groundwater Limitations

Groundwater quality is affected by many factors. This General Permit considers these factors and is designed to minimize the influence of the discharge on groundwater. All discharges must protect water quality as described in the Basin Plan. For designated basins, use the Basin Plan median water quality objectives in Table 7 as groundwater limitations (Basin Plan Table 3-6). For non-designated basins, (i.e., a groundwater basin not identified in Table 3-6 of the Basin Plan):

1. Use the MCLs and Basin Plan agriculture water quality goals in Table 7 as groundwater limitations; or
2. A Discharger may request Executive Officer approval to use the median water quality objectives from an adjacent designated groundwater basin (Basin Plan Table 3-6) as groundwater limitations.

VI. Provisions

A. Technical Report Preparation Requirements

The Discharger must submit the following technical reports in accordance with the schedule specified in the MRP. The MRP prescribes the required components of each plan. The Discharger must implement each required plan.

1. **Pretreatment Program Plan -** If directed by the Central Coast Water Board Executive Officer, the Discharger must submit a Pretreatment Program Plan to the Central Coast Water Board for Executive Officer review and approval. See section IV.E.2.i.
2. **Operations and Maintenance Manual** -The Discharger must submit a written Operations and Maintenance Manual for Central Coast Water Board Executive Officer review and approval. The Operations and Maintenance Manual must be maintained at the wastewater treatment facility and must be presented to Central Coast Water Board staff upon request. In addition to the required components specified in the attached Standard Provisions and Reporting Requirements for Waste Discharge Requirements dated December 5, 2013 (Standard Provisions) A.12 and A.28, the Operations and Maintenance Manual must contain the following components:
    i. **Sampling and Analysis Plan -**The sampling and analysis plan must be sufficient to assure compliance with the terms of this General Permit and the notice of applicability. If the Central Coast Water Board issues a revised MRP, the Discharger must update the sampling and analysis plan as needed to comply with the revised MRP.
    ii. **Sludge Management Plan -** The sludge management plan must be sufficient to assure compliance with the terms of this General Permit and the notice of applicability.
    iii. **Land Application Area Management Plan -** The land application area management plan must be sufficient to assure compliance with the terms of this General Permit and the notice of applicability.
    iv. **Spill Prevention and Emergency Response Plan -** The spill prevention and emergency response plan must be sufficient to assure compliance with the

terms of this General Permit and the notice of applicability. The spill prevention and emergency response plan must describe operation and maintenance activities to prevent accidental releases of wastewater and to effectively respond to such releases and minimize the environmental impact.

3. **Climate Change Adaptation Plan -** The Discharger must submit a Climate Change Adaptation Plan[16] to the Central Coast Water Board Executive Officer for review and approval. The Climate Change Adaptation Plan must describe the Discharger's long-term approach for identifying and addressing climate change hazards and vulnerabilities for their Wastewater System, including all associated infrastructure (e.g., treatment facilities, conveyances to discharge points, and discharge facilities). The Climate Change Adaptation Plan must be maintained at the wastewater treatment facility.

    i. **Recycled Water Feasibility Plan –** For Dischargers with Wastewater System design flows over 1,000,000 gallons per day, the Climate Change Adaptation Plan must contain a recycled water feasibility plan for the production and reuse of non-potable recycled wastewater.

4. **Salt and Nutrient Management Plan** - If directed by the Central Coast Water Board Executive Officer pursuant to California Water Code section 13267, a Discharger must prepare and submit a Salt and Nutrient Management Plan, to ensure that the overall impact of treated wastewater and/or water recycling projects does not degrade groundwater resources.

    The Central Coast Water Board Executive Officer may direct the development and implementation of a Salt and Nutrient Management Plan when one of following occurs:

    i. Non-potable recycled water is produced. It is the intent of the Recycled Water Policy that every groundwater basin/sub-basin in California has a salt and nutrient management plan.

    ii. If a Discharger elects not to treat the wastewater to the effluent limitations specified in Table 7.

    iii. Effluent/Groundwater data from a Wastewater System demonstrates negative impacts or trends towards negative impacts to groundwater from a discharge.

    iv. Central Coast Water Board learns of a current or past discharge that has the potential to negatively impact ground or surface water.

B. General Provisions for All Wastewater Systems:

1. The Discharger must comply with all items of Standard Provisions and any updates to the Standard Provisions adopted by the Central Coast Water Board, unless exempted in writing by the Central Coast Water Board Executive Officer. The Central Coast Water Board will provide the Discharger notice of proposed updates

[16] In place of a static document, the Discharger may develop a living document and/or set of tools that fulfills the components outlined in section VI.A.3.

to the Standard Provisions in accordance with procedures for public participation. A copy of the 2013 Standard Provisions currently in effect is available electronically at the following link and is Attachment E of this General Permit:

https://www.waterboards.ca.gov/centralcoast/board_decisions/docs/wdr_standard_provisions_2013.pdf

2. Bypass (the intentional diversion of waste streams from any portion of a treatment system[17]) is prohibited. See Standard Provisions D.1.
3. Dischargers must review the Wastewater System's wastewater flow rate and organic loading rate annually and provide that review to the Central Coast Water Board Executive Officer. A Discharger whose wastewater flow rate or organic loading rate has been increasing, or is projected to increase, must estimate when the flow or loading rate will reach hydraulic and treatment capacities of its treatment, collection, and disposal systems. The projections must be made in **January each year**, based on the last three years average dry weather flow and loading rates, peak wet weather flow and loading rates, and total annual flow and loading rates, as appropriate. When any projection shows that capacity of any part of the Wastewater System may be exceeded in four years, the Discharger must notify the Executive Officer by March 1st.
4. The Wastewater System must be sited and designed to prevent flood or surface water from inundating wastewater ponds or otherwise rendering the Wastewater System inoperable. For design purposes, the most recent Federal Emergency Management Agency approved 100-year base flood elevations must be used.
5. The Discharger must ensure that all site operating personnel are familiar with the contents of the Wastewater System notice of applicability, this General Permit, the Operations and Maintenance Manual, and the conditionally accepted title 22 Engineering Report (for non-potable recycled water uses when applicable). The Discharger must at a minimum document training provided to all new site operating personnel and refresher training annually to ensure they meet this requirement. A copy of this General Permit, the notice of applicability, and technical reports required by this General Permit must be kept at the wastewater treatment facility for reference by operating personnel.
6. The Discharger must operate and maintain all Wastewater Systems in accordance with an Operations and Maintenance Manual for the Wastewater System that is subject to the approval of the Central Coast Water Board Executive Officer. The Operations and Maintenance Manual, including expected performance criteria, a process flow diagram, and a copy of as-built plans, must be kept onsite and periodically updated whenever there is a change in operational procedures or an expansion of the system. See Standard Provisions A.12 and A.28 and the MRP for additional requirements of the Operations and Maintenance Manual.
7. The Discharger must maintain in good working order, and operate as efficiently as possible, any Wastewater System, control system, or monitoring device installed to achieve compliance with this General Permit and the notice of applicability.

[17] This includes the use of unlined storage ponds.

8. The Discharger must take all reasonable steps to minimize any adverse impact to waters of the state resulting from noncompliance with this General Permit.
9. The discharge must always remain within the disposal/dispersal area designated in the notice of applicability (except for activities allowed in a conditionally accepted title 22 Engineering Report).
10. Access to the Wastewater System must be limited to authorized persons.
11. This General Permit does not relieve the Discharger from responsibility to obtain other necessary local, state, or federal permits to construct Wastewater Systems necessary for compliance with this General Permit, nor does this General Permit prevent imposition of additional standards, requirements, or conditions by any other agency.
12. The prohibitions, specifications, limitations, and provisions of this General Permit are severable. If any provision of this General Permit is held invalid, the remainder of this General Permit shall not be affected.
13. The Discharger must take all reasonable steps to prevent any discharge in violation of this General Permit.
14. The Central Coast Water Board will review this General Permit periodically and will revise requirements when necessary.
15. Before making a material change in the character, location, or volume of discharge, the Discharger must notify the Central Coast Water Board Executive Officer. A material change includes, but is not limited to, any of the following:
    i. A change in area or depth used for waste disposal beyond that specified in the notice of applicability.
    ii. A significant change in disposal method, location, or volume (e.g., change from land application to percolation pond or increase in flow).
16. The Central Coast Water Board Executive Officer may require that updated permit application documents be submitted.
17. Wastewater System repairs and expansions must be made in accordance with the conditions of this General Permit, the notice of applicability, and the California Water Code.
18. At least **90 days** prior to termination or expiration of any lease, contract, or agreement involving disposal or recycling areas or offsite reuse of effluent, used to justify the capacity authorized herein and assure compliance with this General Permit, the Discharger must notify the Central Coast Water Board Executive Officer in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this General Permit and the notice of applicability.
19. Except for material determined to be confidential in accordance with California law, all reports prepared in accordance with terms of this General Permit will be available for public inspection by the Central Coast Water Board. Data on waste discharges, water quality, geology, and hydrogeology are not confidential.
20. For any electrically operated equipment at the Wastewater System, the failure of which would cause loss of control or containment of waste materials, or violation of

this General Permit, the Discharger must employ safeguards to prevent loss of control over wastes. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means.

21. In the event of any change in control or ownership of the Wastewater System or wastewater disposal/dispersal areas, the Discharger must notify the succeeding owner or operator of the existence of this General Permit by letter, a copy of which must be immediately forwarded to the Central Coast Water Board Executive Officer.

22. The Discharger must pay an annual fee to the State Water Board in accordance with the fee schedule for each fiscal year (California Code of Regulations, title 23, section 2200). Fees are based on threat to water quality and complexity ratings, will be determined based on information in the permit application, and are subject to revision by the State Water Board. Annual invoices are issued by the State Water Board for the state fiscal year (July 1 to June 30).

C. General Reporting Requirements:

1. The Discharger must report electronically via email and through the State Water Board's GeoTracker database or as otherwise specified in the MRP.

2. If the Discharger does not comply, or will be unable to comply, with a limit related to effluent quality, pond freeboard, flow rate, the conditionally accepted title 22 Engineering Report requirements, or has bypass or overflow, the Discharger must notify Central Coast Water Board staff by telephone. Current phone numbers for Central Coast Water Board offices may be found on the notice of applicability or on the Internet at:

   https://www.waterboards.ca.gov/centralcoast/

   Notification must occur as soon as the Discharger or its agents have knowledge of such noncompliance or potential for noncompliance, and the Discharger must confirm this notification in writing within five days. The written notification must state the date, time, nature, cause of noncompliance, immediate response action, and schedule for corrective actions.

3. In the event of a wastewater containment failure, the Discharger must immediately notify California Office of Emergency Services. Notification must be provided as soon as possible and when the notice can be provided without substantially impeding cleanup or other emergency measures (California Water Code, section 13271). A written report to the Central Coast Water Board Executive Officer must be submitted within 10 days of the failure describing the cause of the failure and how a recurrence will be prevented. Such a failure must be promptly corrected in accordance with the requirements of this General Permit.

4. Notification Requirements for the delivery of off-specification recycled water:

   i. In the event the Discharger of non-potable recycled water does not comply with the recycling specifications in section V.A.4, the Discharger must immediately notify, via telephone and email, the Central Coast Water Board and the applicable DDW District office. Within two weeks of the noncompliance, the Discharger must submit a written follow-up report to the Central Coast Water Board Executive Officer and DDW District Engineer,

including pertinent information explaining reasons for the noncompliance and steps being taken to prevent the problems from recurring.

ii. In the event the Discharger delivers recycled water not meeting the Uniform Statewide Recycling Criteria specification, the Discharger must immediately notify, via telephone and email, all enrollees of the State Water Board's Water Reclamation Requirements for Recycled Water Use (Order WQ 2016-0068-DDW) with potential to have received recycled water from the Wastewater System.

5. All reports submitted in response to this General Permit, including monitoring reports, must be signed in accordance with Standard Provisions section C.14 (Attachment E) using the current transmittal document provided by Central Coast Water Board staff. In addition:

   i. For an LLC, all reports must be signed by an LLC member or manager given signing authority by the operating agreement of the LLC if the wastewater discharge will occur on property owned by an LLC.

   ii. To be considered a duly authorized representative, all the following must be completed:

      a. The authorization is made in writing by a person described above or in Standard Provisions.

      b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated Wastewater System or activity, such as the position of plant manager, operator of a waste management unit, superintendent, or position of equivalent responsibility (a duly authorized representative may thus be either a named individual or any individual occupying a named position).

      c. The written authorization is submitted to the Central Coast Water Board.

6. All reports/documents and laboratory data must be submitted electronically as specified in the MRP and notice of applicability.

D. Monitoring Requirements

The Discharger must comply with the MRP issued with the notice of applicability, and any future revisions, as specified by the Central Coast Water Board Executive Officer. A general MRP is provided as Attachment D.

VII. Enforcement

A. Violations

Violations of these General Permit requirements may result in enforcement actions as authorized under the California Water Code.

B. Technical and Monitoring Reports

All technical and monitoring reports submitted pursuant to this General Permit are required pursuant to section 13267 of the California Water Code including the imposition of administrative civil liability pursuant to Water Code section 13350. Failure to submit reports in accordance with schedules established by this General Permit or attachments to this General Permit, or failure to submit a report of sufficient technical

quality to be acceptable to the Central Coast Water Board Executive Officer, may subject the Discharger to enforcement action pursuant to section 13268 of the California Water Code.

VIII. Effective Date of the General Permit

This General Permit takes effect upon Central Coast Water Board adoption.

I, Matthew T. Keeling, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of the General Permit adopted by the California Regional Water Quality Control Board, Central Coast Region on September 25, 2020.

Matthew T. Keeling
Executive Officer

ECM/CIWQS =
GeoTracker No. =
ECM Subject Name = General WDRs for Large Domestic WWTP, Permit No. R3-2020-0020
R:\RB3\Shared\WDR\General WDRs for Large Domestic WWTP\General Order\For Public Comment\R3-2020-0020_June 16.docx

ATTACHMENT A
DEFINITIONS

7-day average
Calculated as the average concentration of the results for the last seven calendar days. If only one sample is collected within a seven-day period, then that one sample becomes the seven-day average value.

25-month rolling median
The median is the value separating the higher half from the lower half of a data sample. For a data set, it may be thought of as the "middle" value. A 25-month rolling median is determined by using the most recent twenty-five months of data.[18]

30-day average
The arithmetic mean of measurements recorded during a calendar month. If only one sample is collected in a calendar month, then that sample measurement is the 30-day average concentration.

Beneficial uses
The uses of water protected against degradation, such as: domestic, municipal, agricultural and industrial supply; hydropower generation; recreation; aesthetic enjoyment; navigation and preservation of fish and wildlife, and other aquatic resources or preserves. Existing beneficial uses are uses that were attained in the surface or groundwater after Nov. 28, 1975 and potential beneficial uses are uses that would develop in the future through control measures.

Biosolids
Sludge that has undergone enough treatment and testing to qualify for reuse pursuant to the USEPA Part 503 Biosolids Rule (Code of Federal Regulations, title 40, part 503).

Day
The mean solar day of 24 hours beginning at mean midnight. All references to “day” in this General Permit are calendar days.

Constituents of emerging concern
Chemicals in personal care products; pharmaceuticals including antibiotics; antimicrobials; industrial, agricultural, and household chemicals; hormones; food additives; transformation products; inorganic constituents; and nanomaterials.

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[18] Steps for determining the 25-month rolling median:

a. Order 25-months of data from least to greatest. Put the smallest value first and arranging the values so that each following value is greater than the previous one.
b. Find the middle number.
    - If there is an odd number of values, locate the middle number. This is the median.
    - If there is an even number of values, find the two middle numbers. Average of the two middle numbers. This is the median.

Constituent
An informal term used to describe a detectable element or component or attribute of waste or effluent.

Contaminant
Any physical, chemical, biological, or radiological substance or matter in air, water, or soil.

Domestic wastewater
Wastewater from households, commercial establishments, and industries. Combined sewer/separate storm overflows are included in this category.

Flow weighted sample
A sample collected at varying time intervals (average interval one hour or less) so that each sample represents an equal portion of the cumulative flow. The duration of the sampling period will be specified in the MRP.

Land application area
The areas where wastewater is applied to land. Ponds are not considered land application areas.

Monthly average flow rate
The total discharge by volume during a calendar month divided by the number of days in the month that the wastewater system was discharging. This number must be reported in gallons per day or million gallons per day.

Pesticide
Any substance intended to control, destroy, repel, or otherwise mitigate a pest. The term pesticide is inclusive of all pest and disease management products, including insecticides, herbicides, fungicides, nematicides, rodenticides, algicides, etc.

Priority pollutant
A set of chemical pollutants USEPA regulates, and for which USEPA has developed analytical test methods. The current list of priority pollutants can be found at Code of Federal Regulations, title 40 part 423, Appendix A.

Pollutant
Something that pollutes. A substance introduced into the environment that has undesired effects, or adversely affects the usefulness of a resource.

Recycled water
Water that is used more than one time before it passes back into the natural hydrologic system and is suitable for a beneficial use.

Sample maximum
The highest measurement recorded for any grab or composite sample collected during a day in a calendar month.

Sludge
The solid, semisolid, and liquid residues removed during primary, secondary, or other wastewater treatment processes. Solid waste is the grit and screenings generated during preliminary treatment. Residual sludge is sludge that will not be subject to further treatment at the Wastewater System.

Time-weighted Sample
A sample collected at equal time intervals, with a maximum interval of one hour.

Title 22 Engineering Report
Report that describes how a project will comply with the Water Recycling Criteria contained in California Code of Regulations, title 22, sections 60301 through 60355, inclusive and compliance with title 17 for cross connection control.

ATTACHMENT B
PERMIT APPLICATION PROCESS SUMMARY

The Discharger must complete the following steps:

Step 1: Feasibility Analysis:

- Evaluate the feasibility of connecting the discharge to a regional collection system.
- If it isn't feasible to connect to regional system, prepare a conceptual wastewater plan and go to Step 2.

Step 2: Set up a Meeting with Central Coast Water Board Staff to Discuss the Following:

- Conceptual wastewater plan including wastewater plan for characterization, treatment, and disposal.
- Water balance precipitation value.
- Threat and complexity/application fee.
- Is a title 22 Engineering Report needed?
- Is groundwater monitoring needed?
- Is the Sanitary Sewer System General Permit applicable?
- What level of operator certification may be required?
- California Environmental Quality Act status.
- Application and monitoring report procedures.

Step 3: Submit Permit Application that Includes:

- Completed application (also referred to as a report of waste discharge) and Form 200 or notice of intent.
- Application fee payment.
- Technical report (prepared consistent with the guidance in Attachment C, or as directed by Central Coast Water Board staff).
- Title 22 Engineering Report (if recycling).

Step 4: Central Coast Water Board Permit Application Review:

- If the application is complete, a notice of applicability will be prepared.
- If the application is incomplete, Central Coast Water Board staff will notify the Discharger.

Step 5: Notice of Applicability for Enrollment in the General Permit Issued:

- The notice of applicability authorizes the wastewater discharge consistent with the General Permit, additional requirements included in the notice of applicability, and conditionally accepted title 22 Engineering Report (if applicable).
- The notice of applicability will specify compliance criteria, monitoring requirements, and reporting requirements. Electronic reporting will be required.

ATTACHMENT C
PERMIT APPLICATION FORMAT

The information presented in the permit application (also referred to as a report of waste discharge) is relied upon by staff to prepare the notice of applicability for coverage by this General Permit for Discharges from Domestic Wastewater Systems with monthly average flow rates greater than 100,000 gallons per day in the central coast region. The Discharger must ensure that the information presented in the application is accurate. Misstatements, errors, or omissions that exist in the application may be included in the notice of applicability and become enforceable.

Waste discharge requirement permits are generally updated at 10 or 15-year intervals depending on the waste's potential to impact water quality. The application must state realistic growth projections. Underestimating growth may result in additional or more frequent permitting requirements. Overestimating growth will result in the need for the Discharger to prepare more treatment, storage, and disposal capacity than might otherwise be immediately required.

Dischargers must submit an application that is consistent with the application format and instructions provided on the Central Coast Water Board webpage:

https://www.waterboards.ca.gov/centralcoast/water_issues/programs/wastewater_permitting/

Appendix J: Treatment Alternatives

Overview of Secondary Treatment Alternatives

The function of secondary (biological) treatment is to remove biodegradable organic material (BOD) and nutrients (nitrogen and/or phosphorus). BOD removal is achieved using an aerobic process where microorganisms, primarily bacteria, oxidize the organic matter into simpler products carbon dioxide and water.

Biological nitrogen removal is achieved through a multi-step process. In the first step, ammonia is oxidized to nitrate (via nitrite) by ammonia oxidizing bacteria (AOB). The nitrate is subsequently reduced to nitrogen gas by denitrifying bacteria (DNB). Air, which is required for AOB for nitrification, is provided to the biological process typically using fine bubble diffusers in the oxic zones.

The denitrification process requires organic carbon as the electron donor. The primary carbon source will be from the organic load in the influent to the biological process (i.e., where the BOD is low), exogenous (supplemental) carbon must be provided. This is often provided using methanol or glycerol. In recent years, however, fermentation of either primary sludge (where primary clarifiers are included in the process design) or mixed liquor have effectively been utilized to supply organic carbon for biological processes. Therefore, the inclusion of primary or advanced primary treatment should be carefully considered ensuring sufficient organic carbon is consistently available in the biological treatment process.

Enhanced biological phosphorus removal (EBPR) is accomplished by including anaerobic zones prior to the anoxic zones. Under anaerobic conditions, polyphosphate accumulating bacteria release phosphorus. Under subsequent oxic conditions, these bacteria take up more phosphorus than required for growth. This excess phosphorus is stored in the bacterial cells as polyphosphate storage polymers.

To achieve the effluent quality required based on the range of end-use options, it is recommended that the biological treatment process at the WWTP be designed to achieve both BOD and nutrient removal. Nutrient removal will likely only include nitrogen removal since phosphorus removal is typically required only for a few inland surface water (non-ocean) discharges to sensitive water bodies.

Biological treatment unit operations and technologies can be grouped into three categories: suspended growth systems (containing bacteria in floc), fixed film processes (consisting of only biofilms and no floc), and hybrid systems (containing both floc and a biofilm). Several options were considered under each of the three categories. An overview of these process/technology options used to achieve biological treatment at the WWTP is presented in the following sections.

Suspended Growth Biological Treatment Technologies

Activated Sludge

One of the most common suspended growth processes for municipal wastewater treatment is the activated sludge (AS) process. At the center of the AS process is a reactor tank where influent wastewater is mixed with the microbial suspension (mixed liquor). The mixed liquor from the reactor is directed to the sedimentation tanks (or clarifiers) where the biomass settles. The settled concentrated biomass is returned to the biological process as Return Activated Sludge (RAS). A portion of the concentrated biomass is wasted from the biological process as Waste Activated Sludge (WAS) to maintain a target solids retention time (SRT). Activated sludge systems have multiple tanks which are sized to achieve BOD removal and/or biological nutrient removal (BNR). BNR is accomplished by sizing and configuring a series of anaerobic cells phosphorus removal), anoxic cells nitrogen removal), and oxic cells sized for complete nitrification (ammonia removal). BNR can be designed for nitrogen removal only and nitrogen plus

phosphorus removal. Typical BNR configurations include the Modified Lutzak- Ettinger (MLE) process, 4 or 5-stage Bardenpho process.

Sequencing Batch Reactor

SBR is a batch operation activated sludge technology that has been widely used since the late 1970s after development of simple programmable logic controllers (PLCs), level sensors, and automatic valves. This technology is particularly useful for smaller communities and industrial plants with intermittent flows. SBRs combine mixing, aeration, and clarification in a single tank utilizing fill, drain and aeration controls. Basic SBRs employ multiple steps: fill, react (aeration), settle and decant. An idle phase is sometimes included in the cycle following the settle step where concentrated mixed liquor can be wasted from the SBR. In the absence of an idle stage, mixed liquor wasting may be used to remove MLSS from the SBR. In the absence of an idle stage, mixed liquor wasting may be used to remove MLSS from the SBR. The complete range of biological processes (BOD removal, biological nitrogen removal, and enhanced biological phosphorus removal) are readily accomplished in an SBR by effective management of the react cycle to include the anaerobic and/or anoxic phases in addition to the aerobic phase, as required. Typical experience with SBRs indicates that a better effluent quality can be achieved compared to activated sludge processes. The batch operation of SBRs is designed based on the projected maximum month and maximum day flows and loads. SBRs have the flexibility to accommodate large variations in flow by variation of the batch cycle periods, if necessary. Nonetheless, like all other biological processes considered herein, influent flow equalization will be required for the WWTP to treat flows higher than the maximum day condition.

Oxidation Ditch

Oxidation ditch systems consist of a ring or unidirectional channel containing mechanical and aeration equipment. The influent is introduced into the flowing mixed liquor. Oxidation ditches typically employ a longer SRT, and hydraulic retention time (HRT) than conventional activated sludge. The longer HRT (typically 24 hours) provides for a more stabilized sludge, an ability to handle a wider range of flows and loadings, and greater protection from shock loads.

BNR can be incorporated into oxidation ditches by providing separate anaerobic and anoxic zones. BNR can also be accomplished with two oxidation ditches alternating between anoxic and oxic conditions where the influent feed alternates between ditches.

Aerated Lagoons/Pond System

Wastewater treatment ponds are generally large earthen basins lined with plastic, concrete, or clay that utilize settling and aeration to treat municipal wastewater. Modern pond treatment systems generally use a facultative, partial-mix design or an advanced wastewater pond system design such as Advanced Integrated Pond System (AIPS) or Advanced Integrated Wastewater Pond System (AIWPS).

In the facultative, partial-mix pond system surface mechanical aerators are used to provide enough aeration to transfer the amount of oxygen required for biological treatment, but not maintain solids in suspension. Algal growth in the ponds assist in providing dissolved oxygen for the microbial community but can also impede biological treatment and increase solids in the effluent if not controlled. Solids in the influent wastewater and a portion of the solids produced during biological treatment will settle in the bottom of the ponds. Due to the layering of available oxygen, anaerobic conditions at the bottom of the ponds will promote some anaerobic decomposition of the settled solids or "sludge". Eventually the ponds

will need to be dewatered or dredged to remove the sludge in order to maintain effluent quality. Typically, facultative, partial-mix ponds are 10 to 16 feet deep.

Fixed Film Biological Treatment Technologies

Trickling Filters (TF) and Rotating Biological Contactors (RBCs)

Trickling filters are a common, relatively simple, low-energy process that have been used for secondary treatment since the early 1900s. Trickling filters typically consist of concrete or masonry tanks filled with rock or plastic media over which wastewater is spread through low-speed distributor arms. Depth can vary from 12 to 40 feet, depending on the loading rate and space availability. Trickling filters have a long history of providing treatment to BOD and TSS limits but are not generally able to meet low nitrogen limits without multiple stages and methanol addition. Because of uncontrollable sloughing events, where the microbial film detaches from the media increasing turbidity and solids concentrations in the effluent, trickling filters are typically combined with a small activated sludge basin for greater control of final effluent quality. This modification is called a Trickling Filter Solids Contact (TFSC) process and is the process currently used at the existing WWTP.

Rotation biological contactors (RBCs) are a variation of the trickling filter wherein the media is rotated through the wastewater, instead of pumping the wastewater and spreading it over the media. RBCs consist of tanks with closely spaced plastic discs attached to a horizontal shaft, which rotates the discs slowly through the wastewater. Typically, about 40 percent of the disc is submerged in the tank at any time. The biofilm grows on the discs and benefits from the alternating exposure to wastewater and air.

When compared to suspended growth activated sludge systems, trickling filters and RBCs have the advantages of lower energy requirements, simpler operation, better sludge thickening properties, and better recovery from shock loads. Disadvantages include higher effluent BOD and TSS concentrations and turbidity, uncontrolled solids sloughing requiring the combination with a small activated sludge basin, and difficulty in accomplishing nitrogen or phosphorus removal. Because of these disadvantages, TFs and RBCs were not carried forward for further evaluation.

Moving Bed Biofilm Reactors (MBBR)

MBBR is an attached growth process where a biofilm is attached to floating synthetic media. Excess bacteria slough off from the media and are separated downstream using sedimentation tanks or dissolved air flotation tanks. The floating media basin is aerated similar to an activated sludge basin. Mechanically mixed anoxic zones can be included for biological nitrogen removal.

The primary advantage of MBBR is a large biomass, which can treat high organic load and maintain stable performance over widely varying influent load and temperature conditions. However, the media are relatively expensive and the appurtenances required as part of the MBBR process (e.g., media retention screens) are not only expensive, but increase the maintenance requirements of a treatment facility.

Furthermore, purchasing the synthetic media increases the capital cost of this technology compared to others. Complications with simultaneously retaining the media within the basin and allowing for surface foam removal increase operational complexity. For these reasons, MBBR technology was not carried forward for further evaluation.

Combined Secondary/Tertiary Treatment Alternatives

Membrane Bioreactor (MBR)

MBR is a technology that has become popular within the last 10-15 years. MBR includes biological treatment with activated sludge. Solids separation is accomplished with membranes integral to the biological system rather than conventional secondary clarifiers. The submerged membranes are operated under vacuum with product water drawn through the membranes with permeate pumps or using a gravity-assist siphon system. The solids remaining on the surface of the membranes are returned to the head of the aeration basins. A portion of the solids are wasted just as with conventional activated sludge. MBRs require finer screening (2mm screens) than conventional activated sludge to remove hair and other fine materials that can wrap around and clog the membranes.

MBR membranes provide a barrier to solids; therefore, an MBR produces higher quality product water (better than conventional tertiary filtration) and does so more consistently than conventional activated sludge clarifiers, which are subject to upsets. The positive solids barrier also allows operation at high solids loading rates, which results in a smaller treatment footprint.

A summary of MBR advantages compared to convention treatment with SBR are summarized below:

- Provides simultaneous secondary and tertiary treatment
- Provides superior and consistent product water quality that is equivalent to membrane filtration
- Produces water quality sufficient for RO feed
- Smaller footprint than conventional treatment
- Positive solids barrier results in greater process stability than conventional treatment
- Smaller volume of air scrubbed for odor control than conventional treatment

MBR technology provides a number of significant advantages and the capital cost is competitive with conventional treatment and is less costly when compared to conventional secondary treatment followed by membrane filtration to provide the same product water quality. One disadvantage of the MBR option is that operating costs are higher than conventional treatment.

Comparison of Secondary (Including MBR) Treatment Technologies

For the purposes of determining which secondary treatment process will best meet the requirements of the SMCSD in both the near term and in the future, a comparative analysis was performed on the seven (7) processes described in the previous sections of this report. Ten (10) distinct evaluation criteria were evaluated for each of the secondary processes with consideration given based on the needs and requirements of the WWTP infrastructure and operations/maintenance requirements. A weighted score, based on a maximum of 100, was assigned to each criterion. Criteria deemed to have greater importance were weighted higher. The criteria were based on treatment compatibility with the District's goals to capture the critical elements of each unit process. In the Evaluation Matrix, each alternative was assigned scores for each criterion using a 1-5 scale, in accordance with the following:

Score	Definition
5	Satisfies Projects needs with multiple advantages
4	Satisfies Projects needs with few advantages
3	Satisfies Projects needs
2	Satisfies Projects needs with few disadvantages
1	Satisfies Projects needs with multiple Disadvantages

The results of the comparative analysis are summarized in Table Nos C1 and C2.

TABLE C1. SECONDARY TREATMENT- SUSPENDED GROWTH MATRIX

Secondary Treatment - Suspended Growth Biological Treatment Systems											
Criteria	Weight(%)	Activated Sludge (AS)		Sequencing Batch Reactor (SBR)		Oxidation Ditch		Retro-Fitted Aerated Ponds		Membrane BioReactor (MBR)	
		Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted
Capital Cost	20	2.5	0.5	4	0.8	3	0.6	4	0.8	3.5	0.7
Operating Cost	20	4	0.8	4	0.8	3	0.6	3	0.6	3	0.6
Odor Mitigation	5	4	0.2	5	0.25	4	0.2	3	0.15	5	0.25
Staff Requirement	5	3	0.15	3	0.15	4	0.2	4	0.2	4	0.2
Reliability	10	4	0.4	4	0.4	4	0.4	3.5	0.35	5	0.5
Construction Feasibility	10	3	0.3	4	0.4	4	0.4	5	0.5	4	0.4
Ease of O&M	5	3	0.15	3	0.15	4	0.2	3	0.15	4	0.2
Adaptability/ Scalability	5	2	0.1	4	0.2	2	0.1	3	0.15	4.5	0.225
Effluent Quality	10	4	0.4	4	0.4	4	0.4	3.5	0.35	5	0.5
Footprint	10	3	0.3	4	0.4	2	0.2	5	0.5	4	0.4
Total	**100**		**3.3**		**3.95**		**3.3**		**3.75**		**3.975**
***Membrane BioReactor is a combined secondary/tertiary treatment system**											

TABLE C2. SECONDARY TREATMENT- FIXED FILM MATRIX

Secondary Treatment - Fixed Film Biological Treatment System							
Criteria	Weighted(%)	Trickling Filters (TF)		Rotating Biological Contactors (RBC)		Moving Bed Biofilm Reactors (MBBR)	
		Raw	Weighted	Raw	Weighted	Raw	Weighted
Capital Cost	20	2.5	0.5	2.5	0.5	2	0.4
Operating Cost	20	3	0.6	3	0.6	2	0.4
Odor Mitigation	5	2.5	0.125	4	0.2	4	0.2
Staff Requirement	5	4	0.2	3	0.15	2.5	0.125
Reliability	10	3	0.3	3	0.3	4	0.4
Construction Feasibility	10	4	0.4	3	0.3	4	0.4
Ease of O&M	5	2.5	0.125	3	0.15	3	0.15
Adaptability/ Scalability	5	3	0.15	2	0.1	4	0.2
Effluent Quality	10	3	0.3	3	0.3	4.5	0.45
Footprint	10	4	0.4	3	0.3	4	0.4
Total	**100**		**3.1**		**2.9**		**3.125**

Summary of Tertiary Treatment Alternatives

Tertiary treatment processes are typically used after biological treatment to produce higher quality effluent, which is typically driven by more stringent discharge or reuse requirements to achieve regulatory compliance. Depending on the ultimate use for the treated water, filtration is often required after secondary treatment processes to reduce suspended solids including particulate biochemical oxygen demand concentrations. Other tertiary treatment processes (activated carbon, adsorption, ion exchange, gas stripping, etc.) include techniques for reduction of specific inorganic (e.g., heavy metals) or organic constituents required for specific industrial reuses (e.g., cooling towers, process water). These tertiary treatment options ae less common and not typically utilized for municipal wastewater treatment. The following sections describe the tertiary treatment processes that were considered for the proposed WWTP expansion/upgrade including the following processes:

- Disc Filters
- Media Filters
- Membrane Filters

Disc Filters

Depending on the manufacturer, disc filters use woven cloth, stainless steel mesh, or plastic film to remove suspended particulate materials from wastewater by mechanical sieving, or physically passing the liquid through the filter material while retaining the particles. A series of parallel disc are arranged in a tank. Depending on the manufacturer, wastewater is filtered by either flowing outward through the filters or inward through the filters. All or a portion of the discs are submerged. As solids accumulate on the media, head loss through the filter increases. The filters are cleaned with spray bars or a vacuum system when the head loss reaches limits set by the operators.

Media Filters

Media filters have various designs, including up-flow or downflow operation, continuous or intermittent backwash, and various bed depths, flow controls, and configurations. Media filtration involves the removal of suspended particulates from the wastewater by passing them through a filter bed made up of different types of depths of granular material (e.g., sand, anthracite, synthetic).

Membrane Filters

Where disc and media filters remove suspended and colloidal particulates, typically achieving effluent turbidity of approximately 1.0 NTU, membrane filters provide a higher level of removal with effluent turbidity of 0.1NTU. Membrane processes (in order of increasing removal) include microfiltration and ultrafiltration.

The major components of the Membrane Filtration System (MFS) include membranes trains, clean-in-place (CIP)/maintenance wash (MW) systems, CIP neutralization systems, and backwash systems. The actual membranes consist of a thin skin with a porous structure, which is formed into flat sheets, tubes, or hollow fibers.

There are two membrane filtration configurations. The first consists of cassettes of exposed hollow fibers or flat sheets submerged in the wastewater. A pump produces a vacuum to draw filtered effluent through the membrane. The second configuration consist of hollow fibers contained in pressure vessels arranged on racks. Pumps are used to force filtered effluent through the membranes under pressure.

As the constituents from the wastewater build on the membrane surface, performance is reduced, and the membranes must be backwashed and/or chemically cleaned.

Membrane filtration is the only tertiary filtration technology that provides adequate pretreatment prior to reverse osmosis when advanced treatment is required.

Comparison of Tertiary Treatment Technologies

For the purposes of determining which tertiary treatment process will best meet the requirements of the SMCSD in both the near term and in the future, a comparative analysis was performed on the three (3) processes described in the previous sections of this report. Ten (10) distinct evaluation criteria were evaluated for each of the tertiary processes with consideration given based on the needs and requirements of the WWTP infrastructure and operations/maintenance requirements. A weighted score, based on a maximum of 100, was assigned to each criterion. Criteria deemed to have greater importance were weighted higher. The criteria were based on treatment compatibility with the District's goals to capture the critical elements of each unit process. In the Evaluation Matrix, each alternative was

assigned scores for each criterion using a 1-5 scale, in accordance with the following:

Score	Definition
5	Satisfies Projects needs with multiple advantages
4	Satisfies Projects needs with few advantages
3	Satisfies Projects needs
2	Satisfies Projects needs with few disadvantages
1	Satisfies Projects needs with multiple Disadvantages

The results of the comparative analysis are summarized in the following Table No C3. Based on the results of the analysis, the Disc Filter was determined to be the highest-ranking tertiary treatment process and is recommended for incorporation into the SMCSD WWTP expansion & upgrade project.

TABLE C3. TERTIARY TREATMENT - FILTRATION MATRIX

Tertiary Treatment - Filtration Treatment Systems							
Criteria	Weighted(%)	Disc Filters		Media Filters		Membrane Filters	
		Raw	Weighted	Raw	Weighted	Raw	Weighted
Capital Cost	20	4	0.8	3	0.6	2	0.4
Operating Cost	20	3	0.6	3	0.6	2	0.4
Odor Mitigation	5	5	0.25	5	0.25	5	0.25
Staff Requirement	5	4	0.2	4	0.2	3	0.15
Reliability	10	3	0.3	3	0.3	4	0.4
Construction Feasibility	10	4	0.4	3	0.3	4	0.4
Ease of O&M	5	4	0.2	4	0.2	3	0.15
Adaptability/ Scalability	5	4	0.2	3	0.15	3	0.15
Effluent Quality	10	4	0.4	4	0.4	5	0.5
Footprint	10	4	0.4	3	0.3	2.5	0.25
Total	**100**		**3.75**		**3.3**		**3.05**

Summary of Disinfection Alternatives

The disinfection technologies available for recycled wastewater systems typically consist of ozone, ultraviolet UV) light, pasteurization, and chlorination/de-chlorination. Of the disinfection options considered for the SMCSD WWTP expansion/upgrade, the UV and chlorination/de-chlorination systems were identified for consideration since both are proven, reliable disinfection processes that can be operated in a relatively safe manner and, if followed by appropriate tertiary treatment processes, can meet Title 22 unrestricted reuse-quality effluent. Ozone is not recommended for further evaluation because while it is commonplace for potable water disinfection, the use of ozone for wastewater

disinfection is scarce. Ozone also typically has the highest life cycle cost of the commonly utilized technologies. Pasteurization is also not recommended for further evaluation because it is uncommon for use in wastewater disinfection (other than biosolids generation) and requires significant power consumption and heat generation equipment. A brief summary of the disinfection alternatives that were considered in conjunction with the SMCSD WWTP expansion/upgrade is presented in the following sections of this document.

UV Disinfection

Ultraviolet (UV) disinfection uses UV radiation (light) to destroy or inactivate disease-causing organisms. Typically, UV disinfection systems for wastewater are designed in open channels with banks of lamps mounted in modules or support racks. The wastewater is treated by UV radiation as it flows by gravity through the channel. UV disinfection can also be used in pressurized systems, where the UV lamps are contained in vessels and water is pumped through the system of vessels at a specified flow rate.

UV systems evolved from low pressure systems, which require more lamps, to medium pressure systems, which require fewer lamps but use more energy. The latest generation of UV utilized low pressure systems and high intensity lamps, which provides a good compromise of fewer lamps than the previous low-pressure systems and less energy than medium-pressure systems. UV systems include in- situ lamp chemical wiping mechanism to minimize the need to remove lamps for manual cleaning.

While several configurations of UV disinfection exist for recycled water (open channel, in-vessel, and microwave), in-vessel UV was evaluated as the UV option for this facility based on the applicability for this size of facility. In-vessel UV has been approved by the State Department of Public Health for recycled water disinfection. It also has a small footprint requirement, requires minimal operator attention and reduced maintenance compared with chlorination, and is not known to form disinfection byproducts (DBPs).

UV design criteria is based primarily on 1) UVT, which is a measure of the quantity of UV light transmittable through the wastewater, which could be reduced by color, turbidity, certain metals, TDS, TSS, and other factors, and 2) UV dose, which is determined for each target organism (bacteria and/or virus in this case) according to Title 22 regulations. Since UVT data for future filtered secondary effluent is not available, an assumption of 55 percent UVT for post-media filtration was made according to National Water Research Institute (NWRI) 2012 guidelines. If membrane filtration is used, a design UVT of 65 percent could be used (per NWRI 2012 guidelines), which could reduce the sizing of the units by as much as 40 percent and reduce the O&M requirements.

The minimum required UV dose for Title 22 tertiary recycled water applications is significantly lower for effluent that has received membrane filtration compared to media filtration (80 versus 100 millijoules per square centimeter [mJ/cm^2]). For this evaluation, media filtration was assumed for a more conservative analysis.

Equipment reliability must be considered when designing a UV system. For open channel systems, the NWRI guidelines recommend a standby bank per channel or a standby channel be installed to ensure that the specified UV dose is provided under worst-case conditions with one bank of lamps out of service. For in-vessel systems, Carollo recommends a standby reactor be provided.

Because UV system sizing is very manufacturer-specific, during preliminary design a refinement of the UV disinfection design criteria would be made based on the selected filtration alternative, and up to three manufacturers would be considered. At that time, an open channel installation could also be considered to determine the most cost-effective alternative for the City.

An advantage of UV disinfection is that it is a physical process rather than a chemical process, therefore, no chemicals are used to disinfect the water and no disinfection residual is created that could negatively impact the receiving water. UV disinfection also typically requires a smaller footprint than sodium hypochlorite disinfection. Disadvantages include higher power usage than sodium hypochlorite disinfection and increased O&M related with bulb replacement and cleaning. Safety considerations associated with UV disinfection include operator exposure to UV light and the potential for mercury release from lamp bulbs if damaged.

Chlorination/De-chlorination

Disinfection with chlorine or its compounds is performed in a plug flow chlorine contact basin. The disinfectant is mixed with treated effluent at one end of the basin. Chlorine contact basins include baffling to lengthen the flow path of the effluent traveling through the basin and to minimize short circuiting. Chlorine disinfection design is based on a formula: CT = (Residual Chlorine Concentration "C") X (Detention Time "T"). The CT required for disinfection per Title 22 requirement is 450 mg-min/L with a modal contact time greater to or equal to 90 minutes.

Chlorine gas is seeing reduced applications due to the safety requirements for storage and feed rooms that house the chlorine gas and the chlorine gas scrubbing equipment; therefore, chlorine disinfection is commonly performed using liquid sodium hypochlorite.

Disinfection of effluent with organic precursors can lead to formation of trihalomethane (THM) carcinogens over prolonged contact time. De-chlorination is used to prevent prolonged contact time and limit THM formation and is required for any discharge reuse options and ocean discharge. Introducing total dissolved solids (TDS) to the product water by way of disinfection with sodium hypochlorite and de-chlorination with sodium bisulfite is a disadvantage of chlorine disinfection.

While wastewater chlorination can be achieved through different systems and configurations (open concrete basin or in-pipe configurations using chlorine gas, delivered sodium hypochlorite, onsite-generated sodium hypochlorite), for the size of this facility, an open concrete basin using delivered sodium hypochlorite is recommended. Chlorine gas has additional O&M and safety considerations, and onsite-generated sodium hypochlorite requires additional equipment and increased power consumption. De-chlorination may be required prior percolation pond disposal and to maintain chlorine residual control for the recycled water distribution system. For de-chlorination (when required), delivered sodium bisulfite is recommended.

The major components of a sodium hypochlorite/sodium bisulfite disinfection system are a chlorine contact basin, sodium hypochlorite and sodium bisulfite storage tanks for bulk deliveries, chemical metering pumps, chemical piping, chemical mixing and/or injector units, and a chemical feed control system. It is assumed that the new metering pumps and controls would be located in a Chemical Feed Building located adjacent to the chlorine contact basin.

Comparison of Disinfection Techniques

For the purposes of determining which disinfection treatment process will best meet the requirements of the SMCSD in both the near term and in the future, a comparative analysis was performed on the two (2) processes described in the previous sections of this report. Ten 10) distinct evaluation criteria were evaluated for each of the disinfection processes with consideration given based on the needs and requirements of the WWTP infrastructure and operations/maintenance requirements. A weighted score, based on a maximum of 100, was assigned to each criterion. Criteria deemed to have greater

importance were weighted higher. The criteria were based on treatment compatibility with the District's goals to capture the critical elements of each unit process. In the Evaluation Matrix, each alternative was assigned scores for each criterion using a 1-5 scale, in accordance with the following:

Score	Definition
5	Satisfies Projects needs with multiple advantages
4	Satisfies Projects needs with few advantages
3	Satisfies Projects needs
2	Satisfies Projects needs with few disadvantages
1	Satisfies Projects needs with multiple Disadvantages

The results of the comparative analysis are summarized in Table No C4. Based on the results of the analysis, the UV disinfection process was determined to be the highest-ranking disinfection treatment process and is recommended for incorporation into the SMCSD WWTP expansion & upgrade project.

TABLE C4. DISINFECTION TREATMENT MATRIX

Disinfection Treatment Systems					
Criteria	Weighted(%)	UV Disinfection		Chlorine Disinfection	
		Raw	Weighted	Raw	Weighted
Capital Cost	20	3	0.6	3	0.6
Operating Cost	20	2	0.4	3	0.6
Odor Mitigation	5	5	0.25	4	0.2
Staff Requirement	5	3	0.15	3	0.15
Reliability	10	3	0.3	4	0.4
Construction Feasibility	10	4	0.4	3	0.3
Ease of O&M	5	4	0.2	3	0.15
Adaptability/ Scalability	5	4	0.2	3	0.15
Effluent Quality	10	4	0.4	3	0.3
Footprint	10	4	0.4	3	0.3
Total	**100**		**3.3**		**3.15**

Summary of Biosolids Treatment Alternatives

Biosolids which are generated at the existing SMCSD WWTP currently accumulate in the pond system and are periodically dredged and removed. With the proposed expansion/upgrade, the majority of the solids generated will come from the secondary treatment process. An additional but smaller source of solids will be generated by the tertiary processes. Several solids treatment and handling processes can be used to thicken, stabilize, and dewater wastewater sludge. The type of solids treatment recommended is based on the type of secondary sludge produced and, as discussed in a previous section of this document, the intended disposal method (on-site or off-site) and the level of treatment achieved, whether Class A EQ,, Class A, Class B, or less than Class B (unclassified). Currently, the biosolids that are generated at the SMCSD

WWTP are transported to a local landfill and disposed of as either waste or a soil amendment and composted with other organic materials. Under the current regulations, there are no requirements for stabilization of the biosolids prior to transport to an approved landfill. If, in the future, the regulations change and stabilization of the biosolids is required, then one viable option for biosolids disposal may be land application. In San Luis Obispo County, land application of Class B biosolids is allowed on a case-by-case basis as approved by the San Luis Obispo County Environmental Health Services. For the purposes of the analyses summarized herein, it is assumed that all biosolids that are produced by the upgraded SMCSD WWTP will be transported to an approved landfill without meeting the Class B stabilization requirements. Although no biosolids stabilization is anticipated in the proposed WWTP expansion/upgrade, there will still be a requirement for dewatering and thickening of the biosolids, prior to transport to an approved landfill.

The proposed additional biological activity associated with any of the secondary treatment processes discussed in previous sections of this document will result in a higher level of treatment and the production of a greater volume of sludge than the existing aerated pond system. With limited area for biosolids storage and increasingly stringent regulatory climate for biosolids, sludge dewatering is typically an economically viable process to reduce the moisture content of the biosolids prior to truck hauling and disposal (e.g., landfill disposal). The two most common dewatering options are solar drying through sludge drying beds and mechanical dewatering. Mechanical dewatering options include screw presses, belt filter presses, dewatering container filters (sludge boxes) and centrifuges. For this size facility and because of land availability from conversion of existing ponds), the three (3) recommended options to consider are sludge drying beds, dewatering container filters (sludge boxes), and screw presses. Belt filter presses and centrifuges are not recommended for this size facility due to the additional operator attention and odors associated with the belt filter press and the additional power consumption associated with the centrifuge. A brief summary of the biosolids treatment alternatives that were considered in conjunction with the SMCSD WWTP expansion/upgrade is presented in the following sections of this document.

Sludge Drying Beds

Sludge drying beds are a simple and effective method of sludge dewatering. This method relies on solar energy for evaporation of moisture from the sludge. There are several ways to determine the area of sludge beds needed. Three (3) common methods are: mass loading represented as pounds of solids applied per day per unit area, unit area of sludge drying beds per unit of influent flow, and liquid depth of sludge applied per unit area. For the purpose of this analysis, the first method, mass loading represented as pounds of solids applied per day per unit area, is used.

When the WWTP expansion/upgrade is completed, sludge from the secondary and tertiary treatment processes would be pumped to the new sludge drying beds, where sludge is typically maintained at a shallow depth (e.g., 18 inches). While the biosolids are drying, the liquid is decanted and typically collected and conveyed back to the headworks. After solar drying for between 30 to 90 days (achieving approximately 60 to 80 percent solids), the biosolids are then removed from the sludge drying beds with a front-end loader and stockpiled. The biosolids are then hauled offsite for reuse or disposal.

All sludge transfer and drying operations would be conducted by SMCSD staff. The District currently contracts with a private contractor who has a RWQCB permit to haul the biosolids to an approved landfill. Dewatered biosolids could be stockpiled in a lined stockpile area, which will reduce hauling costs, protect the groundwater underlying the facility site, and give the District flexibility when dealing with biosolids disposal. There currently exists an unlined earthen basin that is utilized for sludge drying and storage. This

existing basin could be retrofitted with a new liner to provide protection of the groundwater supplies. Paved access to the floor of the basin and a concrete area for processing, handling and loading of the dried biosolids should be provided.

Dewatering Container Filters (Sludge Box)

Dewatering container filters, commonly referred to as "sludge boxes" can be an excellent sludge dewatering option for smaller utilities who need to dewater sludge in batches, dewatering containers are an alternative that can be relatively inexpensive and simple when compared to other technologies on the market. The most common type of dewatering container is based on a roll-off box design, although any type of container that is water-tight can be made into a "container filter". This includes containers that are commonly referred to as self-dumping hoppers, front, side and rear loaders, and lugger boxes. There are basically two varieties of these dewatering containers: those that have permanent filters and those that use disposable filters.

Within the permanent filter category there are multiple configurations of filter orientation, materials of construction, and filter porosity. The most common type of disposable filter is a needle punched polypropylene geotextile. This material is typically folded in half lengthwise and the ends sewn together creating an "envelope". It is then inserted into a container with the top edges folded over the top sides of the container. Regarding the permanent filter type dewatering box, there is usually a bottom filter and filter support as well as side wall filters. To gain more filter area per unit volume, filters and filter supports are often added to the front wall and back wall, and in some cases a center panel is added with filter media on both sides.

The addition of polymer to liquid waste streams is typically required which significantly improves the ability of dewatering containers to perform efficiently. The process of flocculation causes the fine solids in the sludge to clump together forming large masses that are caught by the filter media in the dewatering container. This process also increases the porosity of the cake that forms in the container.

Dewatering containers are batch type devices and therefore are not designed to keep up with a continuous liquid flow. The main reason to choose a dewatering container is their simple operation. The dewatering container itself has no moving parts. The waste is processed in the same unit in which it is hauled away and dumped, thus limiting the handling of the sludge. The dewatering box will give volume reductions in the 80% to 95% range depending on the percent solids in the sludge. The cake produced by the dewatering box will pass the "paint filter" test and can go to the local landfill. The effluent water from the dewatering box can go back to the headworks of the plant virtually devoid of solids.

Screw Press

On sites that are restricted in size and/or have concerns over groundwater protection from biosolids decant liquid or runoff, a new mechanical dewatering process consisting of a screw press could be installed rather than building sludge drying beds. A screw press consists of a horizontally mounted screw conveyor that moves biosolids down a reduced diameter bowl thereby increasing pressure along the length of the screw press, which results in the dewatering of the biosolids. The main advantages of screw presses are their mechanical simplicity, lower power requirements, and ability to be operated on a 24-hour schedule. Screw presses also require minimal operator attention and have the ability to contain odors. They are typically housed in a dewatering building at an elevated height to allow dewatered sludge cake to drop into a hopper that loads directly into hauling trucks. An additional advantage of screw presses

is the potential to produce Class A biosolids with additional heat and lime addition. If Class A production is desired, the required additional components should also be considered during preliminary design.

Aerobic Digester

Aerobic digestion is a process in sewage treatment designed to reduce the volume of sewage sludge and stabilize the biosolids for subsequent use. Operational parameters include temperature control, oxygen transfer, mixing, solids retention time, pH control, sludge loading characteristics, and tank configuration. Conventional aerobic digestion stabilizes sludge after meeting a minimum solids detention time to prevent odors and reduces pathogens for beneficial uses such as land application or disposed of at nearby solid waste landfills. Aerobic digesters are typically open-air concrete basins. The sludge is typically pumped from the secondary and tertiary treatment process to the aerobic digester which is used to process, and store waste activated sludge (WAS) where a solid's retention time between 21 to 40 days is achieved. Aerobic digesters are generally operated between 15-35 degrees Celsius for optimal stabilization. The aerobic digestion process includes aeration (coarse/fine bubble) to supply oxygen to the bacteria breaking down the sludge, deal with odor prevention, and keep the digester contents mixed. Most aerobic digestion processes are utilized at facilities with treatment capacities less than five MGD.

Aerobic digestion is a bacterial process occurring in the presence of limited oxygen. Aerobic digestion is operational at a dissolved oxygen (DO) between 0.5 to 1.0 mg/L in order to promote competition of microorganisms for a limited oxygen supply in order to achieve biomass or volatile solids destruction. Bacteria consume organic matter and converts it into carbon dioxide. Once the organic matter is reduced, the bacteria die off, and become food for other bacteria. The volume of sludge is reduced through this process. The digestion process is typically in a stabilized/thickened sludge ready to be dewatered. The digestion process can result in up to 90 percent volume reduction. The effluent water is typically pumped back into the headworks of the plant virtually devoid of solids.

The main advantages of aerobic digesters are the increased process control capability, reduced facility footprint, odor mitigation, and improved sludge dewatering characteristics (good separation of the solid and liquid phases) requiring less water to be hauled off site. The main disadvantages of aerobic digesters are increased power cost associated with aeration and mixing along with periodic maintenance, cleaning, and inspection, required for the digester basin(s).

Comparison of Biosolids Treatment Alternatives

For the purposes of determining which biosolids treatment process will best meet the requirements of the SMCSD in both the near term and in the future, a comparative analysis was performed on the four (4) processes described in the previous sections of this report. Ten (10) distinct evaluation criteria were evaluated for each of the biosolids processes with consideration given based on the needs and requirements of the WWTP infrastructure and operations/maintenance requirements. A weighted score, based on a maximum of 100, was assigned to each criterion. Criteria deemed to have greater importance were weighted higher. The criteria were based on treatment compatibility with the District's goals to capture the critical elements of each unit process. In the Evaluation Matrix, each alternative was assigned scores for each criterion using a 1-5 scale, in accordance with the following:

Score	Definition
5	Satisfies Projects needs with multiple advantages
4	Satisfies Projects needs with few advantages
3	Satisfies Projects needs
2	Satisfies Projects needs with few disadvantages
1	Satisfies Projects needs with multiple Disadvantages

The results of the comparative analysis are summarized in Table No C5. Based on the results of the analysis, a "Short List" of the highest ranking biosolids treatment processes were identified for additional consideration. The "Short Listed" biosolids treatment alternatives are discussed in more detail in a subsequent section of this report.

TABLE C5. BIO-SOLIDS HANDLING MATRIX

Bio-Solids Handling Systems									
Criteria	Weighted(%)	Sludge Drying Bed		Dewatering Container Filters (Sludge Box)		Screw Press		Aerobic Digester	
		Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted
Capital Cost	20	5	1	4	0.8	4	0.8	4	0.8
Operating Cost	20	4	0.8	4	0.8	4	0.8	3.5	0.7
Odor Mitigation	5	2	0.1	4	0.2	4	0.2	4	0.2
Staff Requirement	5	2	0.1	4	0.2	4	0.2	4	0.2
Reliability	10	3	0.3	3	0.3	3.5	0.35	4.5	0.45
Construction Feasibility	10	5	0.5	5	0.5	5	0.5	4	0.4
Ease of O&M	5	3	0.15	4	0.2	4	0.2	4	0.2
Adaptability/ Scalability	5	2	0.1	4	0.2	4	0.2	4	0.2
Effluent Quality	10	3	0.3	3	0.3	5	0.5	4	0.4
Footprint	10	3	0.3	4	0.4	5	0.5	4	0.4
Total	**100**		**3.65**		**3.9**		**4.25**		**3.95**

Appendix K: Common Upgrades

Septic Receiving Station

A new septage receiving station is desired by the SMCSD for receiving septage unloaded from hauling vehicles. The receiving station can be a source of revenue for the District and would provide a service to the surrounding sphere of influence. Wastes received could include residential, portable toilet, septage tank, and/or pre-approved industrial wastes. Typically, liquid waste is pumped into a septage receiving station where rags and trash are removed and deposited into a dumpster. Following initial trash removal, grit is removed and deposited into a dumpster. The flow is then combined with the influent wastewater for treatment. Further investigation during future phases of the WWTP upgrade to determine market size (i.e., type, extent of service area, waste strength) as well as design criteria such as hours of operation and desired invoicing features would be used to determine facility size and design requirements.

Headworks with Influent Screens and Grit Removal

The existing WWTP is not equipped with a headworks and all solids and grit that is conveyed to the plant through the sanitary sewer collection system is passed onto the existing treatment ponds where it adversely impacts the treatment processes. Influent screens provide a physical barrier between the influent sewer and the wastewater treatment plant site piping and equipment. The function of influent screens is to remove large solids that potentially could damage downstream treatment equipment. For example, downstream pumps or mechanical mixing and aeration equipment are vulnerable to problems from rags and other large, stringy solids, which potentially could wrap around equipment motor shafts or impellers and cause failures. With equipment out of service, treatment ability is reduced, and it becomes a significant maintenance issue for the facility owners to access and repair the equipment.

The level of treatment is based primarily on the opening size, or space through which the wastewater flows, while retaining solids greater than the opening size. Screens associated with wastewater treatment plants using secondary treatment processes typically have 0.25-inch (6-millimeter) openings. This size provides sufficient screening to protect downstream equipment. The bar screens would operate automatically based on either time or differential water level across the screen. The screenings that are removed from the wastewater by the mechanical screens are deposited onto a conveyor, and the conveyor moves the screenings to a washer compactor where the wet screenings are sprayed with water as they are slowly compacted using a shafted screw. The screenings are dewatered as they are pushed by the screw into a discharge chute. The water removed from the screenings is directed back to the influent and the washed and compacted screenings are deposited into a dumpster for disposal at a landfill. There are several types of screens and many manufacturers offer more than one style.

Critical supporting equipment for screens includes washers, compactors, and dewatering equipment to return organics to the downstream processes, reduce odors, reduce screening volume, and reduced corresponding disposal cost.

Grit in municipal wastewater consists of sand, gravel, coffee grounds, and other heavy, solid, inorganic materials which have specific gravities or settling velocities greater than organic materials in the wastewater. Grit removal is performed to protect downstream mechanical equipment from abrasion,

reduce potential for deposits in pipelines and channels, and reduce frequency of sludge digester leaning caused by grit accumulation. Grit removal is most commonly placed after screening and prior to primary sedimentation and secondary treatment. There are three basic designs for grit removal, which include the following:

- Horizontal flow
- Aerated
- Vortex

Horizontal flow grit chambers use rectangular or square tanks with dimensions based on a straight-line velocity that is long enough to allow grit to settle as the wastewater flows through the tank. Grit is typically removed from horizontal-flow chambers by a conveyor with scrapers, buckets, or plows. With square chambers, grit can be directed to a sump at the side of the tank by a traveling rake or scraper, and then pumped or moved up an incline by a rake mechanism to a de-gritter or classifier to remove organics and dewater.

Aerated grit chambers utilize an aeration tank where spiral velocity is induced and controlled by tank dimensions and aeration supplied to the tank. The chamber is rectangular and designed so wastewater moves through the tank in a spiral pattern. The floor is sloped towards a large grit hopper along the length of the tank. Air diffusers are placed approximately 1 to 2 feet off the bottom of the tank along the steep side of the grit hopper. Heavier grit particles settle in the bottom of the tank, while the lighter, mostly organic materials, remain in suspension and flow through the tank. Grit can be removed with chain-and-bucket conveyors, screw conveyors, jet pumps, grit pumps, or air lift pumps and then sent to a de-gritter or classifier for washing and dewatering. One advantage of the aerated grit chamber is the ability to adjust the air flow to the tank, which allows control of the roll or agitation velocity. This directly influences the percentage of grit removal. The main disadvantage is the energy requirement for aeration.

Vortex grit chambers use cylindrical tanks where the flow is introduced tangentially, creating a vortex flow pattern. Grit separates from the liquid and settles into a hopper at the bottom of the tank due to centrifugal and gravitational forces. Solids are typically removed from the hopper with an airlift pump or a grit pump and sent to a de-gritter or classifier for washing and dewatering.

Influent Pumping Station

A new influent pump station is recommended for the WWTP due to the lack of capacity and age of the existing structural and mechanical components. The new influent pumping station will be constructed as a "wet well" type and equipped with multiple (minimum of two) submersible pumps. The station should be designed to achieve the following:

- Provide redundant pumping capacity to meet the Peak Hour Flows (PHF)
- Provide reliable and interruptible operation
- Allow for easy operation and maintenance of the installed equipment
- Accommodate future capacity expansion
- Avoid septic conditions and excessive release of odors in the collection system and at the pump station

- Avoid flooding of the pump station and the surrounding areas

The wet-well maximum detention time if constant speed pumps are installed should be no more than 20 to 30 minutes. Use of variable frequency drives for pump speed control allows wet-well detention time reduction to 5 to 15 minutes. The wet-well bottom slope should be designed to allow self-cleaning and minimum deposition of debris. The new influent pump station wet well should have a circular cross section and the floor of the station should be sloped toward the pump suction sump(s) to permit ease of washout and cleaning. The wet well should be equipped with a secured access hatch, lighting and ventilation. Ventilation is particularly important to prevent the collection of toxic and/or explosive gases in the pump station. According to the National Fire Protection Association (NFPA) 820, all continuous ventilation systems should be fitted with flow detection devices connected to alarm signaling systems to indication ventilation system failure.

Odor control should be considered during the pump station design phase. A relatively simple and widely used odor control alternative includes minimizing wet-well turbulence. More effective options include collection of odors generated at the pump station and their treatment in scrubbers or biofilters, or the addition of odor control chemicals to the sewer upstream of the pump station. Chemicals typically used for odor control include chlorine, hydrogen peroxide, metal salts (ferrous chloride and ferric sulfate), oxygen, air, and potassium permanganate.

The reliability of power for the pumping station, in conjunction with the overall WWTP, should be addressed in the design phase of the project. Potential methods for mitigating a loss in the primary supply of electrical service may include the installation of an on-site standby generator, the availability of an adequate portable generator with quick connection and/or the availability of adequate holding capacity in the flow equalization ponds.

Office and Laboratory Facilities

The existing WWTP currently does not have any office or laboratory facilities. There are no full-time operators currently assigned to the plant and all administrative related duties and storage of records is accomplished at the District offices. Plant operations and maintenance duties are performed by a staff of three 3), which also have the responsibility to operate and maintain the Districts water system, sanitary sewer collection system and the street lighting system. The minimal routine laboratory testing is performed using test kits either in the field or on a work bench in the equipment storage shed on the WWTP property. The proposed expansion/upgrade of the plant will create a requirement for a significantly increased presence by trained and certified staff with expertise in mechanical plant operations and laboratory testing. This increased operator presence and laboratory testing requirements will require that permanent environmentally controlled facilities be constructed at the WWTP site to provide for these activities. The specific design, configuration, and specifications for the proposed office and laboratory facilities should be addressed in the design phase of the project.

Additional Maintenance and Equipment Storage/Shop Facilities

At present, there exists a small shop/equipment storage building at the WWTP site. The existing facility has approximately 1000 square feet of usable space and is currently utilized primarily for the storage of

small equipment, materials and tools. The facility is plumbed and has electrical service. A single restroom is contained in the existing facility with a toilet, wash basin and shower. The existing building does not have sufficient space to accommodate several of the larger pieces of equipment that the District currently owns, so at present these are stored outside and exposed to the weather. The existing space is not adequately suited to allow for proper maintenance and repair of the District's existing vehicle and equipment fleet.

The proposed expansion/upgrade of the plant will require the acquisition of additional equipment that will require regular maintenance and repairs, which will be in addition to the existing equipment inventory. The expansion of the existing plant will result in the addition of new treatment processes which will require regular maintenance and repair, along with space for the storage of replacement parts, supplies, equipment, tools, etc. The specific design, configuration, and specifications for the proposed additional maintenance and equipment storage/shop facilities should be addressed in the design phase of the project.

Environmentally Controlled Electrical and Controls Facility

With the expansion and upgrade of the existing WWTP, there will be a requirement to upgrade the existing electrical service and controls infrastructure. Currently, the electrical and controls equipment is located outside and exposed to the weather, with only a shade structure for protection from the elements. It is anticipated that as part of the WWTP expansion, there will be a significant increase in the number and sophistication of the electrical and controls devices and components that will be required for the operation, monitoring and control of the plant. To properly protect the required electrical and controls systems, and to provide an environment where they can be properly serviced and maintained, the proposed WWTP expansion/upgrade should provide for an environmentally controlled facility to house this equipment. The specific design, configuration, and specifications for the proposed environmentally controlled electrical and controls facility should be addressed in the design phase of the project.

Upgrade and Modernization of the Electrical, Controls, and SCADA Systems

As described in the previous paragraphs, with the expansion and upgrade of the existing WWTP, there will be a requirement to upgrade the existing electrical service and controls infrastructure. The existing WWTP, comprised of four (4) surface aerated ponds, requires only basic electrical and controls infrastructure and essentially no automation. The existing SCADA system is utilized primarily for alarm notification to offsite operators and for basic acquisition of operational data. With the increase sophistication and complexity of operations that will occur as a result of the WWTP expansion and upgrade, it will be necessary to upgrade and modernize the electrical, controls, and SCADA systems. It is imperative that the planning and design of these system upgrades be accomplished with comprehensive input from the Districts operations staff to ensure that the electrical, controls, and SCADA systems that are ultimately installed are compatible with the capabilities and expertise of the plant operators. The specific design, configuration, and specifications for the proposed upgrade and modernization of the WWTP electrical, controls, and SCADA system should be addressed in the design phase of the project. Further, this work should be performed in collaboration and with the technical assistance of

representatives from Pacific Gas & Electric (PG&E). Not only can PG&E provide significant technical expertise and assistance during the planning and design phases on the project, but there are financial assistance opportunities that may also be available which will benefit the SMCSD.

Treated/Recycled Effluent Pumping Station

The SMCSD would like to incorporate effluent reuse and disposal using agricultural irrigation when recycled water demand exists and seasonal land disposal (i.e. percolation ponds) when recycled water demand does not exist. The SMCSD is surrounded by agricultural land use, with the majority of this land being devoted to wine grape vineyards. The District has been in discussions with several of the larger vineyard owners which are in close proximity to the District WWTP that have expressed a strong interest in the possibility of utilizing recycled effluent to make up a portion of their annual crop irrigation demands.

Based on the discussions that the District has had to date with the larger vineyard owners in the area, it was determined that the most likely scenario for treated/recycled wastewater effluent reuse for vineyard irrigation would require that the District provide the pumping capacity and some transmission pipeline ("purple pipe") infrastructure to allow for delivery of the recycled effluent to a series of turnouts that would be located in proximity to the vineyard properties to be irrigated. The new treated/recycled effluent pumping station will be constructed as a "wet well" type and equipped with multiple (minimum of two) submersible pumps. The station design and components to be incorporated will be similar to the influent pumping station described in a previous section of this document.

Backup Power Generation Facilities

The WWTP is a critical component of the SMCSD infrastructure and provisions must be made to ensure that the plant remains operational in the event of a power outage. To ensure that treatment can continue to function properly, the proposed expansion/upgrade of the facility should incorporate an on-site, automatically starting generator, capable of ensuring continuous operation of all critical wastewater treatment system units for a duration equal to the longest power outage on record. There are many back-up power systems available and the ultimate selection of the most appropriate system for the District will be dependent on the final configuration of the renovated WWTP. The specific design, configuration, and specifications for the proposed WWTP back-up power generation system should be addressed in the design phase of the project. It is important to note the system ultimately selected, installed, and operated will be required to comply with applicable air quality regulations and be subject to permitting by the California Air resources Board (CARB) and the San Luis Obispo County Air Pollution Control District (SLOCAPCD).

Appendix L: Regulatory Requirements Governing Effluent Reuse and Disposal in California

Recycled Water Regulations Overview

Wastewater discharges are governed by both federal and state requirements. In California, the State Water Resources Control Board (SWRCB) administers statewide water rights, water pollution control, and water quality functions, while the nine (9) Regional Water Quality Control Boards (RWQCBs) conduct planning, permitting, and enforcement activities. Both the SWRCB and RWQCB have regulatory authority over projects using recycled water.

The SWRCB establishes general policies governing the permitting of recycled water projects consistent with its role of protecting water quality and sustaining water supplies. The SWRCB also exercises general oversight over recycled water projects, including review of RWQCB permitting practices. The SWRCB's Division of Drinking Water (DDW, formerly, California Department of Public Health) is charged with protection of public health and drinking water supplies and with the development of uniform water recycling criteria appropriate to particular uses of water. The RWQCB is charged with protection of surface water and groundwater resources and with the issuance of permits that implement DOW recommendations.

This project lies within the jurisdiction of the Central Coast Regional Water Quality Control Board (Central Coast Regional Board) (Region 3). The Central Coast Regional Board has authority to issue Waste Discharge Requirements (WDRs) and/or water reclamation requirements to the recycled water supplier, the recycled water user, or both. In lieu of the WDR and water reclamation requirements, the Central Coast Regional Board has authority to issue Master Reclamation Permits to a supplier and/or distributor of recycled water, and this option appears to be more common.

Title 22 of the California Code of Regulations

The primary regulation governing recycled water use is published in Title 22, Division 4, Chapter 3 of the California Administrative Code (Title 22). Title 22 regulations define four categories of recycled water determined by the treatment level and effluent turbidity and disinfection levels, which are summarized in Appendix C. In order to be used for the irrigation or vineyards with no contact between the edible portion, the District's effluent would be required to meet the requirements for disinfected secondary (Title 22, Section 2.2) recycled water. If the District plans to use the recycled water for recharge of the groundwater aquifer, then the treated effluent would be required to meet the requirements for tertiary disinfected recycled water, which is the highest level of treatment defined by the State and allows for unrestricted reuse in virtually all recycled water applications. Domestic wastewater requires biological secondary) treatment, filtration, and disinfection to Title 22 effluent limits before it can be considered tertiary recycled water. All of the treatment processes evaluated in this report have been accepted by the State as being capable of meeting the Title 22 regulatory requirements described hereafter.

In Title 22 disinfected secondary recycled water is allowed for use for irrigation of vineyards in situations where there is no contact between the edible portion of the vine and the recycled water. Under the regulations, "Disinfected secondary-2. 2 recycled water" means recycled water that has been oxidized and

disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed a most probable number (MPN) of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform bacteria does not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30 day period.

In Title 22, tertiary disinfected recycled water may be allowed for use for groundwater recharge under special "case-by-case filtration" permits to be issued by the RWQCB. Under the regulations, "Disinfected tertiary recycled water" means filtered and subsequently disinfected wastewater which has been filtered through granular media that must produce a daily average turbidity not exceeding 2 nephelometric turbidity units (NTU), a 95th percentile turbidity not exceeding 5 NTU, and a turbidity never exceeding 10 NTU. Colloidal and finely divided suspended matter must be "destabilized and agglomerated upstream from a filter by the addition of suitable floe forming chemical." The filtration rate cannot exceed 5 gallons per minute per square foot (gpm/sq. ft). Floe-forming chemicals must be added continuously, or automatically when the influent turbidity is greater than 5 NTU. Membrane filtration facilities must produce a 95th percentile turbidity of 0.2 NTU and never exceed 0.5 NTU.

Chlorine disinfection facilities must provide a CT value (the product of chlorine residual and modal contact time) of 450 milligram-minutes per liter (mg-min/L) with a modal contact time of at least 90 minutes based on peak dry weather flow. Alternative disinfection systems such as ultraviolet (UV) disinfection must be approved by the State as providing a 5-log virus removal efficiency in combination with the filtration process. In addition, the median concentration of total coliform bacteria in the disinfected tertiary effluent cannot exceed 2.2 MPN per 100 milliliters, and no single sample can exceed 23 MPN per 100 milliliters.

Recycled water regulations require that recycled water shall not be allowed to escape from any use area as surface flow that would either pond and/or enter waters of the State. Use area requirements are detailed in Title 22, Division 4, Section 60310 and typically in the Master Reclamation Permit. In addition, Title 22 and typically the Master Reclamation Permit describe recycled water producer, distributor, and user responsibilities including permitting, inspection, training, and reporting requirements.

<u>Recycled Water Policy</u>

The SWRCB recognizes that a burdensome and inconsistent permitting process can impede the implementation of recycled water projects. In 2009, the SWRCB adopted a new Recycled Water (RW) Policy, SWRCB Res No. 2009-0011.The stated purpose of the Policy is "to increase the use of recycled water from municipal wastewater sources [...]" (SWRCB, 2012) to allow the state to become more independent from its existing water supply sources, which are subject to significant climatic disruptions. In addition, as a separate measure, the Policy helps to "preserve, enhance, and restore the quality of California's water resources" (SWRCB, 2009). The RW Policy establishes more uniform requirements for water recycling throughout the State and streamlines the permit application process in most instances.

The RW Policy includes a mandate that the State increase the use of recycled water over 2002 levels by at least 200,000 acre-feet per year (AFY) by 2020 and by at least 300,000 AFY by 2030. Also included are goals for storm water reuse, conservation, and potable water offsets by recycled water. The responsibility for achieving these mandates and goals is placed both on recycled water purveyors and potential users.

According to the RW Policy, most recycled water irrigation projects that meet DDW requirements and other State or Local regulations can be adopted by the RWQCBs within 120 days. These streamlined projects will not require a monitoring component.

Recycled Water General Order

The SWRCB adopted a General Order (WQO 2014-0090) on June 3, 2014 to streamline permitting for recycled water. Coverage under this General Order is limited to treated municipal wastewater for non-potable uses. It does not apply to the use of recycled water for groundwater recharge or the disposal of treated wastewater by means of percolation ponds. The General Order establishes standard conditions for the use of recycled water, relieving producers, distributors, and users of recycled water from the sometimes-lengthy permit approval process and providing them with certainty around the requirements that they will be expected to meet.

If the SMCSD were to develop the new wastewater treatment facility to include production of recycled water, a new recycled water permit would be required. Though a site-specific permit may ultimately be needed, it is advantageous for the District to pursue permitting under this WQO as a first step. To obtain coverage under the Order, the District will be required to submit a Notice of Intent and an application fee to the Central Coast Regional Board.

Appendix M: Retrofitted Aerated Pond WWTP Alternative- Construction Costs and Annual Energy Costs

RETROFITTED POND SYSTEM CAPITAL COST				
WORK ITEM (updated Pond)	**UNIT**	**UNIT PRICE**	**QUANTITY**	**ESTIMATED COST**
GENERAL				
SITE PREPARATION	LS	$200,000	1	$200,000
SITE ELECTRICAL SYSTEM UPGRADE	LS	$100,000	1	$100,000
SITE INSTRUMENTATION, CONTROLS & SCADA SYSTEMS UPGRADE	LS	$150,000	1	$150,000
YARD PIPING, VALVES & APPURTENANCES	LS	$125,000	1	$125,000
SITE PERIMETER FENCING & ACCESS CONTROL GATE UPGRADE	LS	$35,000	1	$35,000
PRIMARY TREATMENT PROCESSES				
SEPTAGE RECEIVING STATION	LS	$35,000	1	$35,000
HEADWORKS STRUCTURE	LS	$75,000	1	$75,000
BAR / COARSE SCREENING SYSTEM	LS	$225,000	1	$225,000
GRIT REMOVAL SYSTEM	LS	$165,000	1	$165,000
FLOW SPLITTER STRUCTURE & APPURTENANCES	LS	$75,000	1	$75,000
FLOW EQUALIZATION TANK & APPURTENANCES	LS	$75,000	1	$75,000
INFLUENT LIFT STATION - STRUCTURE	LS	$75,000	1	$75,000
INFLUENT LIFT STATION - EQUIPMENT	LS	$200,000	1	$200,000
SECONDARY TREATMENT PROCESSES				
RECONGURATION OF EXISTING PRIMARY TREATMENT POND	EA	$35,000	2	$70,000
AERATION / TREATMENT SYSTEM FOR RECONFIGURED POND	EA	$300,000	2	$600,000
SOUNDPROOF BLOWER ENCLOSURE	SF	$500	300	$150,000
TREATED SECONDARY PUMPING STATION - STRUCTURE	LS	$75,000	1	$75,000
TREATED SECONDARY PUMPING STATION - EQUIPMENT	LS	$200,000	1	$200,000
TERTIARY TREATMENT PROCESSES				
TERTIARY FILTRATION SYSTEM - EQUIPMENT	EA	$350,000	1	$350,000
TERTIARY FILTRATION SYSTEM - INFRASTRUCTURE	EA	$75,000	1	$75,000
DISINFECTION PROCESSES				
IN-LINE UV DISINFECTION SYSTEM - EQUIPMENT	EA	$547,500	1	$547,500
IN-LINE UV DISINFECTION SYSTEM - STRUCTURE	EA	$75,000	1	$75,000
SOLIDS MANAGEMENT PROCESSES				
DEWATERING SCREW PRESS		$200,000	1	$200,000
AEROBIC DIGESTER TANK/BASIN/POND	LS	$150,000	1	$150,000
SLUDGE TRANSFER PUMP STATION (TRANSFER PUMPS/VALVES)	LS	$50,000	1	$50,000
FIXED COARSE BUBBLE DIFFUSER + BLOWER	LS	$75,000	1	$75,000
RECYCLED WATER SYSTEM				
CONVERSION OF EXISTING POND(S) TO EFFLUENT STORAGE PONDS	EA	$35,000	2	$70,000
RECYCLED WATER PUMPING STATION - STRUCTURE	LS	$75,000	1	$75,000
RECYCLED WATER PUMPING STATION - EQUIPMENT	LS	$200,000	1	$200,000
WWTP RECYCLED WATER DISTRIBUTION SYSTEM	LS	$35,000	1	$35,000
RECYCLED WATER TRANSMISSION SYSTEM	LS	$2,000,000	1	$2,000,000
FACILITY IMPROVEMENTS				
OFFICE AND LABORATORY FACILITIES	SF	$325	600	$195,000
MAINTENANCE SHOP / EQUIPMENT STORAGE FACILITY	SF	$100	2000	$200,000
ELECTRICAL & CONTROLS FACILITY	SF	$375	400	$150,000
BACK-UP GENERATION SYSTEM	LS	$300,000	1	$300,000
SITE FUELING STATION UPGRADE	LS	$35,000	1	$35,000
				$7,412,500

ESTIMATED AERATED POND SYSTEM ENERGY COST

HEADWORKS EQUIPMENT	QUANTITY	HP	KW	OPERATING HRS/DAY	KWH/DAY	KWH/YEAR	ELECTRICITY COST	COST/DAY	COST/YEAR
COARSE SCREEN	1	0.75	0.56	7	3.91	1428.95	$ 0.18	$ 0.70	$ 257.21
SCREENING COMPACTOR	1	2	1.49	7	10.44	3810.53	$ 0.18	$ 1.88	$ 685.89
MIXER MOTOR ON VORT GRIT SYSTEM	1	0.5	0.37	24	8.95	3266.17	$ 0.18	$ 1.61	$ 587.91
GRIT CLASSIFIER PUMP	1	5	3.73	3	11.19	4082.71	$ 0.18	$ 2.01	$ 734.89
GRIT CONVEYOR MOTOR	1	1	0.75	5	3.73	1360.90	$ 0.18	$ 0.67	$ 244.96
PANEL TRANSFORMER	1	1	0.75	24	17.90	6532.33	$ 0.18	$ 3.22	$ 1,175.82
MISCELLANIOUS	1	1	0.75	24	17.90	6532.33	$ 0.18	$ 3.22	$ 1,175.82
TOTALS		**11.25**	**8.39**		**74.01**	**27013.91**		**$ 13.32**	**$ 4,862.50**

LIFT STATION EQUIPMENT	QUANTITY	HP	KW	OPERATING HRS/DAY	KWH/DAY	KWH/YEAR	ELECTRICITY COST	COST/DAY	COST/YEAR
SUBMERSIBLE PUMPS	2	20	14.91	24	357.94	130646.64	$ 0.18	$ 64.43	$ 23,516.40
MISCELLANIOUS	1	1	0.75	24	17.90	6532.33	$ 0.18	$ 3.22	$ 1,175.82
TOTALS		**21**	**15.66**		**375.83**	**137178.97**		**$ 67.65**	**$ 24,692.21**

AERATED POND SYSTEM EQUIPMENT	QUANTITY	HP	KW	OPERATING HRS/DAY	KWH/DAY	KWH/YEAR	ELECTRICITY COST	COST/DAY	COST/YEAR
BLOWER	1	100	66.00	16	1056	385440	$ 0.18	$ 190.08	**$ 69,379.20**
WAS PUMP	1	1	0.75	2	1.4914	544.361	$ 0.18	$ 0.27	**$ 97.98**
MISCELLANIOUS	1	2.5	1.86	24	44.742	16330.83	$ 0.18	$ 8.05	**$ 2,939.55**
TOTALS		**103.5**	**68.61**		**1102.2334**	**402315.191**		**$ 198.40**	**$ 72,416.73**

SLUDGE MANAGEMENT EQUIPMENT	QUANTITY	HP	KW	OPERATING HRS/DAY	KWH/DAY	KWH/YEAR	ELECTRICITY COST	COST/DAY	COST/YEAR
SCREW PRESS (MOTOR + AIR COMPRESSOR + CAKE CONVEYOR)	1	0.60	0.45	8	3.56	1300.00	$ 0.18	$ 0.64	$ 234.00
POLYMER DOSING PUMP + MIXER	1	0.50	0.37	8	2.98	1088.72	$ 0.18	$ 0.54	$ 584.54
AEROBIC DIGESTOR (BLOWER + MIXER)	1	46.90	35.00	8	280.00	102200.00	$ 0.18	$ 50.40	$ 18,396.00
MISCELLANIOUS	1	2.50	1.86	8	14.91	5443.61	$ 0.18	$ 2.68	$ 979.85
TOTALS		**50.50**	**37.68**		**301.46**	**110032.33**		**$ 54.26**	**$ 20,194.39**

TERTIARY FILTRATION -DISC FILTER EQUIPMENT	QUANTITY	HP	KW	OPERATING HRS/DAY	KWH/DAY	KWH/YEAR	ELECTRICITY COST	COST/DAY	COST/YEAR
DISC FILTER (DRUM DRIVE MOTOR)	1	3.6	2.7	24	64.8	23652	$ 0.18	$ 11.66	$ 4,257.36
MISCELLANIOUS	1	1	0.7457	24	17.8968	6532.332	$ 0.18	$ 3.22	$ 1,175.82
TOTALS		**4.6**	**3.4457**		**82.6968**	**30184.332**		**$ 14.89**	**$ 5,433.18**

DISINFECTION-UV LIGHT EQUPIMENT	QUANTITY	HP	KW	OPERATING HRS/DAY	KWH/DAY	KWH/YEAR	ELECTRICITY COST	COST/DAY	COST/YEAR
AERATED PONFD SYSTEM OPTION (NUMBER OF LAMPS)	420	37.68	28.12	24	674.88	246331.2	$ 0.18	$ 121.48	$ 44,339.62
MISCELLANIOUS	1	2.50	1.86	24	44.74	16330.83	$ 0.18	$ 8.05	$ 2,939.55
TOTALS		**40.18**	**29.98**		**719.62**	**262662.03**		**$ 129.53**	**$ 47,279.17**

EFFLUENT PUMP EQUIPMENT	QUANTITY	HP	KW	OPERATING HRS/DAY	KWH/DAY	KWH/YEAR	ELECTRICITY COST	COST/DAY	COST/YEAR
SUBMERSIBLE PUMPS	2	20	14.91	24	357.94	130646.64	$ 0.18	$ 64.43	$ 23,516.40
MISCELLANIOUS	1	1	0.75	24	17.90	6532.33	$ 0.18	$ 3.22	$ 1,175.82
TOTALS		**21**	**15.66**		**375.83**	**137178.97**		**$ 67.65**	**$ 24,692.21**

OVERALL TOTALS		**148.53**	**179.43**		**3031.69**	**1106565.74**		**$ 545.70**	**$ 199,570.40**

Appendix N: Membrane Bioreactor WWTP Alternative- Construction Costs and Annual Energy Costs

MEMBRANE BIO-REACTOR CAPITAL COST				
WORK ITEM (UPDATED MBR)	**UNIT**	**UNIT PRICE**	**QUANTITY**	**ESTIMATED COST**
GENERAL				
SITE PREPARATION	LS	$200,000	1	$200,000
SITE ELECTRICAL SYSTEM UPGRADE	LS	$100,000	1	$100,000
SITE INSTRUMENTATION, CONTROLS & SCADA SYSTEMS UPGRADE	LS	$150,000	1	$150,000
YARD PIPING, VALVES & APPURTENANCES	LS	$125,000	1	$125,000
SITE PERIMETER FENCING & ACCESS CONTROL GATE UPGRADE	LS	$35,000	1	$35,000
PRIMARY TREATMENT PROCESSES				
SEPTAGE RECEIVING STATION	LS	$35,000	1	$35,000
HEADWORKS STRUCTURE	LS	$75,000	1	$75,000
BAR / COARSE / FINE SCREENING SYSTEM	LS	$225,000	1	$225,000
GRIT REMOVAL SYSTEM	LS	$165,000	1	$165,000
MICROSCREEN EQUIPMENT & FACILITY	LS	$300,000	1	$300,000
FLOW SPLITTER STRUCTURE & APPURTENANCES	LS	$75,000	1	$75,000
FLOW EQUALIZATION TANK & APPURTENANCES	LS	$75,000	1	$75,000
INFLUENT LIFT STATION - STRUCTURE	LS	$75,000	1	$75,000
INFLUENT LIFT STATION - EQUIPMENT	LS	$200,000	1	$200,000
SECONDARY TREATMENT PROCESSES				
MEMBRANE BIO-REACTOR - EQUIPMENT	LS	$625,000	2	$1,250,000
MEMBRANE BIO-REACTOR - STRUCTURE / INFRASTRUCTURE	LS	$475,000	2	$950,000
TREATED SECONDARY PUMPING STATION - STRUCTURE	LS	$75,000	1	$75,000
TREATED SECONDARY PUMPING STATION - EQUIPMENT	LS	$200,000	1	$200,000
DISINFECTION PROCESSES				
IN-LINE UV DISINFECTION SYSTEM - EQUIPMENT	LS	$353,000	1	$353,000
IN-LINE UV DISINFECTION SYSTEM - STRUCTURE	LS	$75,000	1	$75,000
SOLIDS MANAGEMENT PROCESSES				
DEWATERING SCREW PRESS		$200,000	1	$200,000
AEROBIC DIGESTER TANK/BASIN/POND	LS	$150,000	1	$150,000
SLUDGE TRANSFER PUMP STATION (TRANSFER PUMPS/VALVES)	LS	$50,000	1	$50,000
FIXED COARSE BUBBLE DIFFUSER + BLOWER	LS	$75,000	1	$75,000
RECYCLED WATER SYSTEM				
CONVERSION OF EXISTING POND(S) TO EFFLUENT STORAGE PONDS	EA	$35,000	2	$70,000
RECYCLED WATER PUMPING STATION - STRUCTURE	LS	$75,000	1	$75,000
RECYCLED WATER PUMPING STATION - EQUIPMENT	LS	$200,000	1	$200,000
WWTP RECYCLED WATER DISTRIBUTION SYSTEM	LS	$35,000	1	$35,000
RECYCLED WATER TRANSMISSION SYSTEM	LS	$2,000,000	1	$2,000,000
FACILITY IMPROVEMENTS				
OFFICE AND LABORATORY FACILITIES	SF	$325	600	$195,000
MAINTENANCE SHOP / EQUIPMENT STORAGE FACILITY	SF	$100	2000	$200,000
ELECTRICAL & CONTROLS FACILITY	SF	$375	400	$150,000
BACK-UP GENERATION SYSTEM	LS	$300,000	1	$300,000
SITE FUELING STATION UPGRADE	LS	$35,000	1	$35,000
				$8,473,000

ESTIMATED MEMBRANE BIO-REACTOR ENERGY COST

HEADWORKS EQUIPMENT	QUANTITY	HP	KW	OPERATING HRS/DAY	KWH/DAY	KWH/YEAR	ELECTRICITY COST	COST/DAY	COST/YEAR
COARSE SCREEN	1	0.75	0.56	7	3.91	1428.95	$ 0.18	$ 0.70	$ 257.21
SCREENING COMPACTOR	1	2	1.49	7	10.44	3810.53	$ 0.18	$ 1.88	$ 685.89
FINE SCREEN	1	0.75	0.56	8	4.47	1633.08	$ 0.18	$ 0.81	$ 293.95
SCREENING COMPACTOR	1	2	1.49	7	10.44	3810.53	$ 0.18	$ 1.88	$ 685.89
MIXER MOTOR ON VORT GRIT SYSTEM	1	0.5	0.37	24	8.95	3266.17	$ 0.18	$ 1.61	$ 587.91
GRIT CLASSIFIER PUMP	1	5	3.73	3	11.19	4082.71	$ 0.18	$ 2.01	$ 734.89
GRIT CONVEYOR MOTOR	1	1	0.75	5	3.73	1360.90	$ 0.18	$ 0.67	$ 244.96
PANEL TRANSFORMER	1	1	0.75	24	17.90	6532.33	$ 0.18	$ 3.22	$ 1,175.82
MISCELLANIOUS	1	1	0.75	24	17.90	6532.33	$ 0.18	$ 3.22	$ 1,175.82
TOTALS		**14**	**10.44**		**88.92**	**32457.52**		**$ 16.01**	**$ 5,842.35**

LIFT STATION EQUIPMENT	QUANTITY	HP	KW	OPERATING HRS/DAY	KWH/DAY	KWH/YEAR	ELECTRICITY COST	COST/DAY	COST/YEAR
SUBMERSIBLE PUMPS	2	20	14.91	24	357.94	130646.64	$ 0.18	$ 64.43	$ 23,516.40
MISCELLANIOUS	1	1	0.75	24	17.90	6532.33	$ 0.18	$ 3.22	$ 1,175.82
TOTALS		**21**	**15.66**		**375.83**	**137178.97**		**$ 67.65**	**$ 24,692.21**

MEMBRANE BIO-REACTOR EQUIPMENT	QUANTITY	HP	KW	OPERATING HRS/DAY	KWH/DAY	KWH/YEAR	ELECTRICITY COST	COST/DAY	COST/YEAR
ANOXIC	2	7.37	5.50	24	264.00	96360.00	$ 0.18	$ 47.52	$ 17,344.80
BLOWER	1	46.63	34.80	24	835.20	304848.00	$ 0.18	$ 150.34	$ 54,872.64
FILTRATE PUMP	2	3.35	2.50	24	120.00	43800.00	$ 0.18	$ 21.60	$ 7,884.00
MEMBRANE BLOWER	2	4.96	3.70	24	177.60	64824.00	$ 0.18	$ 31.97	$ 11,668.32
RAS PUMP	2	5.23	3.90	24	187.20	68328.00	$ 0.18	$ 33.70	$ 12,299.04
IR PUMP	2	1.61	1.20	24	57.60	21024.00	$ 0.18	$ 10.37	$ 3,784.32
DOSING PUMP	1	0.50	0.37	24	8.88	3241.20	$ 0.18	$ 1.60	$ 583.42
MISCELLANIOUS	1	2.50	1.86	24	44.74	16330.83	$ 0.18	$ 8.05	$ 2,939.55
TOTALS		**72.14**	**53.83**		**1695.22**	**618756.03**		**$ 305.14**	**$ 111,376.09**

SLUDGE MANAGEMENT EQUIPMENT	QUANTITY	HP	KW	OPERATING HRS/DAY	KWH/DAY	KWH/YEAR	ELECTRICITY COST	COST/DAY	COST/YEAR
SCREW PRESS (MOTOR + AIR COMPRESSOR + CAKE CONVEYOR)	1	0.60	0.45	8	3.56	1300.00	$ 0.18	$ 0.64	$ 234.00
POLYMER DOSING PUMP + MIXER	1	0.50	0.37	8	2.98	1088.72	$ 0.18	$ 0.54	$ 584.54
AEROBIC DIGESTOR (BLOWER + MIXER)	1	46.90	35.00	8	280.00	102200.00	$ 0.18	$ 50.40	$ 18,396.00
MISCELLANIOUS	1	2.50	1.86	8	14.91	5443.61	$ 0.18	$ 2.68	$ 979.85
TOTALS		**50.50**	**37.68**		**301.46**	**110032.33**		**$ 54.26**	**$ 20,194.39**

DISINFECTION-UV LIGHT EQUPIMENT	QUANTITY	HP	KW	OPERATING HRS/DAY	KWH/DAY	KWH/YEAR	ELECTRICITY COST	COST/DAY	COST/YEAR
MBR OPTION (NUMBER OF LAMPS)	192	23.0078	17.17	24	412.08	150409.2	$ 0.18	$ 74.17	$ 27,073.66
MISCELLANIOUS	1	2.50	1.86	24	44.74	16330.83	$ 0.18	8.05	2939.55
TOTALS		**25.51**	**19.03**		**456.82**	**166740.03**		**82.23**	**30013.21**

EFFLUENT PUMP EQUIPMENT	QUANTITY	HP	KW	OPERATING HRS/DAY	KWH/DAY	KWH/YEAR	ELECTRICITY COST	COST/DAY	COST/YEAR
SUBMERSIBLE PUMPS	2	20	14.91	24	357.94	130646.64	$ 0.18	$ 64.43	$ 23,516.40
MISCELLANIOUS	1	1	0.75	24	17.90	6532.33	$ 0.18	$ 3.22	$ 1,175.82
TOTALS		**21**	**15.66**		**375.83**	**137178.97**		**$ 67.65**	**$ 24,692.21**
OVERALL TOTALS		**204.14**	**152.31**		**3294.09**	**1202343.86**		**$ 592.94**	**$ 216,810.46**

Appendix O: Sequencing Batch Reactor WWTP Alternative- Construction Costs and Annual Energy Costs

SEQUENCING BATCH REACTOR CAPITAL COST				
WORK ITEM	**UNIT**	**UNIT PRICE**	**QUANTITY**	**ESTIMATED COST**
GENERAL				
SITE PREPARATION	LS	$200,000	1	$200,000
SITE ELECTRICAL SYSTEM UPGRADE	LS	$100,000	1	$100,000
SITE INSTRUMENTATION, CONTROLS & SCADA SYSTEMS UPGRADE	LS	$150,000	1	$150,000
YARD PIPING, VALVES & APPURTENANCES	LS	$125,000	1	$125,000
SITE PERIMETER FENCING & ACCESS CONTROL GATE UPGRADE	LS	$35,000	1	$35,000
PRIMARY TREATMENT PROCESSES				
SEPTAGE RECEIVING STATION	LS	$35,000	1	$35,000
HEADWORKS STRUCTURE	LS	$75,000	1	$75,000
BAR / COARSE / FINE SCREENING SYSTEM	LS	$225,000	1	$225,000
GRIT REMOVAL SYSTEM	LS	$165,000	1	$165,000
FLOW SPLITTER STRUCTURE & APPURTENANCES	LS	$75,000	1	$75,000
FLOW EQUALIZATION TANK & APPURTENANCES	LS	$75,000	1	$75,000
INFLUENT LIFT STATION - STRUCTURE	LS	$75,000	1	$75,000
INFLUENT LIFT STATION - EQUIPMENT	LS	$200,000	1	$200,000
SECONDARY TREATMENT PROCESSES				
SEQUENCING BATCH REACTOR - EQUIPMENT	LS	$300,000	2	$600,000
SEQUENCING BATCH REACTOR - STRUCTURE / INFRASTRUCTURE	LS	$625,000	1	$625,000
TREATED SECONDARY PUMPING STATION - STRUCTURE	LS	$75,000	1	$75,000
TREATED SECONDARY PUMPING STATION - EQUIPMENT	LS	$200,000	1	$200,000
TERTIARY TREATMENT PROCESSES				
TERTIARY FILTRATION SYSTEM - EQUIPMENT	LS	$304,000	1	$304,000
TERTIARY FILTRATION SYSTEM - INFRASTRUCTURE	LS	$75,000	1	$75,000
DISINFECTION PROCESSES				
IN-LINE UV DISINFECTION SYSTEM - EQUIPMENT	LS	$418,845	1	$418,845
IN-LINE UV DISINFECTION SYSTEM - STRUCTURE	LS	$75,000	1	$75,000
SOLIDS MANAGEMENT PROCESSES				
DEWATERING SCREW PRESS		$200,000	1	$200,000
AEROBIC DIGESTER TANK/BASIN/POND	LS	$150,000	1	$150,000
SLUDGE TRANSFER PUMP STATION (TRANSFER PUMPS/VALVES)	LS	$50,000	1	$50,000
FIXED COARSE BUBBLE DIFFUSER + BLOWER	LS	$75,000	1	$75,000
RECYCLED WATER SYSTEM				
CONVERSION OF EXISTING POND(S) TO EFFLUENT STORAGE PONDS	EA	$35,000	2	$70,000
RECYCLED WATER PUMPING STATION - STRUCTURE	LS	$75,000	1	$75,000
RECYCLED WATER PUMPING STATION - EQUIPMENT	LS	$200,000	1	$200,000
WWTP RECYCLED WATER DISTRIBUTION SYSTEM	LS	$35,000	1	$35,000
RECYCLED WATER TRANSMISSION SYSTEM	LS	$2,000,000	1	$2,000,000
FACILITY IMPROVEMENTS				
OFFICE AND LABORATORY FACILITIES	SF	$325	600	$195,000
MAINTENANCE SHOP / EQUIPMENT STORAGE FACILITY	SF	$100	2000	$200,000
ELECTRICAL & CONTROLS FACILITY	SF	$375	400	$150,000
BACK-UP GENERATION SYSTEM	LS	$300,000	1	$300,000
SITE FUELING STATION UPGRADE	LS	$35,000	1	$35,000
				$7,642,845

ESTIMATED SEQUENCING BATCH REACTOR ENERGY COST

HEADWORKS EQUIPMENT	QUANTITY	HP	KW	OPERATING HRS/DAY	KWH/DAY	KWH/YEAR	ELECTRICITY COST	COST/DAY	COST/YEAR
COARSE SCREEN	1	0.75	0.56	7.00	3.91	1428.95	0.18	0.70	257.21
SCREENING COMPACTOR	1	2.00	1.49	7.00	10.44	3810.53	0.18	1.88	685.89
MIXER MOTOR ON VORT GRIT SYSTEM	1	0.50	0.37	24.00	8.95	3266.17	0.18	1.61	587.91
GRIT CLASSIFIER PUMP	1	5.00	3.73	3.00	11.19	4082.71	0.18	2.01	734.89
GRIT CONVEYOR MOTOR	1	1.00	0.75	5.00	3.73	1360.90	0.18	0.67	244.96
PANEL TRANSFORMER	1	1.00	0.75	24.00	17.90	6532.33	0.18	3.22	1175.82
MISCELLANIOUS	1	1.00	0.75	24.00	17.90	6532.33	0.18	3.22	1175.82
TOTALS		**11**	**8.39**		**74.01**	**27013.91**		**$ 13.32**	**$ 4,862.50**

LIFT STATION EQUIPMENT	QUANTITY	HP	KW	OPERATING HRS/DAY	KWH/DAY	KWH/YEAR	ELECTRICITY COST	COST/DAY	COST/YEAR
SUBMERSIBLE PUMPS	2	20	14.91	24.00	357.94	130646.64	$ 0.18	$ 64.43	$ 23,516.40
MISCELLANIOUS	1	1	0.75	24.00	17.90	6532.33	$ 0.18	$ 3.22	$ 1,175.82
TOTALS		**21**	**15.66**		**375.83**	**137178.97**		**$ 67.65**	**$ 24,692.21**

SEQUENCING BATCH REACTOR EQUIPMENT	QUANTITY	HP	KW	OPERATING HRS/DAY	KWH/DAY	KWH/YEAR	ELECTRICITY COST	COST/DAY	COST/YEAR
SBR BLOWER	2	33.51	25.01	12	600.24	219087.60	$ 0.18	$ 108.04	$ 39,435.77
FLOATING MIXER	2	8.43	6.29	18	226.44	82650.60	$ 0.18	$ 40.76	$ 14,877.11
WAS PUMP	2	1.61	1.2	0.67	1.61	586.92	$ 0.18	$ 0.29	$ 105.65
INFLUENT PUMP	2	2.87	2.14	12	51.36	18746.40	$ 0.18	$ 9.24	$ 3,374.35
VALVES/PANEL/INSTRUMENTS	1	0.40	0.3	12	3.60	1322.00	$ 0.18	$ 0.65	$ 237.96
MISCELLANIOUS	1	2.50	1.86	24	44.74	16330.83	$ 0.18	$ 8.05	$ 2,939.55
TOTALS		**49.32**	**36.80**		**927.99**	**338724.35**		**$ 167.04**	**$ 60,970.38**

SLUDGE MANAGEMENT EQUIPMENT	QUANTITY	HP	KW	OPERATING HRS/DAY	KWH/DAY	KWH/YEAR	ELECTRICITY COST	COST/DAY	COST/YEAR
SCREW PRESS (MOTOR + AIR COMPRESSOR + CAKE CONVEYOR)	1	0.60	0.45	8	3.56	1300.00	$ 0.18	$ 0.64	$ 234.00
POLYMER DOSING PUMP + MIXER	1	0.50	0.37	8	2.98	1088.72	$ 0.18	$ 0.54	$ 584.54
AEROBIC DIGESTOR (BLOWE + MIXER)	1	46.90	35.00	8	280.00	102200.00	$ 0.18	$ 50.40	$ 18,396.00
MISCELLANIOUS	1	2.50	1.86	8	14.91	5443.61	$ 0.18	$ 2.68	$ 979.85
TOTALS		**50.50**	**37.68**		**301.46**	**110032.33**		**$ 54.26**	**$ 20,194.39**

TERTIARY FILTRATION -DISC FILTER EQUIPMENT	QUANTITY	HP	KW	OPERATING HRS/DAY	KWH/DAY	KWH/YEAR	ELECTRICITY COST	COST/DAY	COST/YEAR
DISC FILTER (DRUM DRIVE MOTOR)	1	3.6	2.7	24	64.80	23652	$ 0.18	$ 11.66	$ 4,257.36
MISCELLANIOUS	1	1	0.75	24	17.90	6532.33	$ 0.18	$ 3.22	$ 1,175.82
TOTALS		**4.6**	**3.45**		**82.70**	**30184.33**		**$ 14.89**	**$ 5,433.18**

DISINFECTION-UV LIGHT EQUPIMENT	QUANTITY	HP	KW	OPERATING HRS/DAY	KWH/DAY	KWH/YEAR	ELECTRICITY COST	COST/DAY	COST/YEAR
SBR OPTION (NUMBER OF LAMPS)	300	35.71	26.65	24	639.60	233454	$ 0.18	$ 115.13	$ 42,021.72
MISCELLANIOUS	1	2.5	1.86	24	44.74	16330.83	$ 0.18	$ 8.05	$ 2,939.55
TOTALS		**38.21**	**28.51**		**684.342**	**249784.83**		**$ 123.18**	**$ 44,961.27**

EFFLUENT PUMP EQUIPMENT	QUANTITY	HP	KW	OPERATING HRS/DAY	KWH/DAY	KWH/YEAR	ELECTRICITY COST	COST/DAY	COST/YEAR
SUBMERSIBLE PUMPS	2	20	14.91	24.00	357.94	130646.64	$ 0.18	$ 64.43	$ 23,516.40
MISCELLANIOUS	1	1	0.75	24.00	17.90	6532.33	$ 0.18	$ 3.22	$ 1,175.82
TOTALS		**21**	**15.66**		**375.83**	**137178.97**		**$ 67.65**	**$ 24,692.21**
OVERALL TOTALS		**195.88**	**146.16**		**2822.16**	**1030097.70**		**$ 507.99**	**$ 185,806.16**

MONSOON CONSULTANTS

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Mr. Kelly Dodds, Director of Utilities
San Miguel Community Services District
1150 Mission Street
San Miguel, CA 93451

June 8, 2020 (Revised April 7, 2021)

Re: SMCSD Machado WWTF – Flood Risk Assessment and Base Flood Elevation Determination

Dear Kelly:

Per your request, Monsoon Consultants (Monsoon) has performed a hydrologic and hydraulic analysis to assess the flooding risk potential and to determine the Base Flood Elevation (BFE) for the Machado WWTF property. The subject property includes four (4) separate parcels of land which in total comprise approximately 38.4 acres (APN 021-051-013, 021-051-015, 021-051-016 & 021-051-017). The location of the site is depicted in Figure 1. The Salinas River is located along the eastern portion of the property which has a FEMA 100-year Zone A regulatory Special Flood Hazard Area (SFHA). Based on a review of the Effective FEMA FIRM flood maps (FIRM Panel Nos. 06079C0150G & 06079C0400G, Effective Date November 16, 2012), it was determined that a portion of the subject property lies within the 100-year Zone A SFHA, although none of the existing treatment plant facilities are located within the mapped floodplain. The is no Base Flood Elevation (BFE) associated with the Zone A SFHA and no hydraulic modeling was performed by FEMA to establish the location and limits of the existing Zone A SFHA. Traditionally, the limits of Zone A SFHA's are delineated based on an interpretation of available topography. A copy of the existing FEMA FIRM is presented in Figure 2. Figure 3 is a close-up depiction of the Zone A SFHA in the immediate area of the WWTF.

The hydrologic and hydraulic analysis was performed in conjunction with the planning and engineering for the upgrade and expansion of the DISTRICT's Wastewater Treatment Facility (WWTF). This upgrade will eventually provide the DISTRICT with the

capacity to produce and convey a supply of high-quality effluent that will meet California Title 22 requirements for non-contact irrigation of vineyards and / or indirect recharge to the groundwater aquifer, with an ultimate maximum day dry weather flow capacity of 0.60 MGD. The results of the hydrologic and hydraulic analysis described in the following sections of this report are intended to be used for the purposes of siting and designing the proposed WWTF improvements.

HYDROLOGY

The contributing watershed was mapped using the ArcGIS Spatial Analyst Hydrology toolset to analyze the 2018 LIDAR USGS Digital Elevation Model for the Salinas River Watershed. For the purposes of watershed model development, Monsoon discretized the contributing watershed into 14 sub-basins, using the NRCS 8 Digit HUC Watershed boundaries. A graphical representation of the contributing watershed is presented in Figure 4. Soils and land cover data were obtained from USDA spatial databases. A summary of the relevant watershed data is presented in Table 1.

Sub-Watershed	DA (sq ft.)	DA (sq mi.)	CN
Cholame Valley	6621368219	237.51	77.70
San Jacinto Creek	5500713445	197.31	77.66
Indian Creek	2222074236	79.71	75.91
Cormack-McDonald	1017910092	36.51	77.57
Shell Creek	1482572608	53.18	73.21
Mid San Juan Creek	3033199237	108.80	74.61
Navajo Creek	1451460051	52.06	72.39
Upper San Juan Creek	4780423689	171.47	74.93
San Marcos Creek	1249626624	44.82	77.99
Huer Huero Creek	4496205750	161.28	75.74
Peachy Canyon	2057442551	73.80	77.93
Paso Robles Creek	1871952530	67.15	76.55
Upper Salinas River	7375721615	264.57	75.52
San Miguel	101926711.9	3.66	76.53

TABLE 1 SUB-WATERSHED DATA

The precipitation data that was used in the hydrologic model was obtained from NOAA's Atlas 14 rainfall data server for points near the geographic center of each the sub-watersheds. A summary of the rainfall data for the watershed is presented in Table 2 (See Attached).

The U.S. Army Corps of Engineers HEC-HMS computer program was used to estimate the peak discharges in the Salinas River for the 100-year and 500-year statistical storm events. A 24-hour synthetic rainfall distribution was developed for each of the fourteen (14) sub-basins in accordance with the procedure described in the USDA NRCS National Engineering

Handbook - Part 630 Hydrology. Based on the results of our analysis, Monsoon computed that the peak discharge, that will occur during a 100-year 24-hr storm event at the SMCSD Machado WWTF site, will be approximately 161,400-cfs. Monsoon also computed the peak discharge, that will occur during a 500-year 24-hr storm event, will be approximately 236,300-cfs. For comparison purposes, the San Luis Obispo County engineer-of record for the 14th Street / North River Road Bridge replacement project estimated that the 100-year 24-hr peak discharge was 140,000-cfs. The difference in the peak discharge estimates are likely due to differences in the precipitation data that was used in the different models. The precipitation data that was utilized in the current study was based on the NOAA Atlas 14 Volume 6 (Version 2.3), which was last updated in 2014.

HYDRAULICS

To assess the flooding risk potential at the SMCSD Machado WWTF and determine the Base Flood Elevation (BFE) in the Salinas River at the subject site, MONSOON performed an analysis using the U.S. Army Corps of Engineers' one-dimensional Hydrologic Engineering Center's River Analysis System (HEC-RAS). HEC-RAS utilizes user-inputted cross sections and peak discharge data to determine flow characteristics along a stream. MONSOON utilized the results of our HEC-HMS hydrologic model as input to determine the 100-year and 500-year flows for the project area.

Twenty-three (23) cross-sections were derived from the USGS 2018 LIDAR elevation survey data which was obtained in conjunction with a study of the Salinas River Watershed currently underway by a multi-agency consortium. The locations of the cross sections are shown on Figure 5.

The Salinas River channel is braided with scattered light - heavy vegetation along the channel alignment. Monsoon assigned a Manning's "n-value" of 0.055 for the river channel. The undeveloped overbank areas include "timbered" areas and "range land" which are covered in grasses and light brush. In addition, residential urban development is present within the community of San Miguel. Monsoon assigned a Manning's "n-value" to be 0.065 for the overbank areas.

For the purposes of hydraulic modeling, the HEC-RAS calculations assumed a "Normal Depth" downstream and upstream boundary condition. The average slope of this reach of the Salinas River was derived from our interpretation of the USGS 2018 LIDAR elevation data and was determined to be approximately 0.002 ft/ft (0.2%). A summary of the results of the hydraulic analysis are presented in Table 3 (100-year) and Table 4 (500-year).

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Salinas River_SM	100000	SMCSD WWTF_100YR	161408	602	622.01		622.39	0.000974	5	33003.6	2561.78	0.23
Salinas River_SM	98948	SMCSD WWTF_100YR	161408	600	620.39		621	0.001827	7	27655.38	2324.67	0.32
Salinas River_SM	97961	SMCSD WWTF_100YR	161408	598	619.3		619.67	0.000947	5.11	34504.48	2566.54	0.23
Salinas River_SM	96543	SMCSD WWTF_100YR	161408	595	617.97		618.35	0.000903	4.96	32546.19	2134.92	0.22
Salinas River_SM	95341	SMCSD WWTF_100YR	161408	592	616.36		617.04	0.001293	6.6	24472.14	1361.99	0.27
Salinas River_SM	94474	SMCSD WWTF_100YR	161408	590	615.21		615.9	0.00132	6.73	24413.41	1381.34	0.28
Salinas River_SM	93688	SMCSD WWTF_100YR	161408	589	613.99		614.75	0.001599	7.06	23266.57	1421.19	0.3
Salinas River_SM	93006	SMCSD WWTF_100YR	161408	588	613.15		613.76	0.001215	6.4	26352.42	1597.81	0.27
Salinas River_SM	92597	SMCSD WWTF_100YR	161408	587	612.61		613.25	0.001283	6.51	26103.52	1700.01	0.27
Salinas River_SM	92225	SMCSD WWTF_100YR	161408	587	612.2		612.79	0.001131	6.34	27265.26	1761.37	0.26
Salinas River_SM	91827	SMCSD WWTF_100YR	161408	586	611.8		612.34	0.001046	6.22	28474	1730.71	0.25
Salinas River_SM	91476	SMCSD WWTF_100YR	161408	585	611.59		611.99	0.000762	5.28	33495.95	2112.77	0.21
Salinas River_SM	90872	SMCSD WWTF_100YR	161408	584	611.28		611.58	0.000535	4.54	38312.39	2255.52	0.18
Salinas River_SM	89949	SMCSD WWTF_100YR	161408	583	610.91		611.14	0.000382	3.92	42159.95	2485.14	0.15
Salinas River_SM	89024	SMCSD WWTF_100YR	161408	581	610.56		610.81	0.000342	4.02	41626.45	2255.26	0.15
Salinas River_SM	88147	SMCSD WWTF_100YR	161408	580	609.67		610.3	0.000981	6.43	26914.76	1843.92	0.25
Salinas River_SM	87486	SMCSD WWTF_100YR	161408	579	609.28		609.72	0.000637	5.4	32036.02	2016.27	0.2
Salinas River_SM	86848	SMCSD WWTF_100YR	161408	577.26	608.86		609.32	0.000626	5.65	33139.77	2324.16	0.2
Salinas River_SM	85844	SMCSD WWTF_100YR	161408	576	607.93		608.44	0.001282	5.79	29638.26	2837.34	0.27
Salinas River_SM	84911	SMCSD WWTF_100YR	161408	575	605.41		606.39	0.004336	7.95	20311.73	2136.23	0.45
Salinas River_SM	83915	SMCSD WWTF_100YR	161408	573	601.7		602.74	0.003128	8.17	19760.51	1555.81	0.4
Salinas River_SM	82991	SMCSD WWTF_100YR	161408	572	599.58		600.47	0.001903	7.56	21530.54	1449.35	0.33
Salinas River_SM	82008	SMCSD WWTF_100YR	161408	571	598.32	586.59	598.82	0.001302	5.7	28295.36	1983.45	0.27

TABLE 3 SUMMARY OF HEC-RAS HYDRAULIC 100-YEAR MODEL RESULTS

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Salinas River_SM	100000	SMCSD WWTF_500YR	236243	602	626		626.48	0.000903	5.66	43343.11	2625.07	0.23
Salinas River_SM	98948	SMCSD WWTF_500YR	236243	600	624.55		625.25	0.001521	7.51	37394.75	2362.81	0.3
Salinas River_SM	97961	SMCSD WWTF_500YR	236243	598	623.65		624.09	0.000828	5.64	45737.83	2594.81	0.22
Salinas River_SM	96543	SMCSD WWTF_500YR	236243	595	622.42		622.91	0.000828	5.61	42124.32	2230.72	0.22
Salinas River_SM	95341	SMCSD WWTF_500YR	236243	592	620.67		621.61	0.00137	7.78	30400.18	1385.19	0.29
Salinas River_SM	94474	SMCSD WWTF_500YR	236243	590	619.44		620.4	0.001407	7.95	30327.24	1475.72	0.3
Salinas River_SM	93688	SMCSD WWTF_500YR	236243	589	618.17		619.21	0.001633	8.24	29294.26	1496.49	0.32
Salinas River_SM	93006	SMCSD WWTF_500YR	236243	588	617.33		618.17	0.001273	7.5	33292.58	1796.35	0.28
Salinas River_SM	92597	SMCSD WWTF_500YR	236243	587	616.78		617.63	0.001325	7.59	34424.8	2249.24	0.29
Salinas River_SM	92225	SMCSD WWTF_500YR	236243	587	616.35		617.15	0.001191	7.43	35500.6	2179.65	0.27
Salinas River_SM	91827	SMCSD WWTF_500YR	236243	586	615.91		616.67	0.001151	7.42	36382.5	2049.83	0.27
Salinas River_SM	91476	SMCSD WWTF_500YR	236243	585	615.73		616.27	0.000813	6.21	43006.1	2376.43	0.23
Salinas River_SM	90872	SMCSD WWTF_500YR	236243	584	615.4		615.82	0.000584	5.38	47724.89	2307.6	0.19
Salinas River_SM	89949	SMCSD WWTF_500YR	236243	583	615		615.33	0.000432	4.7	52414.34	2518.53	0.17
Salinas River_SM	89024	SMCSD WWTF_500YR	236243	581	614.58		614.94	0.000413	4.91	50797.66	2306.15	0.17
Salinas River_SM	88147	SMCSD WWTF_500YR	236243	580	613.45		614.33	0.001134	7.72	34113.21	1971.97	0.27
Salinas River_SM	87486	SMCSD WWTF_500YR	236243	579	613		613.64	0.000773	6.59	39757.75	2178.85	0.23
Salinas River_SM	86848	SMCSD WWTF_500YR	236243	577.26	612.51		613.15	0.000761	6.83	42078.59	2574.71	0.23
Salinas River_SM	85844	SMCSD WWTF_500YR	236243	576	611.57		612.19	0.001205	6.5	40149.09	2981.06	0.27
Salinas River_SM	84911	SMCSD WWTF_500YR	236243	575	609.41		610.37	0.003529	7.85	30100.84	2764.81	0.42
Salinas River_SM	83915	SMCSD WWTF_500YR	236243	573	605.89		607	0.003212	8.46	27921.92	2131.5	0.41
Salinas River_SM	82991	SMCSD WWTF_500YR	236243	572	603.47		604.66	0.002038	8.82	27928.94	1979.35	0.35
Salinas River_SM	82008	SMCSD WWTF_500YR	236243	571	602.26	588.91	602.91	0.001304	6.49	36387.07	2103.36	0.28

TABLE 4 SUMMARY OF HEC-RAS HYDRAULIC 500-YEAR MODEL RESULTS

Based on the results of our analysis, Monsoon determined that the 100-year Base Flood Elevation (BFE), at the location of the SMCSD Machado WWTP, is at an elevation of 613 feet (NAVD 1988) above mean sea level (AMSL). A graphical depiction of the maximum limits of flood inundation that would occur during a 100-year flooding event, under existing conditions, are graphically depicted in Figure 6. Figure 7 is a close-up depiction of the 100-year flood inundation limits in the immediate area of the WWTF. The 500 -year Base Flood Elevation (BFE) is at an elevation of 617 feet AMSL. A graphical depiction of the maximum limits of flood inundation that would occur during a 500-year flooding event, under existing conditions,

are graphically depicted in Figure 8. Figure 9 is a close-up depiction of the 500-year flood inundation limits in the immediate area of the WWTF.

In addition to the existing conditions hydraulic model results described above, Monsoon also developed a hydraulic model for the 500-year flood conditions, for a post-construction scenario. For the purposes of this future conditions model, the entire footprint area of the proposed WWTF site, as defined in the preliminary plans prepared by Monsoon (dated November 6, 2020), was assumed to be elevated to an elevation of 619-feet AMSL. Consequently, in the post-construction HEC-RAS model, the entire WWTF site was modeled as a "conveyance obstruction" and no flow through the site was permitted in the model. A summary of the results of the post-construction hydraulic analysis is presented in Table 5 (500-year Post Construction).

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Salinas River_SM	100000	SMCSD WWTF_500YR	236243	602	626.07		626.55	0.000892	5.64	43532.94	2645.87	0.23
Salinas River_SM	98948	SMCSD WWTF_500YR	236243	600	624.65		625.34	0.001492	7.47	37621.91	2363.19	0.3
Salinas River_SM	97961	SMCSD WWTF_500YR	236243	598	623.76		624.2	0.000811	5.6	46038.45	2595.5	0.22
Salinas River_SM	96543	SMCSD WWTF_500YR	236243	595	622.57		623.05	0.000809	5.57	42444.22	2233.94	0.22
Salinas River_SM	95341	SMCSD WWTF_500YR	236243	592	620.85		621.78	0.001333	7.71	30655.64	1385.7	0.29
Salinas River_SM	94474	SMCSD WWTF_500YR	236243	590	619.67		620.61	0.00136	7.87	30660.37	1477.71	0.29
Salinas River_SM	93688	SMCSD WWTF_500YR	236243	589	618.45		619.46	0.001562	8.12	29713.31	1499.71	0.31
Salinas River_SM	93006	SMCSD WWTF_500YR	236243	588	617.66		618.46	0.001209	7.38	33878.63	1808	0.27
Salinas River_SM	92597	SMCSD WWTF_500YR	236243	587	617		617.89	0.001597	9.59	33220.86	1812.63	0.33
Salinas River_SM	92225	SMCSD WWTF_500YR	236243	587	616.49		617.29	0.001478	9.22	35088.61	1950.39	0.31
Salinas River_SM	91827	SMCSD WWTF_500YR	236243	586	615.94		616.71	0.001403	8.93	35331.78	1868.85	0.31
Salinas River_SM	91476	SMCSD WWTF_500YR	236243	585	615.73		616.27	0.000813	6.21	43006.1	2376.43	0.23
Salinas River_SM	90872	SMCSD WWTF_500YR	236243	584	615.4		615.82	0.000584	5.38	47724.89	2307.6	0.19
Salinas River_SM	89949	SMCSD WWTF_500YR	236243	583	615		615.33	0.000432	4.7	52414.34	2518.53	0.17
Salinas River_SM	89024	SMCSD WWTF_500YR	236243	581	614.58		614.94	0.000413	4.91	50797.66	2306.15	0.17
Salinas River_SM	88147	SMCSD WWTF_500YR	236243	580	613.45		614.33	0.001134	7.72	34113.21	1971.97	0.27
Salinas River_SM	87486	SMCSD WWTF_500YR	236243	579	613		613.64	0.000773	6.59	39757.75	2178.85	0.23
Salinas River_SM	86848	SMCSD WWTF_500YR	236243	577.26	612.51		613.15	0.000761	6.83	42078.59	2574.71	0.23
Salinas River_SM	85844	SMCSD WWTF_500YR	236243	576	611.57		612.19	0.001205	6.5	40149.09	2981.06	0.27
Salinas River_SM	84911	SMCSD WWTF_500YR	236243	575	609.41		610.37	0.003529	7.85	30100.84	2764.81	0.42
Salinas River_SM	83915	SMCSD WWTF_500YR	236243	573	605.89		607	0.003212	8.46	27921.92	2131.5	0.41
Salinas River_SM	82991	SMCSD WWTF_500YR	236243	572	603.47		604.66	0.002038	8.82	27928.94	1979.35	0.35
Salinas River_SM	82008	SMCSD WWTF_500YR	236243	571	602.26	588.91	602.91	0.001304	6.49	36387.07	2103.36	0.28

TABLE 5 SUMMARY OF HEC-RAS HYDRAULIC 500-YEAR POST-CONSTRUCTION MODEL RESULTS

The 500-year post-construction flood model is important because the District's WWTF is considered to be a "Critical Facility" by FEMA. Per FEMA requirements and Executive Order 11988, if a critical facility is required to be located within the 1% annual chance floodplain, the first floor shall be elevated at or above 0.2% (i.e. 500-year) annual chance flood elevation. Alternatively, the critical facility may be protected by barrier, floodwall, or levee at or above 0.2% (i.e. 500-year) annual chance flood elevation. The proposed Machado WWTF project will provide for the required protection from flooding associated with the 500-year flood event.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our analysis, Monsoon recommends that all future improvements and facilities that are made at the SMCSD Machado WWTF site be designed and constructed such that they are protected from flooding to a minimum 500-year Base Flood Elevation of 617-feet AMSL. New and renovated facilities will either be constructed above this elevation or be designed to be protected by barrier, floodwall, or levee at or above 0.2% (i.e. 500-year) annual chance flood elevation. If the proposed WWTF upgrade and expansion of the facility is designed and constructed to meet these criteria, the new WWTF will not be adversely impacted from flood levels which are associated with a flood event with a .2% probability of occurrence and will meet the FEMA requirements for flood protection of Critical Facilities.

To ensure that there will not be any off-site adverse impacts from the proposed recommendations, Monsoon performed a comparison of flood elevations between the existing and post-construction 500-year flood surface elevations. A summary of the comparison is presented in Table 6.

River Sta	Profile	Q Total	Pre-Construction W.S. Elev	Post-Construction W.S. Elev	Difference in W.S. Elev
		(cfs)	(ft)	(ft)	(ft)
100000	SMCSD WWTF_500YR	236243	626	626.07	0.07
98948	SMCSD WWTF_500YR	236243	624.55	624.65	0.1
97961	SMCSD WWTF_500YR	236243	623.65	623.76	0.11
96543	SMCSD WWTF_500YR	236243	622.42	622.57	0.15
95341	SMCSD WWTF_500YR	236243	620.67	620.85	0.18
94474	SMCSD WWTF_500YR	236243	619.44	619.67	0.23
93688	SMCSD WWTF_500YR	236243	618.17	618.45	0.28
93006	SMCSD WWTF_500YR	236243	617.33	617.66	0.33
92597	SMCSD WWTF_500YR	236243	616.78	617	0.22
92225	SMCSD WWTF_500YR	236243	616.35	616.49	0.14
91827	SMCSD WWTF_500YR	236243	615.91	615.94	0.03
91476	SMCSD WWTF_500YR	236243	615.73	615.73	0
90872	SMCSD WWTF_500YR	236243	615.4	615.4	0
89949	SMCSD WWTF_500YR	236243	615	615	0
89024	SMCSD WWTF_500YR	236243	614.58	614.58	0
88147	SMCSD WWTF_500YR	236243	613.45	613.45	0
87486	SMCSD WWTF_500YR	236243	613	613	0
86848	SMCSD WWTF_500YR	236243	612.51	612.51	0
85844	SMCSD WWTF_500YR	236243	611.57	611.57	0
84911	SMCSD WWTF_500YR	236243	609.41	609.41	0
83915	SMCSD WWTF_500YR	236243	605.89	605.89	0
82991	SMCSD WWTF_500YR	236243	603.47	603.47	0
82008	SMCSD WWTF_500YR	236243	602.26	602.26	0

Based on the results of the comparative analysis, it was determined that the impacts to the 500-year flood elevations in the Salinas River, as a result of the proposed Machado WWTF

improvement project will be negligible, with a maximum increase in flood water surface elevation of approximately 4-inches.

If you have any questions or require additional information, please do not hesitate to contact me.

MONSOON CONSULTANTS

Blaine T. Reely

April 7, 2021

Blaine T. Reely, Ph.D., P.E. Date
President, Monsoon Consultants



Attachments

Tables

Table 2: NOAA Atlas 14 Precipitation Data

Figures

Figure 1: Project Location Map
Figure 2: FEMA FIRM
Figure 3: FEMA FIRM (WWTF Area)
Figure 4: Watershed Location Map
Figure 5: HEC-RAS Hydraulic Model Cross-Section Locations
Figure 6: 100-year Flood Inundation Map
Figure 7: 100-year Flood Inundation Map (WWTF Area)
Figure 8: 500-year Flood Inundation Map
Figure 9: 500-year Flood Inundation Map (WWTF Area)

TABLES

TABLE 2
NOAA ATLAS PRECIPITATION DATA
SMCSD WWTF FLOOD RISK ASSESSMENT STUDY

NOAA ATLAS 14 PRECIPITATION

Upper San Juan Creek

	100-YR PRECIPITATION	500-YR PRECIPITATION
5-min	0.373(0.290-0.484)	0.513(0.365-0.728)
10-min	0.534(0.416-0.694)	0.736(0.523-1.04)
15-min	0.646(0.503-0.839)	0.889(0.633-1.26)
30-min	0.916(0.713-1.19)	1.26(0.898-1.79)
60-min	1.32(1.03-1.71)	1.81(1.29-2.57)
2-hr	1.91(1.49-2.48)	2.62(1.87-3.73)
3-hr	2.41(1.88-3.13)	3.29(2.34-4.68)
6-hr	3.40(2.64-4.41)	4.61(3.28-6.55)
12-hr	4.37(3.40-5.67)	5.89(4.19-8.37)
24-hr	5.75(4.69-7.19)	7.72(5.88-10.3)

Shell Creek

	100-YR PRECIPITATION	500-YR PRECIPITATION
5-min	0.373(0.297-0.474)	0.470(0.346-0.646)
10-min	0.535(0.425-0.679)	0.674(0.496-0.926)
15-min	0.647(0.514-0.821)	0.815(0.599-1.12)
30-min	0.904(0.719-1.15)	1.14(0.838-1.57)
60-min	1.31(1.04-1.66)	1.65(1.21-2.27)
2-hr	1.91(1.52-2.43)	2.41(1.77-3.31)
3-hr	2.45(1.95-3.11)	3.09(2.27-4.25)
6-hr	3.55(2.82-4.51)	4.48(3.29-6.15)
12-hr	4.90(3.90-6.22)	6.15(4.52-8.46)
24-hr	6.76(5.49-8.50)	8.52(6.42-11.5)

Navajo Creek

5-min	0.370(0.286-0.484)	0.477(0.339-0.679)
10-min	0.531(0.410-0.694)	0.684(0.486-0.973)
15-min	0.642(0.496-0.840)	0.827(0.588-1.18)
30-min	0.897(0.693-1.17)	1.16(0.821-1.64)
60-min	1.29(1.00-1.69)	1.67(1.19-2.37)
2-hr	1.88(1.45-2.46)	2.42(1.72-3.44)
3-hr	2.42(1.87-3.16)	3.10(2.20-4.41)
6-hr	3.47(2.68-4.54)	4.44(3.15-6.31)
12-hr	4.68(3.61-6.11)	5.94(4.22-8.44)
24-hr	6.37(5.13-8.08)	8.08(6.11-10.9)

Mid San Juan Creek

5-min	0.311(0.242-0.405)	0.418(0.296-0.595)
10-min	0.446(0.346-0.581)	0.598(0.424-0.853)
15-min	0.540(0.419-0.703)	0.724(0.513-1.03)
30-min	0.743(0.577-0.967)	0.996(0.706-1.42)
60-min	1.05(0.817-1.37)	1.41(1.00-2.01)
2-hr	1.55(1.21-2.02)	2.08(1.47-2.97)
3-hr	1.95(1.52-2.54)	2.62(1.85-3.73)
6-hr	2.70(2.10-3.52)	3.61(2.56-5.14)
12-hr	3.53(2.74-4.59)	4.67(3.31-6.65)
24-hr	4.70(3.84-5.86)	6.18(4.72-8.26)

TABLE 2
NOAA ATLAS PRECIPITATION DATA
SMCSD WWTF FLOOD RISK ASSESSMENT STUDY

NOAA ATLAS 14 PRECIPITATION

Cormack

	100-YR PRECIPITATION	500-YR PRECIPITATION
5-min	0.303(0.235-0.394)	0.402(0.285-0.572)
10-min	0.434(0.337-0.565)	0.576(0.409-0.819)
15-min	0.525(0.408-0.683)	0.696(0.494-0.991)
30-min	0.722(0.560-0.939)	0.956(0.679-1.36)
60-min	1.02(0.792-1.33)	1.35(0.959-1.92)
2-hr	1.51(1.17-1.97)	2.00(1.42-2.85)
3-hr	1.89(1.47-2.46)	2.51(1.78-3.57)
6-hr	2.62(2.03-3.40)	3.46(2.46-4.93)
12-hr	3.42(2.66-4.45)	4.49(3.19-6.39)
24-hr	4.55(3.68-5.75)	5.96(4.48-8.08)

San Jacinto

	100-YR PRECIPITATION	500-YR PRECIPITATION
5-min	0.384(0.299-0.500)	0.503(0.357-0.716)
10-min	0.551(0.428-0.716)	0.721(0.512-1.03)
15-min	0.666(0.518-0.866)	0.872(0.619-1.24)
30-min	0.919(0.714-1.20)	1.20(0.854-1.71)
60-min	1.31(1.02-1.70)	1.71(1.22-2.44)
2-hr	1.88(1.46-2.44)	2.47(1.75-3.51)
3-hr	2.35(1.83-3.05)	3.08(2.19-4.38)
6-hr	3.35(2.61-4.36)	4.39(3.12-6.25)
12-hr	4.62(3.59-6.00)	6.02(4.27-8.56)
24-hr	6.36(5.16-8.00)	8.30(6.25-11.2)

Cholame

5-min	0.365(0.287-0.470)	0.484(0.349-0.679)
10-min	0.523(0.411-0.673)	0.694(0.500-0.974)
15-min	0.633(0.497-0.814)	0.839(0.604-1.18)
30-min	0.872(0.685-1.12)	1.16(0.832-1.62)
60-min	1.23(0.968-1.59)	1.64(1.18-2.29)
2-hr	1.81(1.42-2.33)	2.40(1.73-3.37)
3-hr	2.26(1.77-2.90)	2.99(2.15-4.20)
6-hr	3.17(2.49-4.07)	4.19(3.02-5.88)
12-hr	4.15(3.26-5.33)	5.45(3.93-7.65)
24-hr	5.49(4.49-6.84)	7.21(5.52-9.60)

Indian

5-min	0.397(0.316-0.504)	0.510(0.376-0.698)
10-min	0.569(0.453-0.722)	0.731(0.539-1.00)
15-min	0.688(0.548-0.873)	0.884(0.652-1.21)
30-min	0.964(0.767-1.22)	1.24(0.913-1.70)
60-min	1.41(1.12-1.78)	1.81(1.33-2.47)
2-hr	2.06(1.64-2.61)	2.65(1.95-3.63)
3-hr	2.63(2.09-3.34)	3.38(2.50-4.63)
6-hr	3.85(3.06-4.88)	4.95(3.65-6.77)
12-hr	5.33(4.25-6.77)	6.81(5.03-9.33)
24-hr	7.29(5.94-9.12)	9.30(7.04-12.5)

TABLE 2
NOAA ATLAS PRECIPITATION DATA
SMCSD WWTF FLOOD RISK ASSESSMENT STUDY

NOAA ATLAS 14 PRECIPITATION

San Miguel

	100-YR PRECIPITATION	500-YR PRECIPITATION
5-min	0.336(0.259-0.440)	0.442(0.312-0.633)
10-min	0.482(0.372-0.630)	0.633(0.447-0.907)
15-min	0.582(0.450-0.762)	0.766(0.540-1.10)
30-min	0.779(0.601-1.02)	1.02(0.723-1.47)
60-min	1.09(0.843-1.43)	1.44(1.01-2.06)
2-hr	1.54(1.19-2.02)	2.02(1.42-2.89)
3-hr	1.92(1.48-2.52)	2.51(1.77-3.59)
6-hr	2.75(2.12-3.60)	3.59(2.53-5.14)
12-hr	3.87(2.98-5.06)	5.07(3.58-7.26)
24-hr	5.42(4.45-6.73)	7.17(5.48-9.57)

Paso Robles

	100-YR PRECIPITATION	500-YR PRECIPITATION
5-min	0.495(0.387-0.639)	0.649(0.461-0.923)
10-min	0.710(0.555-0.916)	0.931(0.661-1.32)
15-min	0.858(0.671-1.11)	1.13(0.799-1.60)
30-min	1.21(0.946-1.56)	1.59(1.13-2.25)
60-min	1.79(1.40-2.30)	2.34(1.66-3.33)
2-hr	2.62(2.05-3.38)	3.44(2.44-4.88)
3-hr	3.35(2.62-4.33)	4.39(3.12-6.24)
6-hr	4.97(3.89-6.41)	6.49(4.61-9.22)
12-hr	6.92(5.42-8.94)	8.98(6.38-12.8)
24-hr	9.46(8.07-11.3)	12.3(9.86-15.6)

San Marcos

5-min	0.399(0.308-0.521)	0.522(0.369-0.746)
10-min	0.571(0.441-0.747)	0.749(0.530-1.07)
15-min	0.691(0.534-0.904)	0.906(0.640-1.29)
30-min	0.960(0.741-1.25)	1.26(0.889-1.80)
60-min	1.38(1.06-1.80)	1.80(1.27-2.58)
2-hr	2.07(1.60-2.71)	2.72(1.92-3.88)
3-hr	2.62(2.02-3.43)	3.43(2.42-4.90)
6-hr	3.80(2.94-4.97)	4.97(3.51-7.09)
12-hr	5.16(3.99-6.75)	6.70(4.74-9.57)
24-hr	6.99(5.87-8.50)	9.06(7.17-11.7)

Peachy Canyon

5-min	0.408(0.313-0.538)	0.538(0.379-0.769)
10-min	0.585(0.448-0.770)	0.770(0.544-1.10)
15-min	0.707(0.542-0.932)	0.932(0.658-1.33)
30-min	0.990(0.759-1.30)	1.30(0.921-1.87)
60-min	1.44(1.11-1.90)	1.90(1.34-2.72)
2-hr	2.09(1.60-2.75)	2.76(1.95-3.94)
3-hr	2.62(2.01-3.46)	3.45(2.44-4.94)
6-hr	3.82(2.93-5.03)	5.01(3.53-7.16)
12-hr	5.32(4.08-7.00)	6.89(4.87-9.86)
24-hr	7.22(6.03-8.82)	9.32(7.29-12.2)

TABLE 2
NOAA ATLAS PRECIPITATION DATA
SMCSD WWTF FLOOD RISK ASSESSMENT STUDY

NOAA ATLAS 14 PRECIPITATION

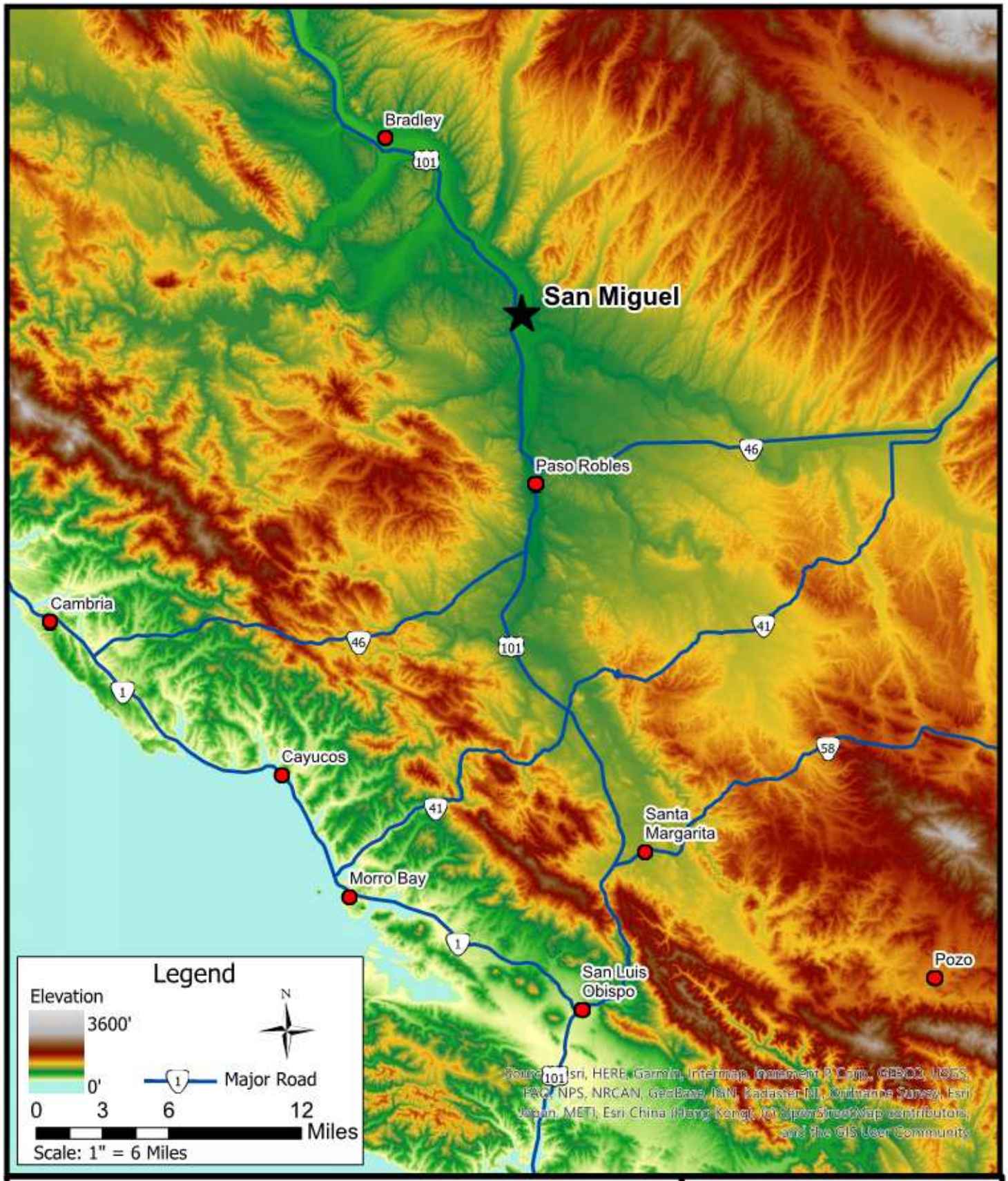
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	100-YR PRECIPITATION	500-YR PRECIPITATION
5-min	0.417(0.326-0.539)	0.539(0.391-0.750)
10-min	0.598(0.468-0.773)	0.772(0.560-1.08)
15-min	0.723(0.565-0.934)	0.934(0.678-1.30)
30-min	1.01(0.792-1.31)	1.31(0.949-1.82)
60-min	1.49(1.17-1.93)	1.93(1.40-2.68)
2-hr	2.16(1.69-2.79)	2.78(2.02-3.88)
3-hr	2.74(2.14-3.54)	3.54(2.57-4.92)
6-hr	4.04(3.16-5.22)	5.20(3.78-7.24)
12-hr	5.66(4.42-7.31)	7.24(5.25-10.1)
24-hr	7.73(6.36-9.60)	9.88(7.54-13.2)

Upper Salinas

	100-YR PRECIPITATION	500-YR PRECIPITATION
5-min	0.423(0.337-0.534)	0.526(0.388-0.721)
10-min	0.606(0.484-0.766)	0.754(0.556-1.03)
15-min	0.732(0.585-0.926)	0.912(0.672-1.25)
30-min	1.04(0.828-1.31)	1.29(0.952-1.77)
60-min	1.54(1.23-1.95)	1.92(1.42-2.63)
2-hr	2.28(1.82-2.88)	2.86(2.11-3.92)
3-hr	2.94(2.35-3.72)	3.71(2.73-5.08)
6-hr	4.46(3.56-5.64)	5.64(4.16-7.73)
12-hr	6.40(5.11-8.10)	8.03(5.92-11.0)
24-hr	8.90(7.31-11.1)	11.1(8.49-14.9)

FIGURES

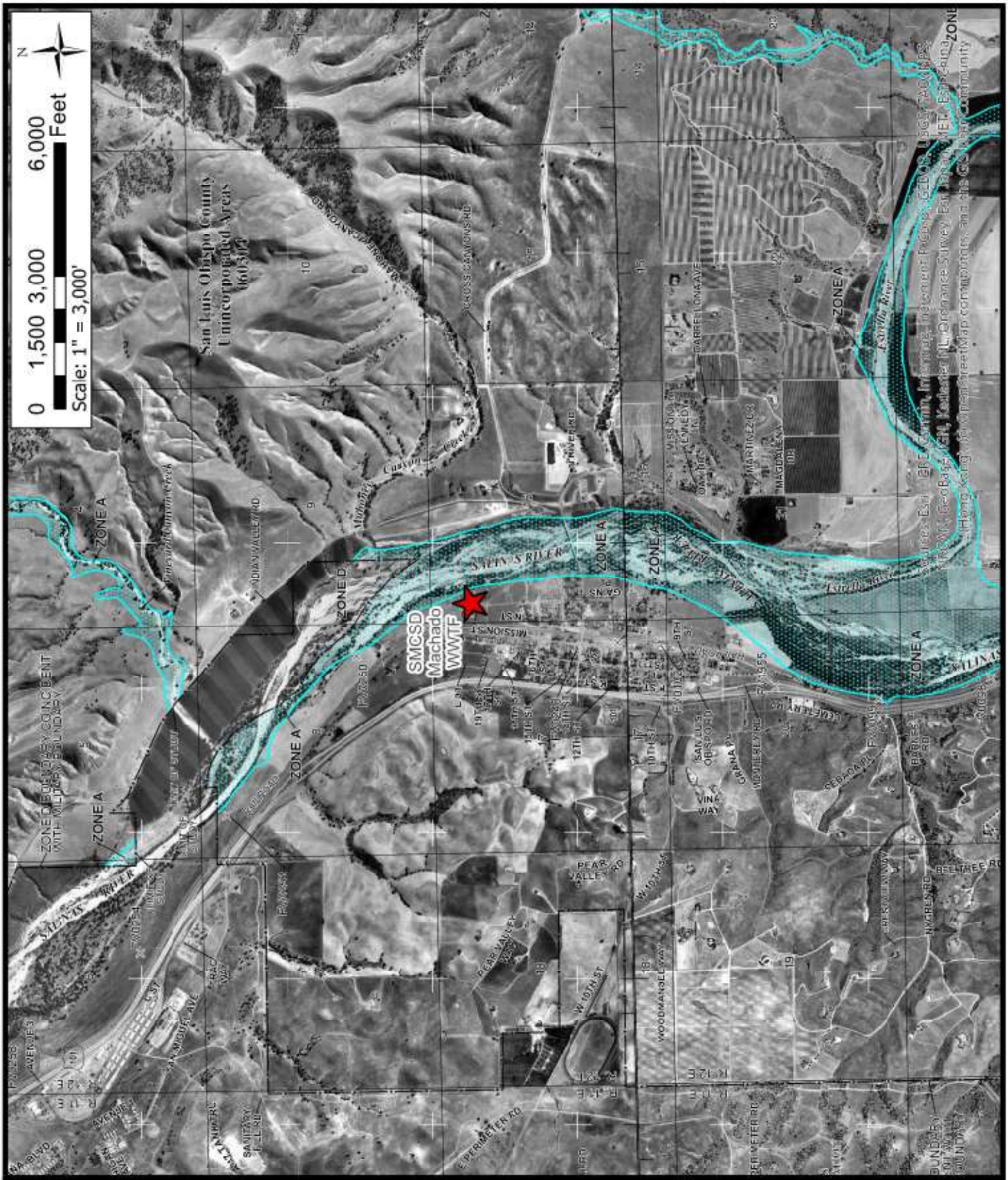


Location Map

2020.04.003 WWTP Flood Assessment

San Miguel Community Services District Figure 1

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P.O. BOX 151 SAN LUIS OBISPO, CA 93406
BREELY@MONSOONCONSULTANTS.COM (805) 476 6168

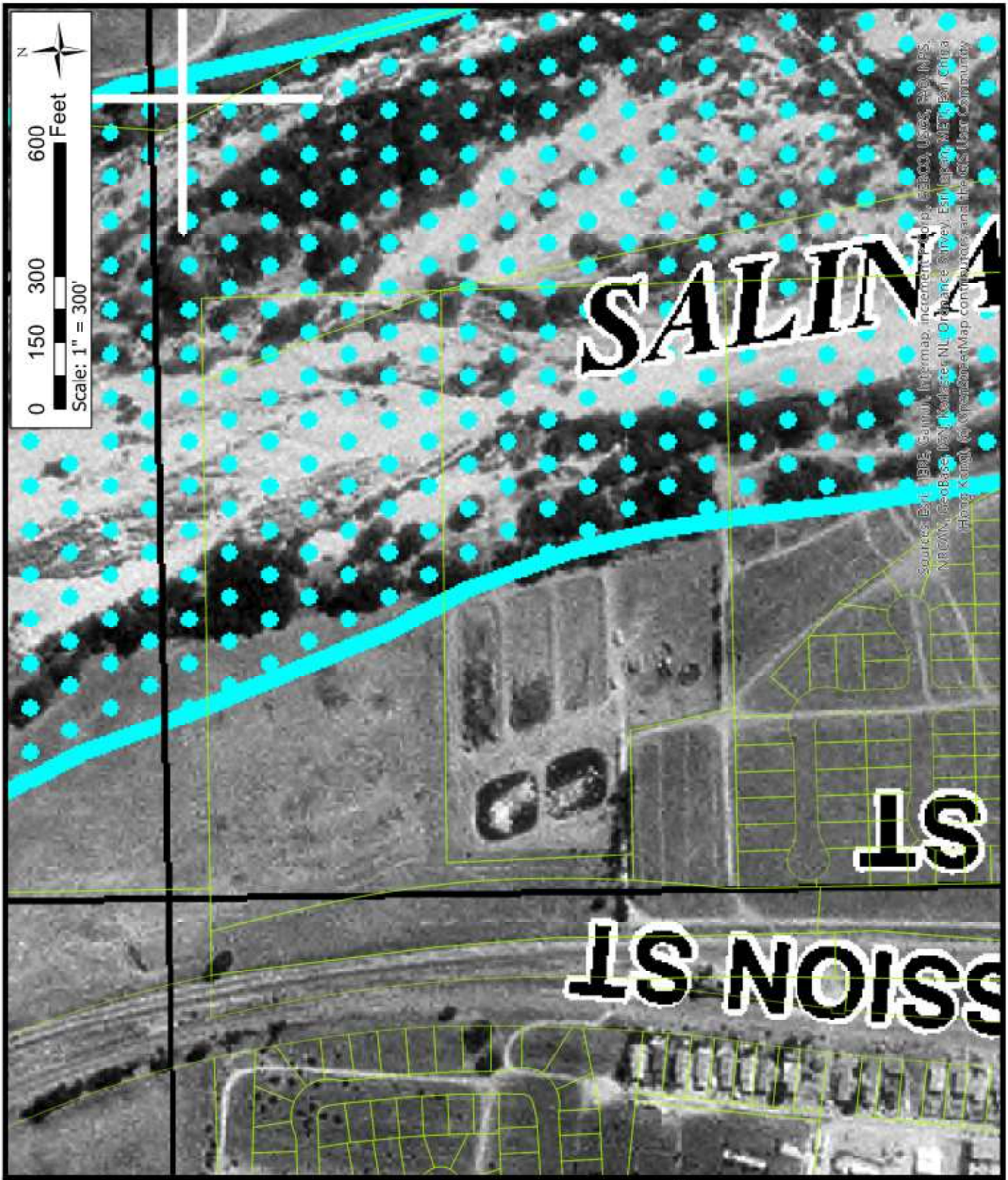


FEMA FIRM

2020.04.003 WWTP Flood Assessment

San Miguel Community Services District Figure 2

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FEMA FIRM (Zoomed)

2020.04.003 WWTP Flood Assessment

San Miguel Community Services District Figure 3

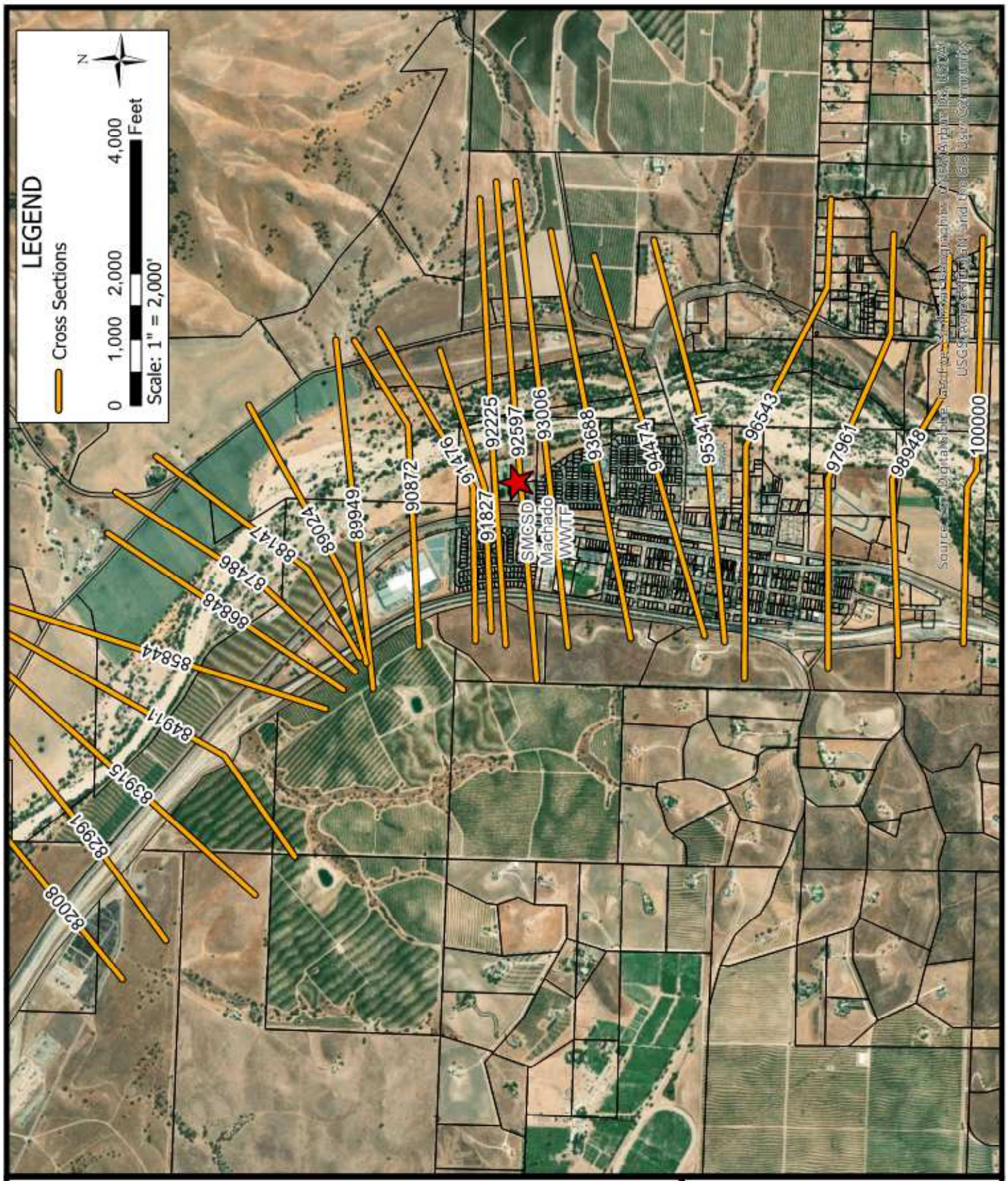
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Watershed Location Map

2020.04.003 WWTP Flood Assessment

San Miguel Community Services District Figure 4

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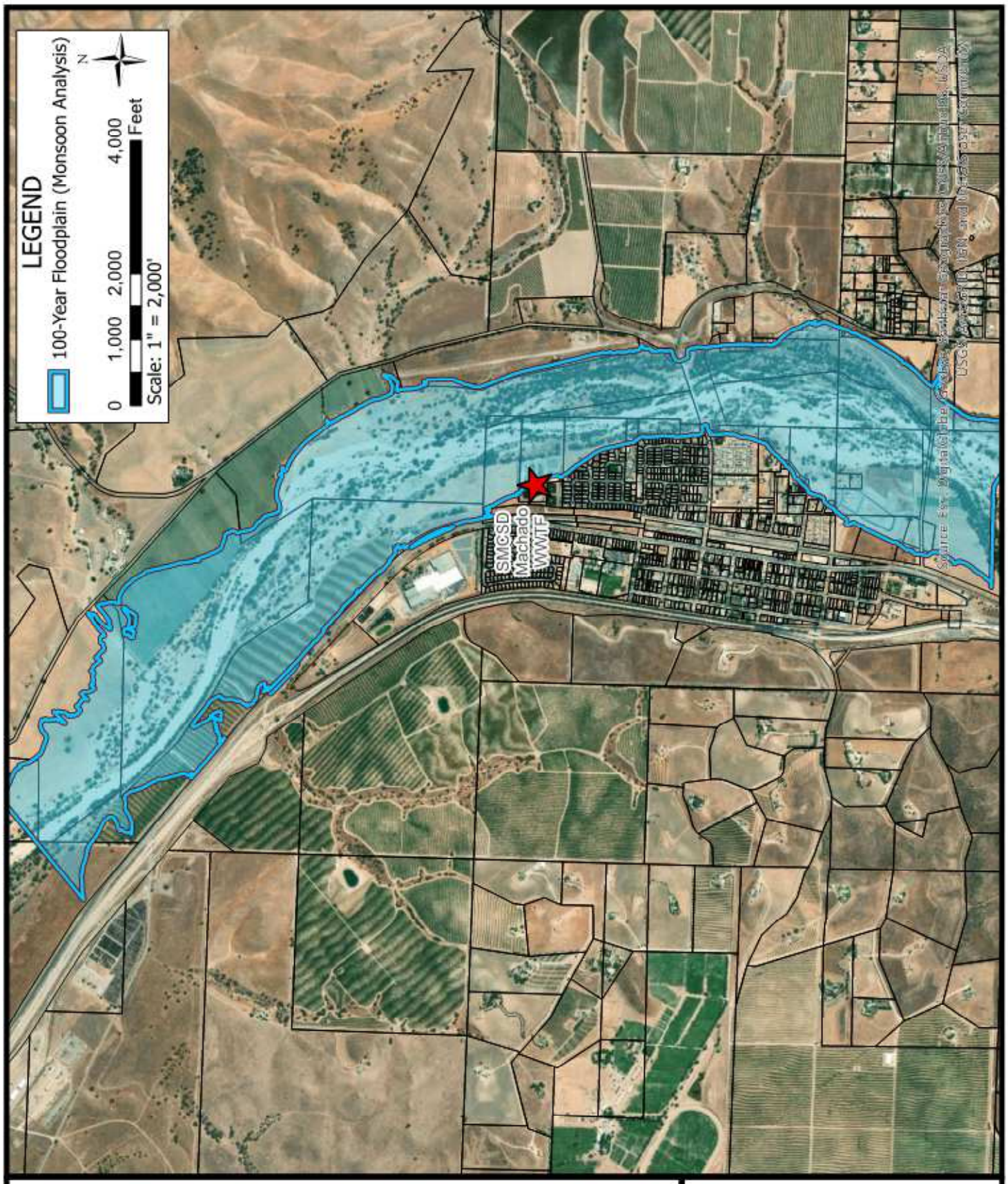


HEC-RAS Hydraulic Model Cross-Sections

2020.04.003 WWTP Flood Assessment

San Miguel Community Services District — Figure 5

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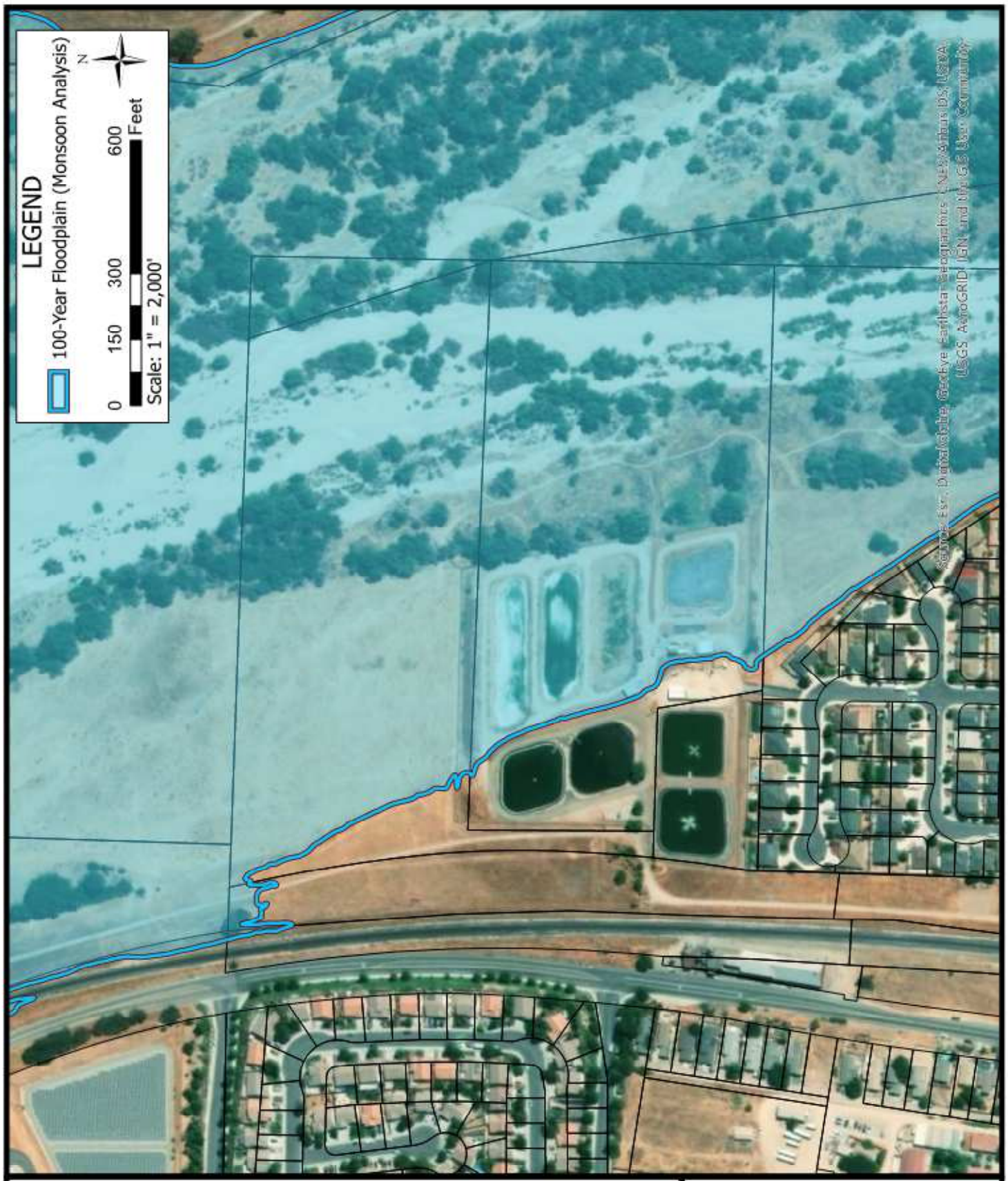
100-year Flood Inundation Map

2020.04.003 WWTP Flood Assessment

San Miguel Community Services District

Figure 6

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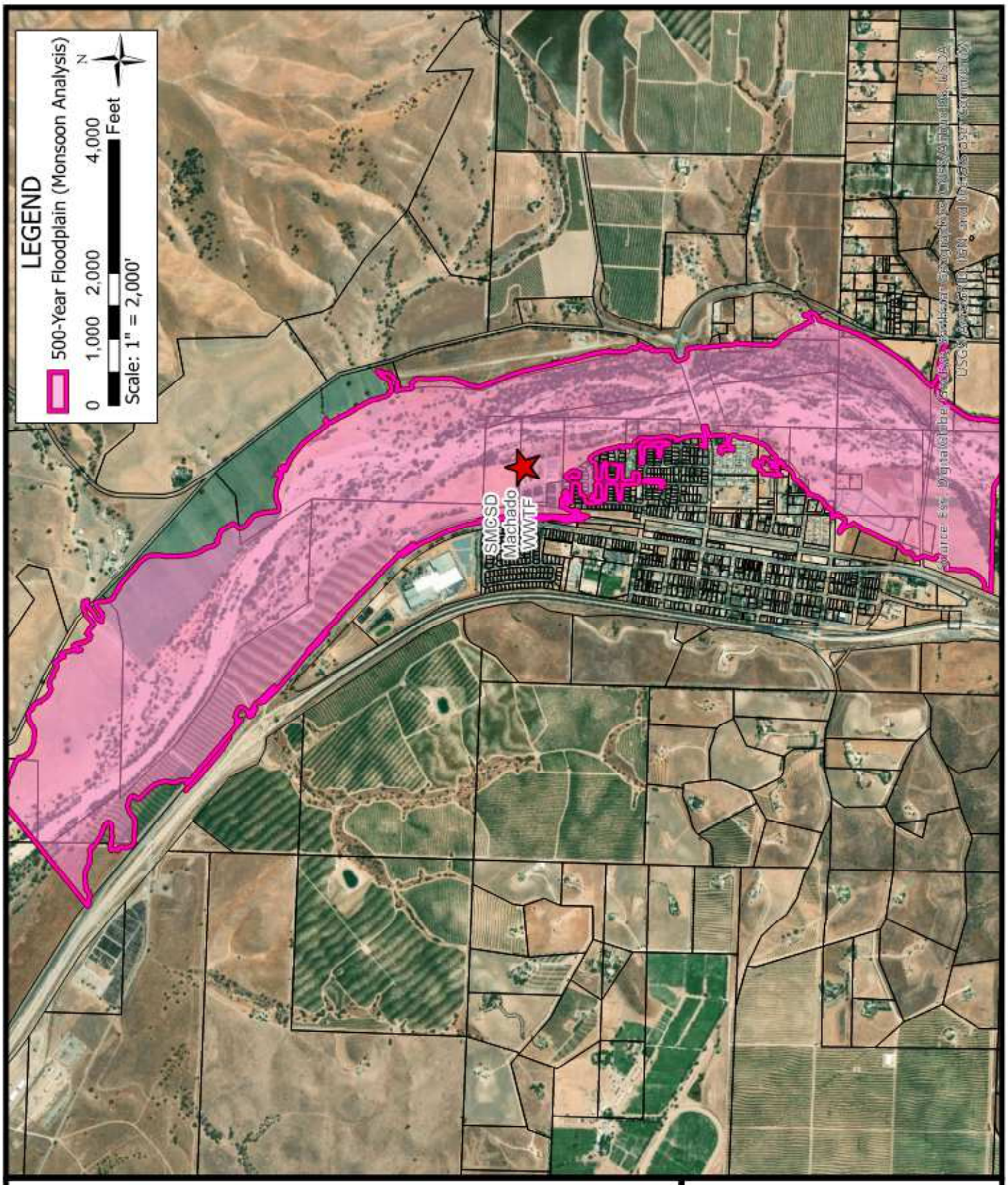


100-year Flood Inundation Map (Zoomed)

2020.04.003 WWTP Flood Assessment

San Miguel Community Services District — Figure 7

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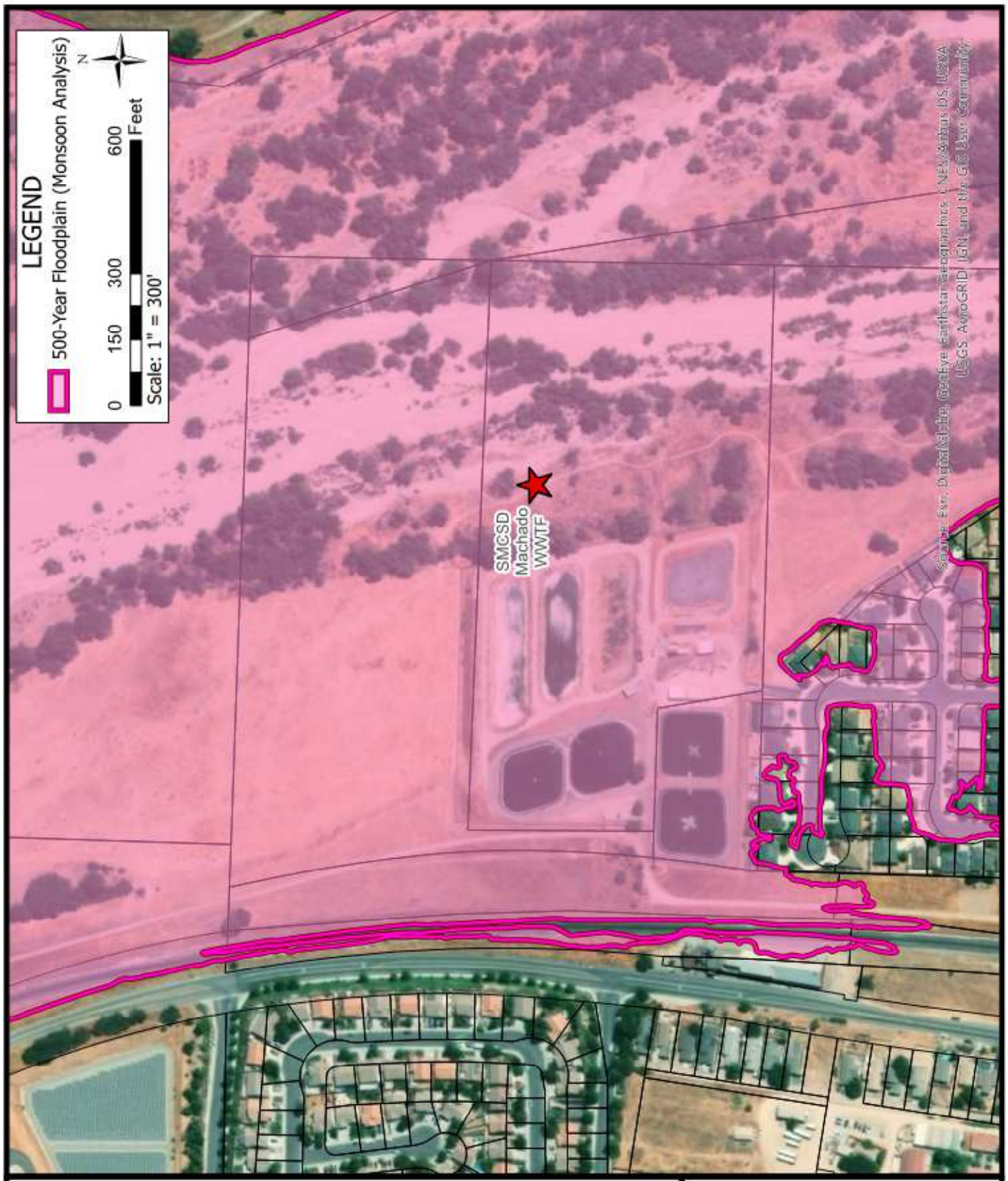


500-year Flood Inundation Map

2020.04.003 WWTP Flood Assessment

San Miguel Community Services District Figure 8

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500-year Flood Inundation Map (Zoomed)

2020.04.003 WWTP Flood Assessment

San Miguel Community Services District — Figure 9

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PHASE I ARCHAEOLOGICAL SURVEY REPORT

SAN MIGUEL COMMUNITY SERVICES DISTRICT
WASTEWATER TREATMENT FACILITY UPGRADE/EXPANSION PROJECT

Prepared for:

San Miguel Community Services District
1150 Mission Street
San Miguel, CA 93451
Contact: Kelly Dodds, Director of Utilities

Prepared by:

DUDEK

621 Chapala Street
Santa Barbara, California 93101
Contact: Heather McDaniel McDevitt, Senior Archaeologist

MAY 2021

PROJECT INFORMATION PAGE

Report Title:	Phase I Archaeological Survey Report for the San Miguel Community Services Wastewater Treatment Facility Upgrade/Expansion Project Confidential – Not for Public View
Lead Agency:	County of Santa Barbara
Authors:	Heather McDaniel McDevitt, M.A., RPA; Jennifer De Alba, B.A.; Kira Archipov, B.S.; with contributions to the prehistoric context section by Loukas Barton Ph.D. Signature:_____
Firm:	Dudek 621 Chapala Street Santa Barbara, California 93101 805.963.2074
Project Proponent:	Kelly Dodds – San Miguel Community Services District
Report Date:	May 2021
Type of Study:	Phase I Archaeological Resources Study
USGS Quads:	San Miguel
Project Extent:	Approximately 38.4-acre (WWTP Project Site) and Approximately 4 miles recycled water conveyance system pipeline
Resources:	P-40-001271 (within proposed Project site) and Sixteen cultural resources within 1-mile
KEYWORDS:	Phase I Archaeological Survey Report, Pedestrian Survey, San Miguel Community Services District, Waste Water Treatment Plant

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Appendix B NAHC Sacred Land Files Records Search – Confidential

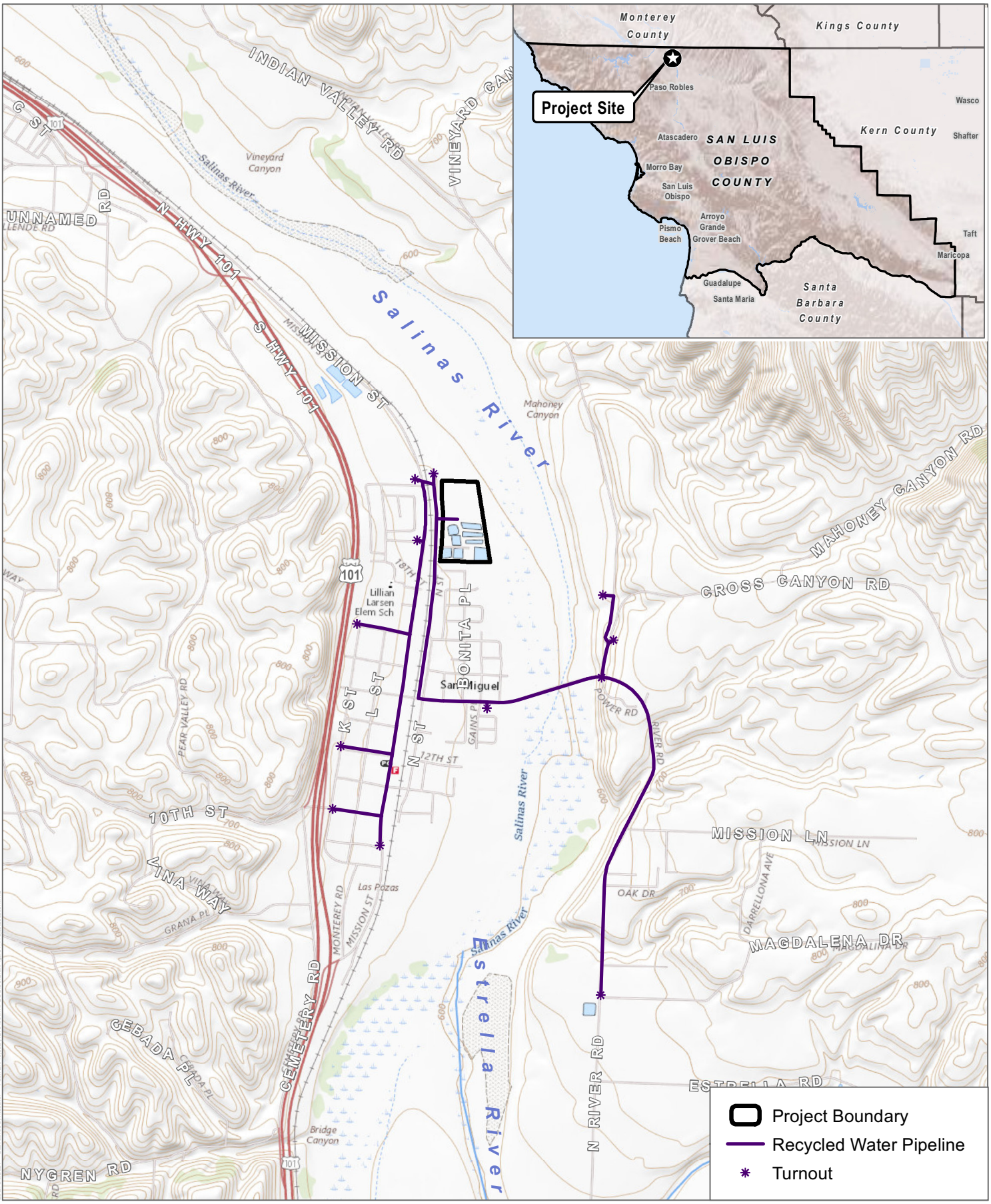
1.0 INTRODUCTION

This Archaeological Survey Report (report) presents the results of a Phase 1 cultural resources investigation assessing absence or presence of cultural resources, the potential for unknown cultural resources to exist and the impacts to both known and unknown cultural resources as a result of the proposed San Miguel Community Services District Wastewater Treatment Plant Upgrade/Expansion Project [Project] located in the community of San Miguel, San Luis Obispo County, California (see Figure 1). The cultural resources investigation satisfies the California Environmental Quality Act (CEQA) and San Luis Obispo County Cultural Resources Guidelines and includes an archaeological site records and literature search, review of historic maps, aerials and archival data, Native American Heritage Commission (NAHC) Sacred Land Files search and an intensive surface survey of the entire proposed Project site.

An archaeological literature and records search conducted at the California Historical Resources Information System (CHRIS) Central Coastal Information Center (CCIC) located at University of California, Santa Barbara determined that one (1) prehistoric cultural resource, CA-SLO-1271, has been previously identified within the proposed Project site and sixteen (16) cultural resources have been previously identified within 1-mile of the proposed Project site. Sixty-eight (68) cultural resource investigations have been undertaken within 1-mile of the proposed Project site in all directions. Fourteen (14) of the cultural resource investigations addressed approximately fifty (50) percent of the proposed Project site. Additionally, a NAHC Sacred Land Files search was requested and the result was negative. The proposed Project site was intensively surveyed by Dudek staff archaeologists on June 24, 2020 and December 17, 2020 using 10-meter (30-foot) transect intervals; no cultural resources were identified as result of the survey under generally reliable ground surface visibility conditions.

Considering no cultural resources have been identified within the proposed Project site APNs 021-051-013 and 021-051-017 and the potential recycled water conveyance system pipeline route as a result of background research; a review of literature, maps and historic aerials; CHRIS and NAHC Sacred Land Files records searches; and a pedestrian survey, the potential for known buried cultural resources to exist within these proposed Project site areas is considered unlikely. However, there are two areas within the proposed Project site that suggest general archaeological sensitivity. One previously recorded cultural resource (CA-SLO-1271) has been identified within the southern portion of the proposed Project site parcel, APN 021-051-015, and was previously subjected to subsurface testing and found not significant pursuant to CEQA criteria and potentially destroyed by earlier construction (Stewart 2004). Additionally, a portion of the potential recycled water conveyance system pipeline, along Mission Street between 9th and 10th streets as well as the Father Reginald Park/9th Street Turn Out, are immediately adjacent to cultural resources associated with the San Miguel Mission (CA-SLO-65 and CA-SLO-67). As such, the potential for unknown prehistoric and historic cultural resources to exist within these portions of the proposed Project site is considered

possible. Therefore, due to the archaeological sensitivity of the general proposed and potential Project site areas, specifically along the southern boundary of APN 021-051-015, the Mission Street Purple Pipeline between 9th and 10th streets and the Father Reginald Park/9th Street Turn Out, it is possible that unknown cultural material and features could be encountered during proposed Project construction. To ensure that any potential for impacts to unknown cultural resources are appropriately addressed consistent with CEQA, measures such as a cultural resource monitoring and inadvertent discovery plan, preconstruction training, an inadvertent discovery clause implemented and included on all construction plans and on-call/periodic archaeological monitoring by a qualified archaeologist are recommended.



SOURCE: World Imagery

DUDEK

0 1,000 2,000 Feet

FIGURE 1

Project Location

San Miguel CSD

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2.0 PROJECT DESCRIPTION/ENVIRONMENTAL SETTING

2.1 Project Location and Description

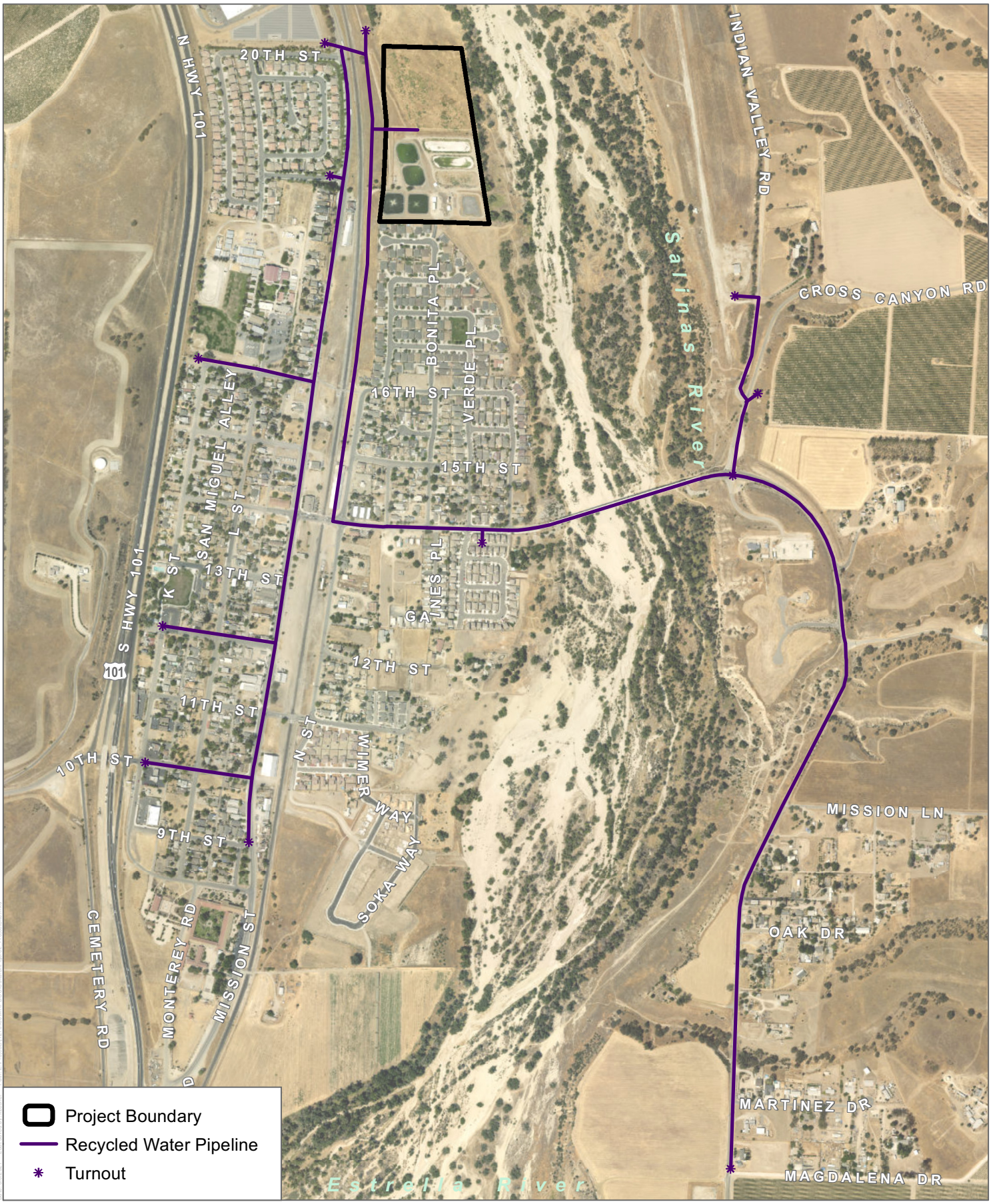
The San Miguel Community Services District (SMCSD) owns and operates the Machado Wastewater Treatment Plant (WWTP), located in the community of San Miguel, County of San Luis Obispo, California. The WWTP occupies approximately 38.4 acres comprised of four separate parcels including Assessor's Parcel Numbers (APNs) 021-051-013, -015, -016 and -017. The main plant occupies approximately 17.8 acres and is comprised of four (4) partially mixed aerated lagoons in series and three (3) percolation ponds while the remaining 20.6 acres are located within the channel of the Salinas River to the east of the plant (Figure 1). The proposed Project site located within APNs 021-051-013, -015, -016 and -017 is surrounded by undeveloped land to the north, residences to the south, the Salinas River and associated riparian environment to the east, and a small portion of undeveloped land and Union Pacific Railroad track to the west. The potential recycled water conveyance system alignment is proposed to be installed within the existing paved street and run southward from 20th Street approximately 1.5 miles to the junction of Mission Street and Monterey Road at the Mission San Miguel/Rios Caledonia turnout on the southern end of San Miguel.

The proposed Project is intended to upgrade wastewater and solids treatment systems; expand the WWTP treatment capacity; implement recycled water treatment systems; and provide ancillary support facilities. In order accomplish the aforementioned goals, the following construction and installation is proposed:

- Improvement of Existing Facilities - existing aeration ponds and three percolation beds will remain, existing access roads will be improved, and existing trailers will be removed.
- Construction of Headworks Building and Treatment Equipment, Secondary Treatment Building, Treated Tertiary Pumping Station, Disinfection/Chemical Storage Building, Disinfection/Chemical Storage Building, building for office and laboratory facilities, building for maintenance and equipment storage/shop facilities, building for environmentally controlled electrical and controls facilities, upgrade to the existing electrical service and controls infrastructure, replacement of existing pumps, installation of back-up power generation facilities and septage receiving station.
- Optional installation of a solar photovoltaic field including ground mounted solar panels in the northern portion of the project site.
- Potential installation of new 8-inch HDPE water transmission and distribution pipelines to convey wastewater to large vineyards to the east and west of the WWTP.

2.2 Environmental Setting

The Project site is represented on the USGS Topo 7.5 Series San Miguel Quadrangle, Township 25S, Range 12E, and Section 16. The community of San Miguel lies within the Salinas Valley, adjacent to the Salinas River at an elevation of approximately 600' amsl. Soils within the proposed Project site, located to the west of the Salinas River, east of Mission Street, and north of 16th Street, consist of two distinct types: Metz loamy sand and Hanford and Greenfield fine sandy loams (USDA 1983). The Hanford and Greenfield fine sandy loam exist at 2 to 9 percent slopes and has a series typically consisting of surface soil that is light brownish gray fine sandy loam and subsoil that is pale brown and light yellowish brown fine sandy loam. The Metz loamy sand exists at both 0 to 5 percent slopes and has a series typically consisting of surface soil that is pale brown loamy sand and subsoil that is stratified layers of very pale brown and pale brown loamy sand. Soils along the pipeline route, west of the Salinas River also consist of Hanford and Greenfield fine sandy loam, as well as Arbuckle fine sandy loam at 2 to 9 percent slopes. Soils along the pipeline route, east of the Salinas River, consist of Arbuckle-San Ysidro complex at 2 to 9 percent slopes, and Arbuckle-Positas complex at 50 to 75 percent slopes. Arbuckle soil has a series typically consisting of 0-10 inches of pale brown fine sandy loam; 10-19 inches of light yellowish brown fine sandy loam; and 19-24 inches of light brown and light yellowish brown sandy clay loam. Contemporaneous flora include native perennial grasses, such as Nodding Stipa (*Stipa cernua*) and Purple Stipa (*Stipa pulchra*) interspersed with various and abundant non-native European annual vegetation. Existing fauna include a variety of avian species and terrestrial mammals such as coyote, American badger, black-tailed hare, California ground squirrel, and California vole.



SOURCE: World Imagery

DUDEK

0 462.5 925 Feet

FIGURE 2

Project Site

San Miguel CSD

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3.0 BACKGROUND RESEARCH

3.1 Prehistoric Setting

Research on the prehistory of California's Central Coast and the Southern Coast Ranges began in the early 1900s, though most of the work has been conducted since the 1960s. On the basis of both primary synthetic research (e.g. Pohorecky 1976; Bouey and Basgall 1991; Greenwood 1972; Bertrando and Levulett 2004; Betts and Foster 2001; Reinman 1961; Jones 1996) Terry Jones and colleagues (Jones et al. 2007) provide perhaps the most current overview of prehistoric adaptive change for a region that includes the coastal and interior areas from San Mateo County in the north to San Luis Obispo County in the south.

The temporal framework promoted by Jones et al. (2007), and others (Farquhar et al. 2011; Stevenset al. 2013), spans a period of approximately 10,000 to 12,000 years and is divided into six different periods. The periods track perceived changes in prehistoric settlement patterns, subsistence practices, and technological advances. These adaptive shifts are identified by changes in material culture found in the archaeological record. Table 1 summarizes the cultural chronology, which is approximate, and may differ somewhat from those established for adjacent parts of California (e.g. the Santa Barbara Channel, the San Francisco Bay, and the Central Valley).

Table 1.
California Central Coast Chronology

Temporal Period	Date Range*
Paleo-Indian	Pre-10,000 BP
Millingstone (Early Archaic)	10,000–5500 BP
Early Period	5500–2600 BP
Middle Period	2600–1000 BP
Middle-Late Transition	1000–700 BP
Late Period	700 BP–AD 1769

Source: Jones et al. (2007).
Note: *Years Before Present (BP). Present is 1950 AD.

Paleo-Indian Period (prior to 10,000 years ago)

The Paleo-Indian Period represents the initial occupation of the area and evidence of it is quite sparse across the region. On the mainland, artifacts dating to this time are mainly isolated artifacts or sparse lithic scatters. In the San Luis Obispo area, fluted points are documented near the towns of Nipomo and Santa Margarita. The traditional interpretation is that people living during this time were highly mobile hunters whose subsistence efforts focused on large terrestrial mammals.

Erlandson et al. (2007) captures an alternative to this perspective, known as the "kelp highway hypothesis" for the peopling of the Americas. Proponents of this (Dixon 1999; Fladmark 1979) argue that the earliest inhabitants of the region focused their economic pursuits on coastal resources. Archaeological sites that support this hypothesis are mainly from the Santa Barbara Channel Islands.

Millingstone Period (10,000 – 5500 years ago)

In contrast to sparse evidence for the Paleo-Indian Period, archaeologists report sites dating to the Millingstone Period at several locations throughout the Central Coast. David Banks Rogers first identified this pattern in Southern California as containing abundant handstones, millingstones, cores, and cobble tools, along with a sparse, simple flakedstone assemblage. Wallace further documented the pattern, and Greenwood recognized a Central Coast Millingstone component at CA-SLO-2. Since that time, archaeologists have documented sites with Millingstone components along the Central Coast, and possibly as far north as Tehama County in the Sacramento Valley (Fitzgerald and Jones 1999).

Millingstone assemblages are characterized by abundant millingstones and handstones, core and core-cobble tools, and the occasional projectile point, which, when present, can be lanceolate or large side-notched varieties (Jones et al. 2007). Eccentric crescents are also found in Millingstone components. Sites are often associated with shellfish remains and small mammal bone, which suggest a collecting-focused economy. Contrary to these findings, deer remains are abundant at some Millingstone sites (Jones et al. 2008) which suggests a flexible subsistence focus. People living during the Millingstone era appear to have been highly mobile.

Early Period (5500 – 2600 years ago)

The Early Period corresponds with the earliest portion of what Rogers (1929) called the "Hunting Culture" (Jones et al. 2007: Figure 9.4). The Early Period is marked by a greater emphasis on formalized flaked stone tools, such as projectile points and bifaces, and the initial use of mortar and pestle technology. Early Period sites are located in more varied environmental contexts than

Millingstone sites, suggesting more intensive use of the landscape of resources than in previous periods.

Early Period artifact assemblages are characterized by large Side-notched and Rossi Square-stemmed projectile points, and Spire-lopped (A), End-ground (B2b and B2c), Cap (B4), and Rectangular (L-series) *Olivella* beads. Other artifacts include less temporally diagnostic Contracting-stemmed and Año Nuevo Long-stemmed points, and bone gorges.

Archaeologists have long debated whether the shift in site locations and artifact assemblages during this time represent either population intrusion as a result of mid-Holocene warming trends, or an in-situ adaptive shift. The initial use of mortars and pestles during this time appears to reflect a more labor intensive economy associated with the adoption of acorn processing.

Middle Period (2600 – 1000 years ago)

The Middle Period is marked by a strong trend towards greater investments in resource extraction, tool production, and social organization. During this time, high-cost plant foods come to dominate the subsistence base, people start to live in specific places for longer periods of time, and they start to travel out to acquire focal resources for transport back to their home bases. Artifacts common to this era include Contracting-stemmed projectile points, a variety of *Olivella* shell beads, and *Haliotis* (i.e. abalone) ornaments. Bone tools and ornaments are also common, especially in the richer coastal contexts, and circular shell fishhooks appear alongside the pre-existing bone gorge hooks. Grooved stone net sinkers are also found in coastal sites. For the first time mortars and pestles become more common than millingstones and handstones at some sites (Jones et al. 2007:139).

Faunal remains highlight a shift toward prey species that require more effort to capture, which is interpreted as evidence of greater search and processing time or more labor-intensive technologies. These labor-intensive species include small schooling fishes, sea otters, rabbits, and plants such as acorn. Jones and Haney (2005) offer that Early and Middle Period sites are difficult to distinguish without chronologically-anchored shell bead types due to the similarity of the artifact assemblages. Indeed, that both the Early and Middle Periods correspond to Rogers' (1929) "Hunting Culture" (see Jones et al. 2007) points to important cultural continuities, and that while economic behavior does seem to intensify through time (specifically with regards to resource acquisition, settlement patterns, and technological investment) assignation of a specific archaeological site or component on the basis of limited information is problematic.

Middle-Late Transition Period (1000 – 700 years ago)

The Middle-Late Transition marks the end of Rogers' "Hunting Culture," which seems to occur sometime during this period. Artifacts associated with the Middle-Late Transition include Contracting-stemmed, Double Side-notched, and small Leaf-shaped projectile points. The latter are thought to represent the introduction of bow and arrow technology to the region. A variety of *Olivella* shell bead types are found in these deposits, along with notched line sinkers, hopper mortars, and circular shell fishhooks (Jones et al. 2007).

The Middle-Late Transition is a time that appears to correspond with social reorganization across the region. This is also a period of marked environmental change as attributed to the Medieval Climatic Anomaly. Jones and colleagues suggest that the fluctuations between cool-wet and warm-dry conditions that characterize the Medieval Climatic Anomaly were an important cause of cultural change (Jones et al. 1999). Middle-Late Transition sites in San Luis Obispo County seem to represent population aggregations. Examples include CA-SLO-9, which is interpreted as a year-round coastal occupation site; CA-SLO-239 contains a large architectural feature; CA-SLO-536, located slightly inland, harbors an extensive bedrock mortar complex adjacent to Chorro Creek; and CA-SLO-1778 contains a substantial prepared house floor feature on a terrace above the Nacimiento River.

Late Period (from 700 years ago to A.D. 1769)

Late Period sites are found in a variety of environmental conditions and include newly occupied task sites and encampments, as well as previously occupied localities. Artifacts associated with this period include Cottonwood and Desert Side-notched arrow points, flaked stone drills, steatite and clamshell disc beads, *Haliotis* disc beads, *Olivella* bead types E1 and E2, and earlier used B2, B3, G1, G6, and K1 types. Millingstones, handstones, mortars, pestles, and circular shell fishhooks also continue to be used (Jones et al. 2007; Stevens et al. 2013).

Coastal sites dating to the Late Period tend to be more about resource acquisition or processing, while residential sites are more common inland (Jones et al. 2007:140).

3.2 Ethnohistoric Setting

The Project Area, including the City of San Miguel, and the Mission of San Miguel Archángel, sits at the historically documented boundary zone between two ethnolinguistic groups: the Salinan to the north, and the Northern/Obispeño Chumash to the south. Because different ethnographers draw the boundaries of these ethnolinguistic territories in somewhat different places, these boundaries may

have been quite fluid; perhaps at times shared, or even contested. For example, Golla (2011) puts the boundary somewhere between Paso Robles and Mission San Miguel, while Milliken and Johnson (2005) put the boundary just south of the mission, at San Marcos Creek. What we do know, is that Franciscan establishment of Mission San Miguel in AD 1797 was consciously directed at Salinan speakers living in the area where the mission was eventually built (Sitjar 1795 in Milliken and Johnson 2005), many of whom were already living at Mission San Antonio de Padua to the north (established in 1771) and Mission San Luis Obispo to the south (established in 1772). Importantly, mission records from San Miguel reveal that this mission drew Salinan speakers from the local region, some Salinan speakers form the north, Salinan/Playano speakers from coastal areas to the west, Salinan speakers from the Coast Ranges to the east, Yokuts speakers from the eastern Coast Ranges or western Central Valley, and speakers of Northern Chumash/Obispeño to the south (Milliken and Johnson 2005). Curiously, Esselen speakers (who neighbored the Salinan speakers to the north) are not documented in the mission records of San Miguel.

Though Cabrillo sailed up the Pacific Coast of California in 1542, and Cermeño anchored somewhere along the San Luis Obispo coast in 1595, the first Europeans to encounter Salinan peoples near the Project Area came with the Gaspar de Portolá overland expeditions of 1769 and 1770. Diarists from this party provide the earliest written observations of the area (Brown 2001; Milliken and Johnson 2005; Jones and Haney 2005). Information about Salinan lifeways can be gleaned from a variety of records that reference mission records and salvage ethnographies that were conducted and variably reported by Merriam, Mason, Kroeber, and J.P. Harrington (see Milliken and Johnson 2005 for a thorough account). Hester (1978) condenses many of these into a concise ethnography of Salinan life, and Turner (1988) describes the known documents pertaining to Salinan language.

3.3 Historic Setting

The historic occupation of the project vicinity can be divided into three settlement periods: the Mission Period (A.D. 1769–1830), the Rancho Period (ca. A.D. 1830–1865), and the American Period (ca. A.D. 1865–1915). Construction of Mission San Miguel in 1797 altered both the physical and cultural landscape of the region. The mission was the center of Spanish influence in the region and affected native patterns of settlement, culture, trade, industry, and agriculture. Following the secularization of the missions by the Mexican Government in 1821, California became part of the Republic of Mexico.

Secularization of lands and a focus on cattle raising marked the Rancho Period, where large land grants of mission lands were ceded to wealthy, prominent Spanish families. Native Americans continued to work as laborers on ranchos during this period. With California statehood in 1850 and the advent of the American Period, farming and more intensive land uses steadily replaced cattle stock raising. Cattle ranching was substantially curtailed by a prolonged drought in the 1860s.

3.4 Previous Research

CHRIS Records Search

On June 17, 2020 and January 4, 2021, staff of the Central Coast Information Center, located on the campus of University of California, Santa Barbara conducted a records search of the California Historical Resources Information System (CHRIS) at the request of Dudek. The search included any previously recorded cultural resources and investigations within a 1-mile radius of the proposed Project site. The CHRIS search also included a review of the NRHP, the CRHR, the California Points of Historical Interest list, the California Historical Landmarks list, the Archaeological Determinations of Eligibility list, and the California State Historic Resources Inventory list. Confidential Attachment A provides the records search results maps and a complete bibliography of all prior cultural resource studies occurring within 1-mile of the proposed Project site.

Previously Recorded Cultural Resources

The CCIC records indicate that one prehistoric cultural resource has been previously recorded within the proposed Project site and sixteen (16) cultural resources have been previously recorded within the 1-mile radius of the proposed Project site. Of the cultural resources, five (5) are historic archaeological sites, four (4) are historic built resources, seven (7) are prehistoric sites and one is a prehistoric isolate. The thirteen (13) prehistoric and historic resources are briefly described below followed by Table 2 summarizing all previously recorded cultural resources within 1-mile of the Project site.

CA-SLO-65

CA-SLO-65 is a historic site that includes the San Miguel Mission and immediately surrounding area and is located approximately less than 25 meters (82 ft.) southwest of the proposed Project site conveyance system pipeline and Father Reginald Park/9th Street Turn Out. CA-SLO-65 is documented as consisting of the Mission adobe, the Mission Cemetery, historic refuse, and artifacts related to the habitation of Native Americans at the San Miguel Mission. The site was originally formally recorded in

1949 by Pilling, who described the site as an "early Caucasian site in the Mission region". CA-SBA-65 was revisited in 1966 by Miller who recorded a shell midden containing animal bones and chipped stone in the area directly north of the Mission cemetery. CA-SBA-65 was again formally recorded in 1999 by Waechter who extended the site boundary west beyond the railroad right-of-way. The San Miguel Mission Archangel was listed on the National Register of Historic Places in 1971.

CA-SLO-67

CA-SLO-67 is a multicomponent site measuring approximately 30 by 10 meters (100 by 35 feet) at an elevation of 550' amsl and is located approximately 10 meters (32 ft.) south of the proposed Project site conveyance system pipeline and Father Reginald Park/9th Street Turn Out. CA-SLO-67 is described as a dark midden with medium marine shell content that has likely been minimized in size due to modern development with the historic component of the site consisting of reportedly the former camp site of Lt. Col. John C. Fremont. The site was originally formally recorded in 1966 by Miller who described the site as consisting of dark midden with medium density shell, bone and teeth food refuse and stone flakes.

CA-SLO-505

CA-SLO-505 is a prehistoric site measuring approximately 180 meters north to south and 90 meters east to west (591 by 295 feet) at an elevation of 600' amsl and is located approximately 410 meters (1345 ft.) northeast of the WWTP portion of the proposed Project site. CA-SLO-505 was formally recorded in 1969 by the National Park Service, who described it as a probable prehistoric occupation site consisting of fragmented groundstone (pestles and manos), obsidian and chert flakes, and clusters of fire-affected rocks. The National Park Service also noted there was a probability of housepits existing beneath plowed areas and that at the time of recording the site had been recently subjected to a flooding event that demonstrated the potential for previous and future disruption of the site.

CA-SLO-1058

CA-SLO-1058 is a prehistoric site measuring over 600 meters at an elevation of 640' amsl and is located approximately 1280 meters (4199 ft.) north of the WWTP portion of the proposed Project site. CA-SLO-1058 is recorded as consisting of a surface scatter of utilized flakes, debitage, and cores, all of chert. CA-SLO-1058 was formally recorded in 1982 by Hampson, Loeffler, and Wilfong who ascertained the site to be a probable "occupation site with some depth of midden" due to the quantity of material they observed.

CA-SLO-1062

CA-SLO-1062 is a prehistoric site an elevation of 640' amsl and is located approximately 820 meters (2690 ft.) southeast of the proposed Project conveyance system pipeline and J Lohr Vineyards Turn Out. CA-SLO-1062 is recorded as consisting of multiple bedrock mortars and was formally recorded in 1982 by Hampson, who was only able to view the site from a distance due to the site being outside the survey area and no permission was provided to enter the property the site is located on. However, from the description provided Hampson, he estimated the site as having potential of being "one of the major occupation sites in the area" and "possibly connected to nearby San Miguel Mission".

CA-SLO-1271

CA-SLO-1271 is a prehistoric site measuring 240 meters north to south and 30 meters east to west (790 by 100 ft.) at an elevation of 615' amsl and is located within the southwestern quadrant of the Wastewater Treatment facility on a terrace overlooking the Salinas River. CA-SLO-1271 is documented as consisting of burnt granite rock, chert debitage as well as a Pismo clam shell and a cut animal bone of historic age and was originally formally recorded in 1989 by Gibson, who described the site as low-density concentration of heat-treated granite and chert artifacts.

CA-SLO-1934H

CA-SLO-1934H is a historic site measuring approximately 122 meters north to south and 46 meters east to west (400 by 150 ft.) at an elevation of 650' amsl and is located approximately less than 25 meters (82 ft.) north of the proposed Project site where the proposed conveyance system River Road and Cross Canyons Purple pipelines intersect. CA-SLO-1934H is documented as consisting of glass bottles and jars, ceramics, tin cans, sawed bone, metal car parts, and modern household appliance parts. CA-SLO-1934H was formally recorded in 1999 by Ryan who described the site as a historic and modern trash deposit with artifacts dating between 1915 and post 1945.

CA-SLO-2004

CA-SLO-2004 is a prehistoric site measuring 116 meters north to south and 22 meters east to west (381 by 72 ft.) at an elevation of 600' amsl and is located approximately 95 meters (312 ft.) southeast of the WWTP portion of the proposed Project site. CA-SLO-1934H is documented as consisting of ten chert flakes and one projectile point. CA-SLO-2004 was formally recorded in 1999 by Davis and Kelly who describe the site as a sparse lithic scatter located on a terrace along the west side of the Salinas River.

CA-SLO-2189H

CA-SLO-2189H is a historic site measuring 364 meters north to south and 638 meters east to west (1194 by 2093 ft.) at an elevation of 608-623' amsl and is located approximately less than 40 meters (131 ft.) east of the proposed Project conveyance system pipeline and Father Reginald Park/9th Street Turn Out. CA-SLO-2189H is documented as consisting of concrete foundations, refuse from a WWII era military barracks, and several in situ Mission Period features. CA-SLO-2189H was originally formally recorded in 2002 by Singer who observed an adobe wall, military barracks refuse, a section of roadway, and a fragmented boulder mortar. CA-SLO-2189H was revisited in 2004 by Foster who observed, in addition to the artifacts and features recorded by Singer, the remains of a Mission Period kiln, burned and unburned bone, charcoal, chipped stone tools, debitage, a projectile point, glass and shell beads, ceramics, and marine shell. CA-SLO-2189H has not been evaluated for the National Register of Historic Places, however Foster believed the site is significant in fact it has the potential of providing information about life at the San Miguel Mission.

CA-SLO-2446

CA-SLO-2446 is a prehistoric site at an elevation of 580' amsl and is located approximately 1530 meters (5020 ft.) north of the WWTP portion of the proposed Project site. CA-SLO-2446 was formally recorded in 2015 by Singer and Greenfield who documented the site as consisting of a concentration of Monterey chert flakes and one flake scraper.

CA-SLO-2458

CA-SLO-2458 is a prehistoric site measuring 30 meters north to south and 30 meters east to west (98 by 98 ft.) at an elevation of 640' amsl and is located approximately 600 meters (1,970 ft.) west of the WWTP portion of the proposed Project site. CA-SLO-2458 was formally recorded in 2006 by Singer and Greenfield who documented the site as consisting of Monterey chert flakes located on a terrace east of the Salinas River at the mouth of Mahoney Canyon.

CA-SLO-2791

CA-SLO-2791 is the historic San Miguel Community Park measuring 2.2 acres and is located approximately less than 25 meters (82 ft.) north of the proposed Project site conveyance system pipeline and San Miguel Park/12th Street Turn Out. CA-SLO-2791 was formally recorded in 2017 by Hannahs who recorded the community park because it was constructed in 1950 and potentially significant due to age, but determined through archival research to not be significant according to CEQA criteria and therefore not eligible for the National Register of Historic Places.

P-40-038193

P-40-038196 is a prehistoric isolate located approximately 1395 meters (4577 ft.) south of the proposed Project conveyance system pipeline and Father Reginald Park/9th Street Turn Out. P-40-038196 was formally recorded in 1998 by Polansky who described the isolate as a late stage, red chert biface, thinning flake.

P-40-040762

P-40-040762 is the historic Caledonia Adobe located approximately 855 meters (2805 ft.) southwest of the proposed Project conveyance system pipeline and Father Reginald Park/9th Street Turn Out. P-40-040762 was formally recorded in 1988 by Tim Gallagher of the Department of General Services. The Caledonia Adobe was built in 1846 for Petronilo Rios, to be used as a residence and "headquarters for sheep and cattle operations". P-40-040762 has been determined significant under CEQA and has been listed on the National Register of Historic Places since 1971.

Table 2. Previously Recorded Cultural Resources Within 1-Mile of Project Area

Designation	Resource Description	Recorded By	CRHP/NRHP Eligibility	Intersects Project Site	Approximate Distance from Project Site
CA-SLO-65 (P-40-000065 & P-40-040848)	Historic Mission San Miguel Arcangel.	1949 (Pilling); 1966 (D. S. Miller); 1970 (Louisiana Clayton Dart) 1999 (S. Waechter)	Listed	No	25 meters (82 ft.) southwest
CA-SLO-67 (P-40-000067)	Transferred as a supplemental of CA-SLO-65; multicomponent site with midden, lithic scatter and historic monument as historic camp site of Fremont	1966 (D. S. Miller); 1968 (C. E. Dills)	Unknown	No	10 meters (32 meters) south
CA-SLO-505 (P-40-000505)	Prehistoric site consisting of a low-density lithic scatter, groundstone, and fire-affected rocks.	1969 (National Park Service)	Unknown	No	410 meters (1345 ft.) northeast
CA-SLO-1058 (P-40-001058)	Prehistoric site consisting of a low-density lithic scatter.	1982 (Hampson, Loeffler, Wilfong)	Unknown	No	1280 meters (4199 ft.) north
CA-SLO-1062 (P-40-001062)	Prehistoric site consisting of bedrock mortars.	1982 (Hampson)	Unknown	No	820 meters (2690 ft.) southeast

Table 2. Previously Recorded Cultural Resources Within 1-Mile of Project Area

Designation	Resource Description	Recorded By	CRHP/NRHP Eligibility	Intersects Project Site	Approximate Distance from Project Site
CA-SLO-1271 (P-40-001271)	Prehistoric site consisting of a concentration of fire-affected rock and two chert artifacts.	1989 (R. O. Gibson)	Unknown	Yes	Overlapping
CA-SLO-1934H (P-40-001934)	Historic trash deposit consisting of historic and modern refuse. Historic refuse includes glass bottles, glass jars, tin cans, ceramic fragments, metal fragments, and car parts.	1999 (Christopher Ryan)	Unknown	No	25 meters (82 ft.) north
CA-SLO-2004 (P-40-002004)	Prehistoric site consisting of a low-density lithic scatter.	1999 (K. Davis, A. Kelly)	Unknown	No	95 meters (312 ft.) southeast
CA-SLO-2189H (P-40-002189)	Historic site including concrete foundations, refuse from a WWII era military barracks, and several in situ Mission Period features.	2002 (Clay A. Singer); 2004 (John M. Foster)	Unknown	No	<40 meters (131 ft.) east
CA-SLO-2446 (P-40-002446)	Prehistoric site consisting of Monterey chert flakes and one flaked stone tool.	2006 (Clay A. Singer & Douglas A. Greenfield)	Unknown	No	1530 meters (5020 ft.) north
CA-SLO-2458 (P-40-002458)	Prehistoric site consisting of low-density lithic scatter.	2006 (Clay A. Singer & Douglas A. Greenfield)	Not Evaluated	No	600 meters (1,970 ft.) west
CA-SLO-2791 (P-40-002791)	Historic San Miguel Community Park, dated to 1950.	2014 (Todd Hannahs)	Ineligible	No	<25 meters (82 ft.) north
(P-40-038193)	Prehistoric Isolate consisting of a chert biface	1998 (B. Polansky)	Unknown	No	1395 meters (4577 ft.) south
(P-40-040762)	Historic Caledonia Adobe	1988 (Tim Gallagher)	Listed	No	855 meters (2805 ft.) southeast
(P-40-041115)	Historic electrical utility substation, dated to 1948.	2002 (Kevin Palmer)	Ineligible	No	<25 meters (82 ft.) west
(P-40-041116)	Historic Vernacular-style farm complex, main residence dated to 1912.	2002 (Kevin Palmer)	Ineligible	No	<50 meters (164 ft.) south

Table 2. Previously Recorded Cultural Resources Within 1-Mile of Project Area

Designation	Resource Description	Recorded By	CRHP/NRHP Eligibility	Intersects Project Site	Approximate Distance from Project Site
(P-40-041117)	Historic Craftsman style home and associated outbuildings, dated to 1918.	2002 (Kevin Palmer)	Ineligible	No	<80 meters (262 ft.) southwest
(P-40-041209)	Historic San Miguel Ranch Reservoir constructed between 1919 and 1937.	2007 (E. Timothy Jones)	Unknown	No	510 meters (1673 ft.) west

Previous Cultural Resources Studies

Results of the CHRIS records search indicate that sixty-eight (68) previously conducted studies between 1982 and 2018 were identified within the 1-mile records search radius. Of these studies, fourteen (14) overlap the proposed Project site addressing approximately 50 percent of the proposed Project site. The following paragraphs provide a brief summary of the studies that provide relevant information about the Project site and prerecorded archaeological resources located within and surrounding it. All previous cultural resource studies within the 1-mile radius of the proposed Project site are summarized in the Table 3.

Report No. SL-01622

Results of a Phase I Archaeological Surface Survey of Tract 1840, San Miguel, California (Gibson 1989), documents the results of a Phase I archaeological investigation overlapping a southwestern section of the Wastewater Treatment Facility portion of the proposed Project site. The purpose of the investigation was to determine the presence and significance of any cultural resources that would be impacted by the development of 86 residential lots and the associated roads and utilities. The investigation included a pedestrian field survey and resulted in the identification of one archaeological site and one isolated Franciscan chert flake. The site was recorded as site CA-SLO-1271 and consisted of burnt granite rock fragments, a Monterey chert flake, a Monterey chert core, a saw cut domestic animal bone, and a marine shell fragment the latter of which was determined to be potential historic activity. Gibson noted the site bore similarities to a prerecorded archaeological site CA-SLO-834, a possible seasonal occupation site placed on the National Register of Historic Places. He recommended further archaeological investigation through subsurface testing to determine the resource boundaries and significance, as well as archaeological monitoring during all ground disturbing activities in accordance with CEQA.

Report No. SL-02478

San Miguel Sewer District Project Parcel Number 21-051-13 Project Number 960 (Dills 1993), documents the results of a pedestrian field survey within the southern parcel of the Wastewater Treatment Facility section of the proposed Project site. The survey was conducted on behalf of the San Miguel Sanitary District prior to the construction of two aerated lagoon areas. Prior to the survey a records search was performed that did not identify any prerecorded cultural resources within the project site. Due to poor visibility a backhoe was brought in to remove vegetation. During the survey, building material and domestic trash associated with a house that once resided on the property were observed, along with non-cultural Monterey chert. No cultural resources of an archaeological or structural nature were formally recorded as a result of this study. The report recommended the project proceed without further archaeological inquiry, unless cultural resources were discovered during construction activities.

Report No. SL-02539

Results of Archaeological Surface Survey for the San Luis Obispo County Waterworks District No. 1, Project in San Miguel, San Luis Obispo County (Gibson 1993) documents the results Phase I Archaeological surface survey, which overlaps the proposed pipeline route along River Road. The project area also covered much of San Miguel with the proposed pipeline route running along "L" Street and ending at San Luis Obispo Road. The purpose of the survey was to determine whether any archaeological or cultural resource were present within or adjacent to the proposed route for a water pipeline. The study also included a records search. The records search identified two previously recorded archaeological sites, CA-SLO-1271 and CA-SLO-65. During the survey, no cultural materials were observed within the current proposed Project's conveyance pipeline route. However, Mission Period artifacts were observed along San Luis Obispo Road, between 8th Street and 9th Street resulting in that specific area being deemed sensitive for cultural materials and recommended for monitoring.

Report No. SL-05211

Phase II Archaeological Investigations at CA-SLO-1271: Subsurface Testing at the Proposed Mission Meadows Housing Development in San Miguel, San Luis Obispo County, California (Stewart 2004), documents the results of a Phase II investigation of prerecorded archaeological site CA-SLO-1271, which overlaps the southern boundary of the proposed Project site. The purpose of the investigation was to identify the extent of the subsurface deposit of CA-SLO-1271 and determine the integrity and significance of the site. The investigation included a literature review, a surface survey, and subsurface testing. The subsurface testing was conducted in the form of six backhoe trenches dug to

a depth of approximately 1.2 meters (3.9 ft.). The investigation determined the previously identified site could not be located due to the changes in the topography as a result of vehicular traffic, construction activities and erosion. Most of the surface soil had been previously disturbed and no features were identified within the trenches that revealed mostly intact subsurface soils. Additionally, although Monterey chert stones were observed during the pedestrian survey, they were determined to have been broken by mechanical, large vehicular actions and were otherwise unmodified material. CA-SLO-1271 was not determined significant under CEQA, and no further testing or avoidance was recommended. Due to the discovery of intact soils in one testing location and potential evidence of anthropic soils within the area of two of the trenches (these trenches were located less than 200 ft. from the southern boundary of the current proposed Project site), archaeological monitoring was recommended.

Report No. SL-06451

A Cultural and Paleontological Resources Study for the San Miguel Ranch Project (Jones 2008), documents the results of a cultural and paleontological resources study overlapping the entire northern parcel and the southern parcel's western boundary of the Wastewater Treatment Facility section of the proposed Project site. The purpose of the study was to identify any cultural or paleontological resources that could be impacted by a proposed residential and commercial development, and the associated pipelines connected to the San Miguel Community Services District Wastewater Treatment Plant. The archaeological aspect of the study included a records search and literature review, a Native American Heritage Commission Sacred Lands File search, consultation with the San Luis Obispo County Historical Society, Mission San Miguel Archangel, and local Native American tribes, and an intensive field survey. The records search and literature review did not identify any prehistoric cultural resources within the proposed project area. Jones' review of topographic maps from 1919, 1947, 1948, and 1979 showed a building within or adjacent to the Wastewater Treatment Plant expansion area. The Sacred Lands File search results were negative. During the field survey, an isolated chert flake was identified within the western part of the proposed Wastewater Treatment Plant expansion area, as well as debris consisting of glass fragments, metal, and bricks. The cultural materials identified during the field survey appeared to be ineligible for listing under the California Register of Historic Resources and were not determined significant under CEQA. However, the presence of the debris and isolated chert flake indicated a possibility for subsurface cultural materials to exist within the proposed Wastewater Treatment expansion area, Jones recommended archaeological testing where the debris deposit was located and recommended archaeological monitoring during ground disturbing activities.

Table 3. Previously Recorded Cultural Resource Studies Within 1-Mile of the Project Area

Year	Author	CCIC ID	Report Title	Addresses Project Site
1982	Hampson, R.; Breschini, G.; and Haversat, T.	SL-00370	Preliminary Cultural Resources Reconnaissance of a Proposed Natural Gas Pipeline and Electric Transmission Lines, Monterey, San Luis Obispo, and Kings Counties, California	No
1985	Hoover, R.	SL-00724	Letter Report: Proposed Phoenix Apartments Site in San Miguel	No
1988	Peak and Associates	SR-01082	Class I Inventory for a Proposed Fiber Optic Communication Route, San Francisco to Los Angeles.	Yes
1990	Dills, C.	SL-01621	Archaeological Potential of Riverbed Mining Project at San Miguel	No
1988	Peak and Associates	SR-01446	Class I Inventory for the Proposed American Telephone and Telegraph Salinas to Los Angeles Fiberoptics Communication Route	Yes
1989	Gibson, R.	SL-01622	Results of a Phase One Archaeological Surface Survey of Tract 1840, San Miguel, CA	Yes
1988	Gibson, Robert O.	SL-02192	Results of an Archaeological Surface Survey for Tract 1552, San Miguel, San Luis Obispo County, CA	No
1991	Breschini, Gary S. and Haversat, Trudy	SL-02286	Additional Cultural Resources Reconnaissance for the Amoco Seismic Program In and Around Camp Roberts, San Luis Obispo and Monterey Counties, California	No
1993	Dills, Charles E.	SL-02478	San Miguel Sewer District Project Parcel Number 21-051-13 Project Number 960	Yes
1993	Gibson, Robert O.	SL-02539	Results of Archaeological Surface Survey for the SLO County Waterworks District No. 1 Project in San Miguel	Yes
1994	Gibson, Robert O.	SL-02722	Results of Archaeological Monitoring for the San Miguel Water Improvements Project Near San Miguel Mission San Luis Obispo County, Ca	No
1996	Pruett, Catherine Lewis	SL-03030	An Archaeological Assessment of A Proposed 12 Mile, Four Inch Gas Pipeline From Niblick Road To Camp Roberts, Along North River Road, Highway 101, And Southern Pacific Railroad	Yes
1996	-	SL-03030A	Appendix I: Records Search; Appendix II: Qualifications of Project Personnel (removed)	No
1998	Gibson, Robert	SL-03444	Results of Phase One Archaeological Surface Survey for the San Miguel Fire Station Project at 1150 Mission Street	No
1998	Hoover, Robert	SL-03855	Archaeological Survey of the River Road Bridge Over the Salinas River at San Miguel, San Luis Obispo County, CA	Yes

Table 3. Previously Recorded Cultural Resource Studies Within 1-Mile of the Project Area

Year	Author	CCIC ID	Report Title	Addresses Project Site
1999	Ryan, Christopher	SL-03895	Cultural Resources Evaluation at the River Road Bridge, Salinas River Bridge Seismic Retrofit Project, San Miguel, CA	Yes
2000	Wendy J. Nelson; Maureen Carpenter; and Julia Costello	SL-04057	Cultural Resources Survey For The Level (3) Communications Long Haul Fiber Optics Project Segment WS05: San Jose to San Luis Obispo	Yes
2000	-	SL-04057A	Appendix A: Project Maps and Site Locations	No
2001	Singer, Clay A.	SL-04385	Cultural Resources Survey and Impact Assessment for a 9.9-acre Property in the Community of San Miguel, San Luis Obispo County, California [Tentative tract 2421]	No
2002	John Parker	SL-04652	Cultural Resource Investigation of the Proposed AT&T/Bechtel Wireless Site #12008	No
2002	Hutchinson, Mark	SL-04776	Historic Property Survey Report for the River Road Bridge Replacement Project on the Salinas River at San Miguel, San Luis Obispo County, CA	Yes
2002	Clift, Gregory and Farrell, Nancy	SL-04794	Phase 1 Archaeological Survey Of A Commercial Lot On The Northwest Corner Of 10th and K Streets, San Miguel, San Luis Obispo County, California	No
2002	Singer, Clay A.	SL-04830	Cultural Resources Survey and Impact Assessment for Mission Garden Estates, a 53-acre Residential Property in San Miguel, San Luis Obispo County, California	No
2003	Parker, John	SL-04914	Cultural Resources Investigation of the Fetyko Parcel APN 027-022-041, East End of Oak Drive, San Miguel, CA	No
2002	Hutchinson, M.	SL-04983	Historic Property Survey Report for the River Road Bridge Replacement Project on the Salinas River at San Miguel, San Luis Obispo County, California	Yes
2002	Ethan Bertrando	SL-05032	Cultural Resource Inventory of COAL 90-508; 22 Acre Parcel Northwest Corner of Mission Street and 19th Street San Miguel, CA	No
2003	Jennifer Yogakumar	SL-05049	Section 106 Review of the Proposed Bechtel Corporation, on behalf of AT&T Wireless Services, Site Number 950012008, "Wolf Water Tank", 13550 River Road, San Miguel, San Luis Obispo County, California.	No
2002	Jennifer Yogakumar	SL-05049A	Attachment A: Maps Showing the Proposed Site Location and the Area of Potential Effect for the Site Attachment B: Site Plans Attachment C: Site Photographs Attachment D: Photo simulations	No

Table 3. Previously Recorded Cultural Resource Studies Within 1-Mile of the Project Area

Year	Author	CCIC ID	Report Title	Addresses Project Site
2002	John Parker	SL-05049B	Attachment E: Cultural Resource Investigation of the Proposed AT&T/Bechtel Wireless Site #12008. (removed by CCIC Staff, see SL-04652) and Records Search Results Letter	No
2002	Jennifer Yogakumar	SL-05049C	Attachment F: Response from the Native American Heritage Commission	No
2002	Jennifer Darcangelo	SL-05049D	Email Correspondence Between Jennifer Darcangelo (OHP) and Holly Moore (ATC) Re: Wolf Water Tank Site in SLO County; Additional Historical Information	No
2002	Knox Mellon	SL-05049E	SHPO Response Letter Re: Proposed AT&T Wireless Services Site "Wolf Water Tank", 13550 River Road, San Miguel, San Luis Obispo County, California	No
2002	Stephen Bryne	SL-05060	Historic Property Survey Report for the River Road Bridge Replacement Project on the Salinas River at San Miguel, San Luis Obispo County, California 05-SLO-0-CR Federal Project No. BRLSZD-5949(060) Bridge No. 49C0045	Yes
2002	Stephen Bryne	SL-05060A	Attachment A: List of Preparers Attachment B: Project, Location, and APE Maps	No
2002	Kevin Lex Palmer	SL-05060B	Attachment C: Historical Resources Evaluation Report	No
2002	Stephen Bryne	SL-05060C	Attachment D: Archaeological Survey Report	No
1999	Christopher Ryan	SL-05060D	Attachment E: Cultural Resources Evaluation at the River Road Bridge, Salinas River Bridge Seismic Retrofit Project, San Miguel, California	No
2002	Stephen Bryne	SL-05060E	Attachment G: Correspondence	No
2003	Nathan Stevens	SL-05080	Phase I Archaeological Survey of a Lot on the Northwest Corner of 15th and Mission Streets, San Miguel, San Luis Obispo County, California (APN: 021-131-011)	No
2004	Susan Stewart	SL-05211	Phase II Archaeological Investigations at CA-SLO-1271: Subsurface Testing at the Proposed Mission Meadows Housing Development in San Miguel, San Luis Obispo County, California	No
2004	Clay A. Singer	SL-05212	Cultural Resource Survey and Impact Assessment for a Commercial Property at 1300 "N" Street in San Miguel, San Luis Obispo County, California [APN 021-231-025/026/027]	No
2004	Clay A. Singer	SL-05213	Cultural Resources Survey and Impact Assessment for a 7.8 Acre Property Near the Town of San Miguel, San Luis Obispo County, California [APN 027-271-008]	No
2004	John Parker	SL-05220	Cultural Resource Investigation of the Midland Pacific Parcel Cemetery Road, San Miguel, CA	No

Table 3. Previously Recorded Cultural Resource Studies Within 1-Mile of the Project Area

Year	Author	CCIC ID	Report Title	Addresses Project Site
2003	Roberta S. Greenwood, John M. Foster, Dana N. Slawson, and Judith Porcasi	SL-05244	Reconnaissance of Historic Properties in San Miguel California	No
2005	Brian Glenn, Sherri Gust, and Kim Scott	SL-05307	Archaeological and Paleontological Assessment Report for the San Lawrence Terrace Project, San Miguel, San Luis Obispo County, California	No
2004	Nancy Farrell	SL-05320	Phase I Archaeological Survey of a Parcel at 10th and L Streets, San Miguel, San Luis Obispo County, California	No
2004	Nancy Farrell	SL-05321	Phase I Archaeological Survey of 988 River Road, San Miguel, San Luis Obispo County, California (APN 021-241-015)	No
2005	Hoover, Robert L.	SL-05530	Archaeological Evaluation For a Multi-Purpose Hall and Classrooms, San Miguel, California	No
2004	Robert S. Greenwood and John M. Foster	SL-05334	Environmental Impact Report: Mission Garden Estates Project, Archaeological Element	No
2004	Clay A. Singer	SL-05379	Cultural Resources Survey and Impact Assessment for a 15 Acre Property Located on River Road East of the Town of San Miguel, San Luis Obispo County, California [APN 027-271-030].	No
2004	Clay A. Singer	SL-05388	Cultural Resources Survey and Impact Assessment for an 0.3 Acre Property Located on L Street in the Town of San Miguel, San Luis Obispo County, California [APN 021-322-008].	No
2005	Thor Conway	SL-05446	An Archaeological Surface Survey of 720 16th Street, San Miguel, San Luis Obispo County, California	No
2005	Hoover, Robert L.	SL-05530	Archaeological Evaluation For a Multi-Purpose Hall and Classrooms, San Miguel, California	No
2005	Singer, Clay A. and Melissa Chatfield	SL-05538	Cultural Resources Survey and Impact Assessment For a Property at 1520 L Street in the Town of San Miguel, San Luis Obispo County, California (APN 021-131-019).	No
2005	Singer, Clay A.	SL-05540	Cultural Resources Survey and Impact Assessment For a Residential Property at 965 L Street in the Town of San Miguel, San Luis Obispo County, California	No
2005	Conway, Thor	SL-05588	An Archaeological Surface Survey at 12th Street, San Miguel, San Luis Obispo County, California	No

Table 3. Previously Recorded Cultural Resource Studies Within 1-Mile of the Project Area

Year	Author	CCIC ID	Report Title	Addresses Project Site
2005	Laurie, Leroy	SL-05596	Phase I Archaeological Survey of 5 Acres at the Southwest Corner of 11th and N Streets in San Miguel, San Luis Obispo County, California (Tentative Tract Number 2610).	No
2005	Hoover, R.L.	SL-05698	Archaeological Evaluation for a Multi-Purpose Hall and Classrooms, San Miguel, California – Filed Under E-5530	No
1997	U.S. Army Corps of Engineers and Jones and Stokes Associates, Inc.	SL-05701	Draft: Camp Roberts Built Environment Evaluation	No
2006	Hoover, R.L.	SL-05710	Archaeological Report on Two Observation Trenches, North Wing Espadana, Mission San Miguel Archangel	No
2006	Singer, C.	SL-05740	Cultural Resources Survey and Impact Assessment for the Indian Valley Sand and Gravel Project at the Salinas River Near San Miguel in San Luis Obispo County, California [APN 027-420-001/002/003/005/009/010/016]; with information on archaeological sites CA-SLO-2446 and CA-SLO-2458	No
2006	Singer, C.	SL-05759	Phase III Archaeological Monitoring at Tract 2605, Mission Meadows III, in the Town of San Miguel, San Luis Obispo County: with Information about Site CA-SLO-1271	No
2006	Singer, C.	SL-05761	Cultural Resources Survey and Impact Assessment for a Property at 1222 N Street in San Miguel, San Luis Obispo County, California [APN 021-231-017/024/041	No
2004	Hoover, R.L.	SL-05795	Archaeological Report on Initial Stabilization Project, Mission San Miguel Arcangel, California	No
2006	Farrell, Nancy	SL-05837	Historical Evaluation of the Kingery House Parcel at 10th and L Streets, San Miguel, California [APN: 021-301-008]	No
2005	Robert O. Gibson	SL-05926	Results of Phase One Archaeological Surface Survey for the Cisneros Parcel (APN# 021-271-002) 1155 K Street, san Miguel, san Luis Obispo, CA	No
2005	Robert O. Gibson	SL-05927	Results of Archival Records Search and Phase One Archaeological Surface Survey for the San Miguel Ranch Development West of Highway 101, San Miguel, San Luis Obispo County, CA	No
2007	Farrell, Nancy	SL-06057	Archaeological Survey at 1215 Mission Street, San Miguel, San Luis Obispo County, California [APN 021-261-020]	No

Table 3. Previously Recorded Cultural Resource Studies Within 1-Mile of the Project Area

Year	Author	CCIC ID	Report Title	Addresses Project Site
2007	Parker, John	SL-06080	Cultural Resources Investigation of the Bohner Parcel Corner of 10th and "L" streets, San Miguel, CA	No
2007	Singer, Clay	SL-06118	Phase II Archaeological Testing at a Property on L Street in the Town of San Miguel, San Luis Obispo County, California [APN021-322-008]: Information for the Todd minor Use Permit DRC 2006-00168	No
2008	Hoover, Robert L., David N. Hoover, and James T. Larson	SL-06169	Archaeological Component of the Soil Testing and Basal Erosion Activities, Nave and Sacristy, Mission San Miguel, California (CA-SLO-67)	No
2008	Lee, Sean A.	SL-06230	Archaeological Resources Survey and Impact Assessment for 1111 Mission Street in Town of San Miguel, San Luis Obispo County, California.	No
2007	Hannahs, Todd.	SL-06284	Phase I Archaeological Survey and Historic Structure Assessment of an Abandoned Swimming Pool San Miguel, California [APN 021-195-007]	No
2008	Bartrando, Ethan	SL-06352	Cultural Resource Inventory of the Garcia Properties, APN: 027-121-005 & 027-171-011 8790 North Barnes Road San Miguel, CA.	No
2009	Hoover, Robert L., Hoover, David N., Larson, James T., Dishman, Doreen, and Ayala, Yvonne	SL-06397	Archaeological Monitoring Report, Parish Hall Complex. Mission San Miguel, California	No
2008	Jones, E.T.	SL-06451	A Cultural and Paleontological Resources Study for the San Miguel Ranch Project	Yes
2010	Hoover, Robert	SL-06505	Archaeological Investigations, Church Drainage Project, Mission San Miguel, California	No
2011	Hoover, Robert; Hoover, David; and Larson, James	SL-06649	Archaeological Investigations, West Wing (Phase IVB), Mission San Miguel, California	No
2014	Allison Lober and Todd Hannahs	SL-06850	Phase I Archaeological Survey of the San Miguel Community Park at 12th and K Streets, San Miguel, San Luis Obispo County, California [APN: 021-251-003, 021-252-002, 004, and 011]	No
2018	Thor Conway	SL-07314	An Archaeological Surface Survey at 13340 River Road, San Miguel, San Luis Obispo County, California	No
N/A	Robert L. Hoover and Dave Hoover	SL-07518	Phase 1 Cultural Resources Study 968 L Street, San Miguel, California	No

3.5 Native American Heritage Commission Sacred Land Files Request

A search of the Native American Heritage Commission's (NAHC's) Sacred Land File (SLF) was requested on June 5, 2020 and conducted by Cultural Services Analyst, Sarah Fonseca, on June 8, 2021 to determine the presence of any reported Native American cultural resources within the Project site as listed in the NAHC maintained SLF (see Confidential Appendix B). The NAHC SLF records search result was negative. The NAHC identified four (4) Native American individuals who would potentially have specific knowledge as to whether or not Native American cultural resources are identified within the Project site that could be at-risk. To date, Dudek has not initiated contact with the individuals on the NAHC's contact list, in regard to the proposed Project. Note: Sacred Land Files maintained by the NAHC represent a curation of "ancient places of special religious or social significance to Native Americans and known ancient graves and cemeteries of Native Americans on private and public lands in California" (nahc.gov 2021) provided by Tribal entities and Native American representatives. For various reasons, Tribal entities and Native American representatives do no not always report sacred lands or TCRs to the NAHC; as such, the NAHC's SLF is not necessarily a comprehensive list of known TCRs and searches of the SLF must be considered in concert with other research and not used as a sole source of information regarding the presence of TCRs. Additionally, results of the SLF provided relate to the general regional area within and surrounding the proposed project site and don't necessarily equate to the existence of resources within the specific area occupied by the proposed project site.

3.6 Historic Aerials

Aerial images were compared to better understand prior landform alteration and land use. Historic aerials are available for the years 1937, 1939, 1949, 1963, 1969, 1978, 1987, 1994, and 2002 (UCSB 2020).

WWTP portion (APN 021-051-013, APN 021-051-015, APN 021-051 -016 and APN 021-051-017

- The 1937 historic aerial shows two structures along the southern edge of the proposed Project site. The areas around the structures were undeveloped. Agriculture, potentially an orchard, is shown within the northern parcel as well as two trees at the center of WWTP portion of the proposed Project site.



Image 1. 1937 Historic Aerial of Proposed Project Site (UCSB 2020)

- The 1939 historic aerial shows no significant changes to the proposed Project site since the 1937 historic aerial was taken.
- The 1949 historic aerial shows the proposed Project site as over seventy-five percent graded. An ungraded section is depicted in the center of the proposed Project site and along the southern boundary. An ungraded path is shown aligned north to south from the ungraded center of the proposed Project site. Along the southern edge of the proposed Project site, one of the two structures, visible within the 1937 historic aerial, appears to exist. The structure is shown surrounded by vegetation which extends to the western edge of the proposed Project boundary. Southeast of the vegetation area circular objects or structures, possibly tanks, are evident and a road aligned east to west connects the structures to what is currently N street.



Image 2. 1949 Historic Aerial of Proposed Project Site (UCSB 2020)

- The 1963 historic aerial shows no significant change to the proposed Project area since the 1949 historic aerial was taken.
- The 1969 historic aerial shows the previously graded area as covered in vegetation except for a road aligned northwest to southeast through the western half of the proposed Project area.

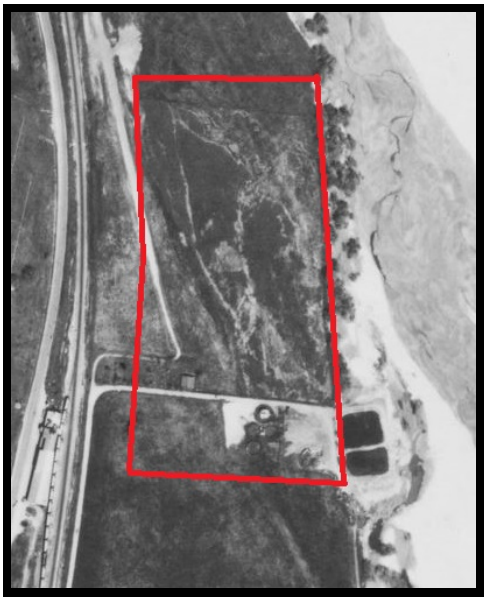


Image 3. 1969 Historic Aerial of Project Site (UCSB 2020)

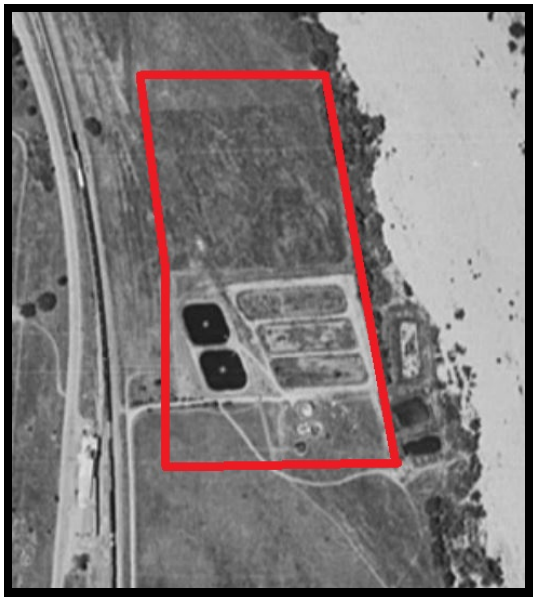


Image 4. 1978 Historic Aerial of Project Site

- The 1978 historic aerial shows the previous structure from the 1949 historic aerial as no longer present. The southern portion of the proposed Project site has been developed since 1969 and is consistent with its current state including five water basins, two square and three rectangle, bounded by access drives/ways. The road aligned northwest to southeast through the western half of the proposed Project is no longer present. The circular tanks present within the southeast corner of the proposed Project area in 1969 still exist with an increased amount of surrounding vegetation.
- The 1987 and 1994 historic aerials show no significant change to the proposed Project site since the 1978 historic aerial was taken.
- The 2002 historic aerial shows little change since the 1978 aerial with the exception of the addition of two square water basins located in the southwest corner of the proposed Project site. Additionally, the circular tanks present within the southeast corner of the proposed Project area in 1978 are no longer present and some grading in that same vicinity appears to have occurred, likely as a result of the construction of the additional water basins.



Image 5. 2002 Historic Aerial of Project Site



Image 6. 2020 Historic Aerial of Project Site (Google Earth 2020)

Recycled Water Conveyance System Pipeline

- The 1937 historic aerial illustrates the current City of San Miguel's grid as generally existing. Mission Street, 16th Street, 12th Street, 10th Street, 9th Street, N Street, and River Road, west of the Salinas River, are laid out as they are currently. However, the only road with a turnout past K Street is 10th Street, while 16th Street and 12th Street end at K Street. The bridge crossing the Salinas River is also present. However, Mission Street, and possibly River Road, appear to be the only streets paved. East of the Salinas River, River Road curved up onto where Cross Canyon Road is currently, and looped back down, then curved to the east before curving south, following its present layout.
- The 1939 historic aerial show no significant changes to the pipeline route sine the 1937 historic aerial was taken.
- The 1949 historic aerial does not extend west to K Street. There are no significant changes to the proposed pipeline route that is visible.
- The 1963 historic aerial shows a turnout west of K Street for 16th Street, while 12th Street remains ending at K Street. Mission Street splits just before 9th Street, going west to 9th Street and south along Mission Street. East of the Salinas River, just past the bridge, River Road remains curving north connecting to Cross Canyon Road; however, the loop south now extends farther to the east, bypassing one of the previous curves visible in the 1937 historic aerial.
- The 1969 Historic aerial shows a turnout west of K street for 12th Street. A section of the Bridge crossing the Salinas River appears to be washed out or covered in either water or soil. The historic aerial does not extend east, past where River Road curves north to connect with Cross Canyon Road.
- The 1978 historic aerial shows the proposed pipeline route as it is currently.

Review of historic aerials show the surface of the proposed Project site, where the Wastewater Treatment Facility is located, has been repeatedly disturbed by agriculture, grading and construction since at least 1937. The parcel north of the WWTP has only been subject to grading and agricultural disturbance and the earliest known development of the southern parcels first occurred in the early 20th century with residential structures located in the southwest portion and was subject to varied development until commencement of the wastewater treatment facility in the early 1970s. Review of the historic aerials also show the potential recycled water conveyance system pipeline route west of the Salinas River and the bridge crossing the Salinas River was developed since at least 1937. The section of River Road east of the Salinas River was developed as early as 1978.

4.0 FIELD INVESTIGATIONS

Dudek Staff Archaeologists conducted an intensive archaeological survey of the proposed Project area containing the Wastewater Treatment Facility (Survey A) on June 24, 2020 and the route of the recycled water conveyance system pipeline (Survey B) on December 16, 2020. All exposed ground surfaces within Survey A were walked in no less than 3-meter (10-foot) parallel transects. Due to the presence of pavement throughout the proposed pipeline route, the employment of parallel survey transects of the typical 3-meter (10-foot) intervals was not possible. In order to allow for observations of exposed ground along the linear path of the proposed pipeline, transects were positioned immediately adjacent to the potential pipeline alignment. Careful attention was given to barren ground, paths, fence lines, and areas where subsurface soils were visible due to burrowing animals. Summaries of Survey A and Survey B are provided below.

Survey A

The Project area has been divided into two parcels; a northern parcel (APN 021-051-017) that is void of development and two southern parcels (APN 021-051-013 and APN 021-051-015) that is currently occupied by four aerated lagoons, three percolation ponds and one drying bed.

The ground surface visibility within the northern parcel was very good to excellent (80-100 percent). Debris (metal fragments, broken glass, ceramics, cans, horseshoe, etc.) was observed sporadically within this parcel and intermixed within and a top a heavily disturbed soil matrix. Items observed that are potentially historic in nature included a pull-tab can, a piece of ceramic, and a horseshoe. However, no makers' markings or evidence for typology were visible on the items and as result they could not be dated; additionally, these same items were intermixed with modern debris. As a result, the debris scatter was not identified or recorded as an archaeological site or loci of a nearby previously recorded archaeological site. No prehistoric artifacts were observed within the northern parcel.

The ground surface visibility within the southern parcel was poor to good (30-60 percent) due to the existing development. Pathways between the aerated lagoons have been compacted and overlaid with gravel and bark. To compensate for the poor visibility special attention was given to fence lines and an area where soil appeared to have been gathered into an approximate six-foot high pile along the northern edge of the parcel. Attempts were made to locate the previously identified prehistoric archaeological site (CA-SLO-1271). However, the recorded boundary of the northern portion of the site is consistent with the current location of an access road and an aerated lagoon obscuring

ground surface visibility. Note: the level of disturbance and lack of cultural material is consistent with findings of previous surface and subsurface archaeological investigations (Gibson 1993; Stewart 2004). No prehistoric cultural resources were observed within or near the reported boundary of CA-SLO-1271 or within the entirety of both southern parcels. Potential historic debris was observed along the proposed project boundary at the intersection of APN 021-051-017 and APN 021-051-015. Ninety (90) percent of the debris concentration was located outside of the proposed Project site but does slightly overlap the northwest corner of the southern parcel APN 021-051-015. The observed debris is consistent with the results of a previously conducted pedestrian survey (Dills 1993) and with the location of an early 20th century structure depicted on historic aerials. The debris concentration appeared to be highly disturbed and intermixed with modern materials and is partially interrupted and truncated by the facility's entrance road. Important to note, no cultural resources of an archaeological or structural nature were formally recorded as a result of Dills 1993 study. All observed soils within Survey A area appear to be consistent with the USDA's characterization for the proposed Project site of fine sandy loam (USDA 1983).

Survey B

The path surveyed included Mission Street between Monterey Road and 20th Street, N Street between 14th Street and 20th Street, 12Th Street ,14th Street, 16Th Street, Indian Valley Road, and North River Road between N Street and Estrella Road. The potential pipeline would primarily extend through approximately 75 percent the downtown area of San Miguel through residential, commercial, and developed areas and approximately 25 percent through the more rural surrounding community to the east of the downtown area that consists of residential homes, open fields, and vineyards.

Ground surface visibility within the proposed pipeline footprint within the town of San Miguel was completely obscured by pavement along the entire extent of the proposed pipeline providing no ground surface visibility (0 percent). Landscaped areas present between the street and adjacent sidewalk were sporadically planted with ornamental vegetation and trees, resulting in very good to excellent (70 to 100 percent) ground surface visibility. Ground surface visibility within the potential pipeline footprint in areas outside the downtown area varied from very good to excellent (70 to 100 percent) ground surface visibility. No cultural resources were observed within the potential pipeline route under less than reliable conditions. All observed soils appear to be consistent with the USDA's characterization for the proposed Project site of fine sandy loam (USDA 1983).

5.0 CONCLUSIONS

Based on the generally good ground surface visibility and the employment of strategic field survey methods in areas with limited visibility, the intensive archaeological survey results are considered to be reliable. Considering no cultural resources have been identified within the proposed Project site APNs 021-051-013 and 021-051-017 and the potential recycled water conveyance system pipeline route as a result of background research; literature, maps and historic aerial reviews; CHRIS and NAHC Sacred Land Files records searches; and a pedestrian survey, the potential for known buried cultural resources to exist within these Project site areas is considered unlikely. Results of the CHRIS search indicate that sixty-eight (68) previously conducted cultural resource studies have been conducted within 1-mile of the proposed and potential Project site areas, fourteen (14) of which overlap and address approximately fifty (50) percent of the Project areas. Information collected from a review of the previously conducted studies as well as the findings of this current study establish that the proposed and potential Project site areas have been subject to extensive disturbance since at least 1937 and are unlikely to possess intact cultural deposits.

There are two areas within the proposed and potential Project site areas that suggest general archaeological sensitivity. One previously recorded cultural resource (CA-SLO-1271) has been identified within the southern portion of the proposed Project site parcel, APN 021-051-015, and was previously subjected to subsurface testing. As a result, CA-SLO-1271 was not only found not significant pursuant to CEQA criteria and ineligible for listing on NRHP and CRHP, but no surface or subsurface cultural reposits were identified suggesting that the site had been largely destroyed by earlier construction (Stewart 2004). Additionally, a portion of the potential recycled water conveyance system pipeline, along Mission Street between 9th and 10th streets as well as the Father Reginald Park/9th Street Turn Out, are immediately adjacent to cultural resources associated with the San Miguel Mission (CA-SLO-65 and CA-SLO-67). As such, the potential for unknown prehistoric and historic cultural resources to exist within this portion of the potential Project site is considered possible. Therefore, due to the archaeological sensitivity of the general proposed and potential Project site areas, specifically along the southern boundary of APN 021-051-015, the Mission Street Purple Pipeline between 9th and 10th streets and the Father Reginald Park/9th Street Turn Out, it is possible that unknown cultural material and features could be encountered during proposed Project construction.

6.0 RECOMMENDATIONS

Dudek recommends the following measures, implemented by a qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards, to ensure proper treatment of any unknown cultural resources that may be encountered as a result of proposed Project construction:

Cultural Resource Monitoring and Inadvertent Discovery Plan. Impacts to cultural resources should be minimized through implementation of pre- and post- construction tasks. Tasks pertaining to cultural resources include the development of a cultural resource monitoring and inadvertent discovery plan (Plan). The purpose of the Plan is to outline a program of treatment and mitigation in the case of an inadvertent discovery of cultural resources during ground-disturbing phases (including but not limited to preconstruction site mobilization, grubbing, construction ground disturbance, construction grading, trenching, and landscaping) and to provide for the proper identification, evaluation, treatment, and protection of any cultural resources during the construction of the Project. This Plan should define the process to be followed for the identification and management of cultural resources in the Project area during construction. Existence of and importance of adherence to this Plan should be stated on all construction plans.

Workers Environmental Awareness Program (WEAP) Training. All construction personnel and monitors who are not trained archaeologists should be briefed regarding unanticipated discoveries prior to the start of construction activities. A basic presentation shall be prepared and presented by a qualified archaeologist to inform all personnel working on the Project about the archaeological sensitivity of the area. The purpose of the WEAP training is to provide specific details on the kinds of archaeological materials that may be identified during construction of the Project and explain the importance of and legal basis for the protection of significant archaeological resources. All personnel should learn the proper procedures to follow in the event that cultural resources or human remains are uncovered during ground-disturbing activities. These procedures include work curtailment or redirection, and the immediate contact of the on-call archaeologist and if appropriate, Tribal representative. Necessity of training attendance should be stated on all construction plans.

On-Call Archaeological Construction Monitoring. In consideration of the general sensitivity of the proposed Project site for cultural resources, a qualified archaeologist should be retained to conduct spot monitoring as well as on call response in the case of an inadvertent discovery of archaeological resources. A qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, should oversee and adjust monitoring efforts as needed (increase,

decrease, or discontinue spot monitoring frequency) based on the observed potential for construction activities to encounter cultural deposits. The archaeologist should be responsible for maintaining monitoring logs. Following the completion of construction, the qualified archaeologist should provide an archaeological monitoring report to the District and the CCIC with the results of the cultural monitoring program.

Inadvertent Discovery of Archaeological Resources. In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities for the Project, all construction work occurring within 100 feet of the find should immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, can evaluate the significance of the find and determine whether or not additional study is warranted. Depending upon the significance of the find under the California Environmental Quality Act (14 CCR 15064.5(f); California PRC Section 21082), the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work, such as preparation of an archaeological treatment plan, testing, or data recovery, may be warranted. If the discovery is Native American in nature, consultation with and/or monitoring by a Tribal representative may be necessary.

If a discovery consists of possible human remains, the San Luis Obispo County Coroner shall be contacted immediately as well as the District Project representative. If the Coroner determines that the remains are Native American, the Coroner shall contact the California Native American Heritage Commission. (NAHC) who will provide the name and contact information for the Most Likely Descendent (MLD). Treatment of the discovery shall be decided in consultation with the MLD provided by the NAHC. Additionally, a Tribal representative shall be retained to monitor all further subsurface disturbance in the area of the find. Work in the area may only proceed after the District Project representative grants authorization based on guidelines provided in the CMTP.

These measures would ensure the proper treatment of any cultural resources and human remains encountered during ground disturbing activities. With the proper implementation of the prescribed measures, the potential impact to cultural resources is considered to be less then significant.

7.0 REFERENCES

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APPENDIX A

CCIC Records Search

CONFIDENTIAL

APPENDIX B

NAHC Sacred Land Files Search Request

CONFIDENTIAL

621 CHAPALA STREET
SANTA BARBARA, CALIFORNIA 93101
T 805.963.0651 F 805.963.2074

September 11, 2020 12704

Kelly Dodds, Director of Utilities
San Miguel Community Services District
1150 Mission Street
San Miguel, California 93451

Subject: *San Miguel Wastewater Treatment Plant Upgrade/Expansion Project, Results of the 2020 Botanical Survey and Vegetation Mapping, Santa Miguel, San Luis Obispo County, California*

Dear Mr. Dodds:

This letter report documents the methods and results of a special-status plant survey and vegetation community mapping conducted in support of the San Miguel Wastewater Treatment Plant Expansion Project (Project), in the community of San Miguel, San Luis Obispo County, California. It was prepared as part of the documentation of sensitive biological resources occurring within the Project site, and in support of impact analysis to be provided for an initial study/mitigated negative declaration (IS/MND) for the Project.

1 Background

The San Miguel Community Services District (SMCSD) proposes an upgrade and expansion of the existing San Miguel Wastewater Treatment Plant (WWTP) located at the intersection of Bonita Place and Benedict Street, in San Miguel, California. The existing WWTP is located close to the northern limits of the community of San Miguel, within Assessor's Parcel Numbers (APNs) 021-051-015 and 021-051-013, and the expansion is proposed for a portion of APN 021-051-017 adjacent to the existing WWTP on the north (Attachment A: Figure 1). A final design for the Project was not available at the time of preparation of this report, but the expansion is anticipated to occur within a field subject to regular tilling, in the western portion of APN 021-051-017. Dudek established a survey area for biological resources in this area, which is immediately adjacent to the Salinas River floodplain and associated riparian vegetation. Because the existing WWTP supports only developed and disturbed/maintained land covers, the survey area did not encompass the existing WTTP. Several biological resources potentially occur within and adjacent to the area immediately north of the existing WWTP, including special-status plants. Dudek conducted one survey pass for special-status plants within the survey area, based on the blooming period of plants that potentially occur there. Dudek also mapped vegetation communities and land covers within the survey area, including any sensitive vegetation communities. This letter report describes the literature review conducted to determine potentially occurring special-status plants, field methods of the survey, and results.

2 Project Location

The survey area is located in the unincorporated community of San Miguel in northern San Luis Obispo County, between the Salinas River and U.S. Highway 101. It is adjacent to the existing WWTP, which borders the survey area on the south. The Salinas River floodplain and associated riparian vegetation are to the east, undeveloped land is to the north, and the Union Pacific Railroad (UPRR) is to the west. Residential development occurs both south of the WWTP and farther west from the UPRR. Development associated with the community of San Miguel extends for approximately 1.0 mile south of the WWTP and approximately 0.25 mile west of the UPRR, to U.S. 101. The Salinas River and associated riparian vegetation partly encircle the central, urban portion of the community of San Miguel to the north, east, and south of the community. Residential development is more scattered west of U.S. 101, and an extensive area of vineyards extends for more than 1.0 mile east of the San Miguel Community Plan Area. This nearly continuous block of vineyards, with scattered residences, also extends southward along the east side of the River, for more than 2.0 miles south of San Miguel. The lower slopes of the Cholame Hills extend into Monterey County to the north and northeast.

3 Methods

3.1 Special-Status Plant Species Defined

For the purpose of this Project, special-status plant species are those plants:

- Listed, proposed for listing, or candidates for listing as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) under the federal Endangered Species Act (ESA);
- Listed or proposed for listing as threatened or endangered by the California Department of Fish and Wildlife (CDFW) under the California Endangered Species Act (CESA);
- Occurring on CDFW's *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2020a);
- Or considered California Rare Plant Rank (CRPR) 1 or 2 in the Inventory of Rare and Endangered Plants of California (CNPS 2020a).

3.2 Literature Review

Prior to the special-status plant species surveys, Dudek queried both the California Natural Diversity Database (CDFW 2020b) and the California Native Plant Society's Inventory of Rare and Endangered Plants (CNPS 2020a) to determine potentially occurring special-status plants. The queries included all species occurring in the following U.S. Geological Survey (USGS) quadrangles: Adelaida, Bradley, Estrella, Paso Robles, Ranchito Canyon, San Miguel,

Stockdale Mountain, Valleton, and Wunpost. Dudek also reviewed the San Miguel Community Plan (County 2016) for species considered to have the potential to occur.

3.3 Field Survey Methods

On June 11, 2020, Dudek biologist Dave Compton conducted a rare plant survey within the survey area. The rare plant survey included full-coverage pedestrian transects extending to 50 feet west, east, and north of the Project site, and south to the fence lines of the existing WWTP (Attachment A: Figure 2). Locations within the existing WWTP were considered development and were not surveyed. Mr. Compton walked meandering transects throughout the survey area to achieve full visual coverage and determine presence/absence of special-status plant species within the survey area.

All plant species encountered during the surveys were identified and recorded. Scientific and common names for plant species with a California Rare Plant Rank (formerly CNPS List) follow *the California Native Plant Society On-Line Inventory of Rare, Threatened, and Endangered Plants of California* (CNPS 2020a). For plant species without a California Rare Plant Rank, scientific names follow *the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California* (Jepson Flora Project 2020) and common names follow the California Natural Community List (CDFW 2019) or the United States Department of Agriculture (USDA) Natural Resources Conservation Service Plants Database (USDA 2020). If special-status plant species were observed, the extent of the population and number of individuals was recorded. Attachment B includes a list of all plant species identified during the survey. Attachment C provides photographic documentation of the survey area.

Vegetation mapping was conducted based on the California Natural Community List (NCL; CDFW 2019) and the web-based version of the *Manual of California Vegetation* (CNPS 2020b), which use the scientific name of the dominant species in that alliance as the alliance name. Both are based on the *Manual of California Vegetation, Second Edition* (MCV2; Sawyer et al. 2009). The NCL and MCV2 focus on a quantified, hierarchical approach to vegetation classification that includes both floristic (plant species) and physiognomic (community structure and form) factors as currently observed (as opposed to predicting climax or successional stages). CNPS launched the web-based version of MCV2 in 2015 that provides up-to-date rarity rankings and vegetation community descriptions (CNPS 2020a). Communities with a global rarity ranking of G1 to G3 or a state rarity ranking of S1 to S3 are considered sensitive.

Vegetation mapping was performed in the field during the rare plant survey, through interpretation of field maps with a high quality aerial photographic base and/or delineation using a mobile field app supporting detailed aerial imagery and displayed on an iPhone. The GPS data was downloaded into GIS ArcView for placement onto an aerial figure. In combination with the GPS data, a GIS technician digitized the delineated vegetation boundaries from field maps using ARCVIEW to create the vegetation community map.

3.4 Survey Limitations

Due to time limitations, only one survey pass was conducted. The San Miguel Community Plan (Plan; County 2016) identifies special-status plant species that potentially occur in the community of San Miguel. The Plan identifies one special-status plant species, round-leaved filaree (*California macrophylla*), that is known to bloom only from March to May, which is earlier in the year than the survey was conducted. In addition, the field that occupied most of the survey area was disked within two months prior to the date when the survey was conducted. Numerous plants had

grown and begun to flower since disking had occurred. But, although the remains of many of the plants present prior to disking were still present, many were not identifiable.

4 Results

4.1 General Site Characteristics

The survey area is within the community of San Miguel, at the northern edge of the more urbanized portion of the community, The area is regularly tilled, but has not recently been cultivated. Terrain is level except for a short embankment (less than 10 feet high) along the western edge. No drainage features and no depressions supporting pooling occur within the survey area. Soils are relatively deep and are loamy sand and sandy loam types. The following soils are located within the survey area (Attachment A: Figure 3):

- Hanford and Greenfield soils, 0 to 2 percent slopes
- Hanford and Greenfield soils, 2 to 9 percent slopes
- Metz loamy sand, 0 to 5 percent slopes
- Xerofluents – Riverwash Association

The majority of the survey area, and the area nearer the Salinas River, is occupied by Metz loamy sand, 0 to 5 percent slopes, a relatively deep soil type suited to agricultural purposes (Attachment A: Figure 3). Nearly all of the remaining portion of the survey area is occupied by Hanford and Greenfield soils, a fine sandy loam. Xerofluents, which are sandy flood plain areas, occupy a very limited area outside the Project site, in the northeastern part of the survey area (Attachment A: Figure 3).

4.2 Vegetation Communities and Land Covers

The survey area supports a minimal amount of natural vegetation associated with the Salinas River that overlaps the survey area, and limited areas of maintained California annual grasslands, but otherwise supports only anthropogenic land covers, notably agriculture (Figure 3, Table 1). In all, the survey area supports five vegetation communities and land covers, including *one sensitive riparian community occurring in a very limited area along the eastern boundary: Fremont cottonwood forest alliance*. The existing WWTP, which was not included in the survey area, was considered developed. Descriptions of land covers and vegetation communities occurring in the survey area are provided below.

Table 1. Summary of Vegetation Communities and Land Cover Types in the BSA

Physiognomic Category	General Habitat	Vegetation Communities	Rarity Ranking Global/State[1]	Acres within Survey Area
Herbaceous Alliances and Stands (Upland)	Grassland	California Annual Grassland	NA	1.77
		Herbaceous Alliances and Stands (Upland) Total		*1.77*
Forest and Woodland Alliances	Woodlands	Fremont Cottonwood Forest Alliance	G4/S3	0.72
		Forest and Woodland Alliances Total		*0.72*
Anthropogenic Land Covers	N/A	Agriculture	NA	8.48
		Disturbed	NA	0.92
		Ornamental	NA	0.10
		Anthropogenic Land Covers Total		*9.50*
		Grand Total		**11.99**

California Annual Grasslands

California annual grasslands is described in Holland (1986). It does not have a global or state rarity ranking. Annual grassland is characterized by weedy, introduced annuals, primarily grasses, including wild oat (*Avena* spp.), bromes (*Bromus diandrus, B. madritensis, B. hordeaceus*), black mustard (*Brassica nigra*), filaree (*Erodium* spp.), and prickly Russian-thistle (*Salsola* tragus). It may occur where disturbance by maintenance (e.g., mowing, scraping, disking, spraying), grazing, repetitive fire, agriculture, or other mechanical disruption have altered soils and removed native seed sources from areas formerly supporting native vegetation. Based on historical aerial imagery, California annual grassland within the survey has been subject to maintenance (such as mowing) in the past. However, no recent sign of maintenance was observed during vegetation mapping. Dominant species in the survey area include ripgut brome (*Bromus diandrus*), wild oats, rescuegrass (*Bromus catharticus*), and black mustard. California annual grasslands occupy approximately 1.77 acres along the northern and western edges of the survey area (Figure 3; Table 1), including approximately 0.91 acre within the Project site.

Fremont Cottonwood Forest

The Fremont cottonwood forest alliance is described MCV2 and NCL and has a global rank of G4 and a state rank of S3 (CDFW 2019), and it therefore is considered sensitive. It includes Fremont cottonwood (*Populus fremontii*) as the dominant or co-dominant species in the tree canopy and has a continuous to open canopy less than 25 meters (82 feet) in height with a variable herbaceous ground layer. Throughout California, the Fremont cottonwood forest alliance occurs on floodplains, along low-gradient rivers, along perennial or seasonally intermittent streams, at springs, in lower canyons in desert mountains, in alluvial fans, and in valleys (CNPS 2020b). Fremont cottonwood forest alliance within the survey area consists of Fremont cottonwood as a co-dominant species with red willow (*Salix laevigata*) and arroyo willow (*Salix lasiolepis*). It occupies approximately 0.72 acre along the eastern edge of the survey area (Figure 3; Table 1), including 0.04 acre within the Project site.

Agriculture

Agriculture is an anthropogenic land cover that is not included in MCV2 or NCL and does not have a global or state rarity ranking. It typically refers to cultivated croplands, but within the survey area refers to a land cover that is subject to regular tilling, but has not recently been under cultivation. Agriculture occupies approximately 8.48 acres within the survey area (Figure 3; Table 1), including 7.54 acre within the Project site.

Disturbed Habitat

Disturbed areas constitute an anthropogenic land cover that displays evidence of physical disturbance. Within the project area, these include regularly maintained areas along the fence line of the existing WWTP and a dirt road along the western edge of the survey area. Disturbed habitat occurs over approximately 0.92 acre within the survey area (Figure 3; Table 1), including 0.82 acre within the Project site.

Ornamental

Ornamental is an anthropogenic land cover that is not described in MCV2 or NCL and does not have a global or state rarity ranking. It includes areas of planted vegetation or landscaping. The ornamental land cover within the survey area refers to an area within the southwest corner supporting planted tree of heaven (*Ailanthus altissima*), with an understory of maintained non-native grasses. The ornamental land cover occurs within 0.10 acre in the survey area (Figure 3; Table 1), including 0.03 acre within the site boundary.

4.3 Plant Species

The literature identified six species considered potentially occurring in the survey area based on the San Miguel Community Plan (County 2016):

- Dwarf calycadenia (*Calycadenia villosa*)
- Kellogg's horkelia (*Horkelia cuneata* var. *sericea*)
- Pale-yellow layia (*Layia heterotricha*)
- Round-leaved filaree (*California macrophylla*)
- Santa Cruz Mountain pussypaws (*Calyptridium parryi* var. *hesseae*)
- Santa Lucia purple amole (*Chlorogalum purpureum* var. *purpureum*)

The CNDDB and CNPS queries identified an additional 25 species recorded in the region. Habitat requirements and potential occurrence of these species are discussed in detail in Attachment B.

No special-status plant species were identified during the special-status plant species survey. A total of 30 plant species was identified within the survey area (Attachment B). Of these, 12 species (40 percent) are native to the region and 18 (60 percent) are non-native. As noted above, most of the survey area had been disked in the recent past. However, several areas around the survey area fringes were not disked, either because they occurred along the fences (on the eastern and southern edges) or in steeper terrain (including a dirt berm in the southwestern corner and a low slope at the western edge). Many of the identified plant species occurred in these areas. However, many of them also occurred scattered throughout the tilled area. And much of the plant litter left from disking

consisted of dead, non-native, annual grasses, such as oats (*Avena* spp.) and bromes (*Bromus* spp.). In addition, because of regular site disturbance from tilling and from several established tracks, the site is poor habitat for special-status plant species, and for native species, in general. Only patches of less-disturbed ground exist outside the Salinas River riparian vegetation, and the vegetation occurring in those patches was also consistent with vegetation growing in disturbed locations.

If you have any questions regarding the content of this letter report or require additional information, please feel free to contact me at (805) 252-0557 or dcompton@dudek.com.

Sincerely,



Dave Compton
Senior Biologist

Attachments: A – Figures
B – Special-Status Plant Species with Potential to Occur in the Survey Area
C – Plant Species Observed

cc: Jessica Kinnahan, Dudek
cc: John Davis IV, Dudek

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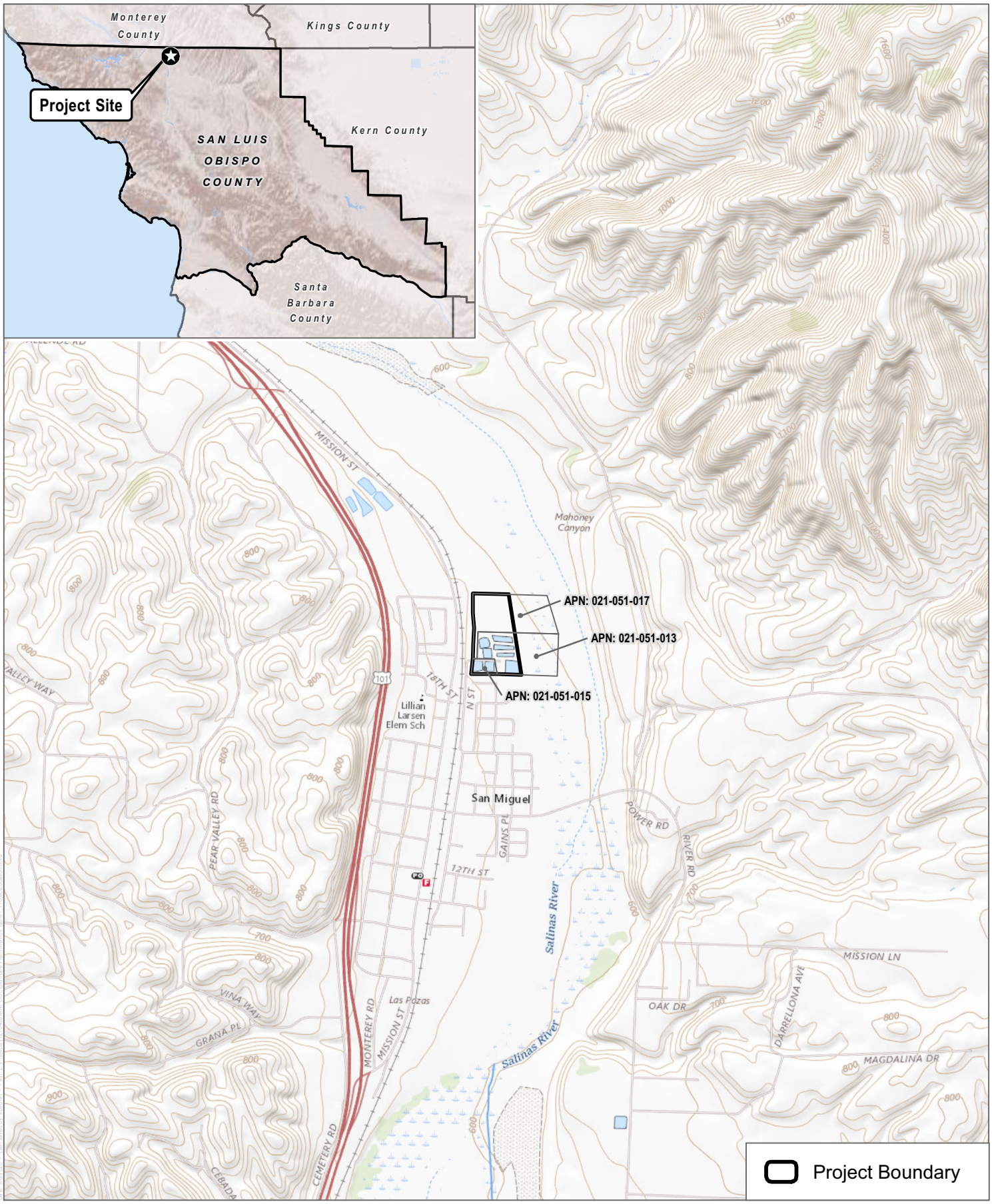
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Attachment A

Figures



SOURCE: USGS The National Map - San Miguel and Paso Robles Quadrangles

DUDEK

0 1,000 2,000 Feet

FIGURE 1

Project Location

San Miguel Wastewater Treatment Plant Upgrade/Expansion



SOURCE: Esri World Imagery

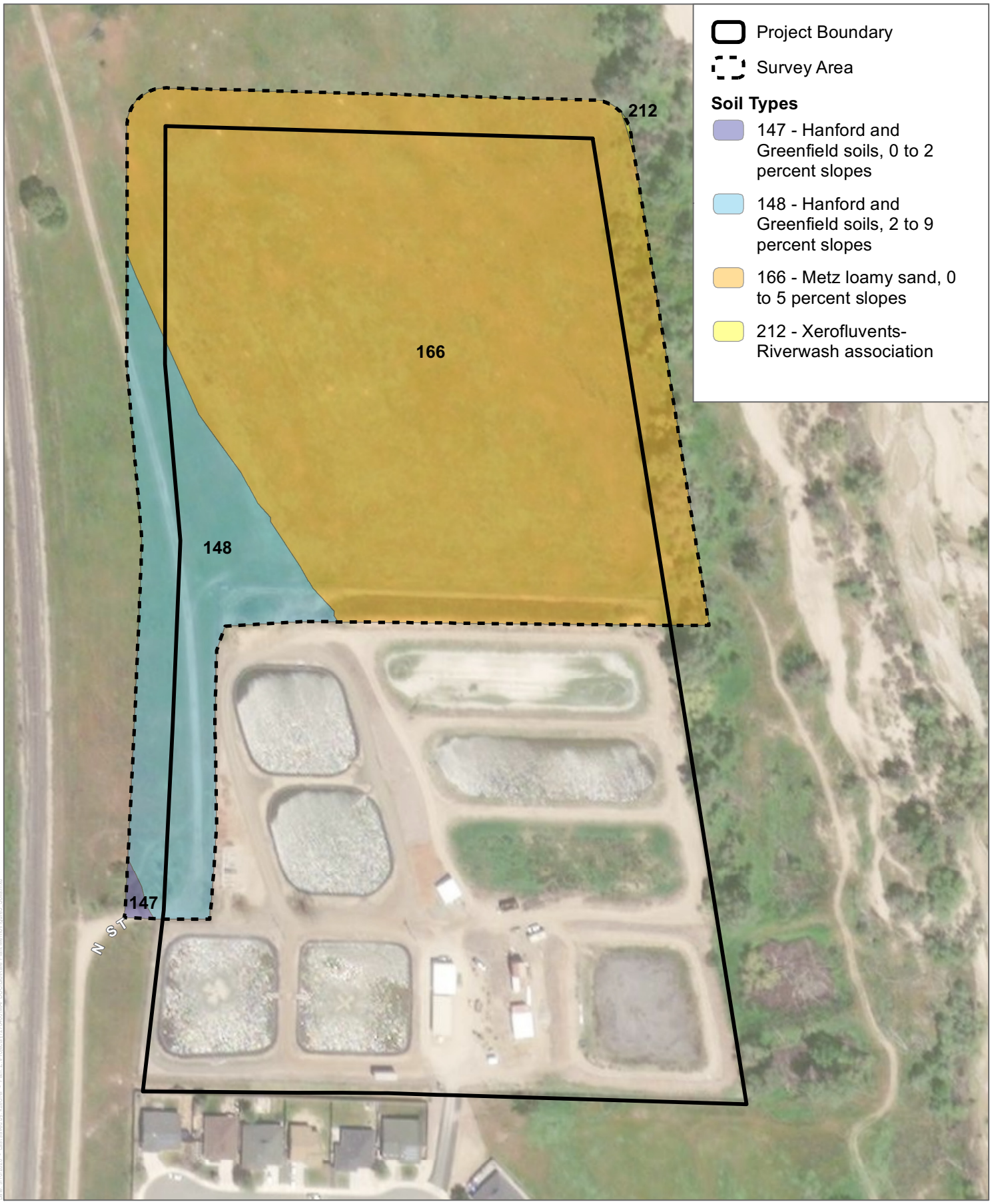
DUDEK

0 100 200 Feet

FIGURE 2

Survey Area

San Miguel WWTP Upgrade/Expansion Project



SOURCE: ESRI World Imagery

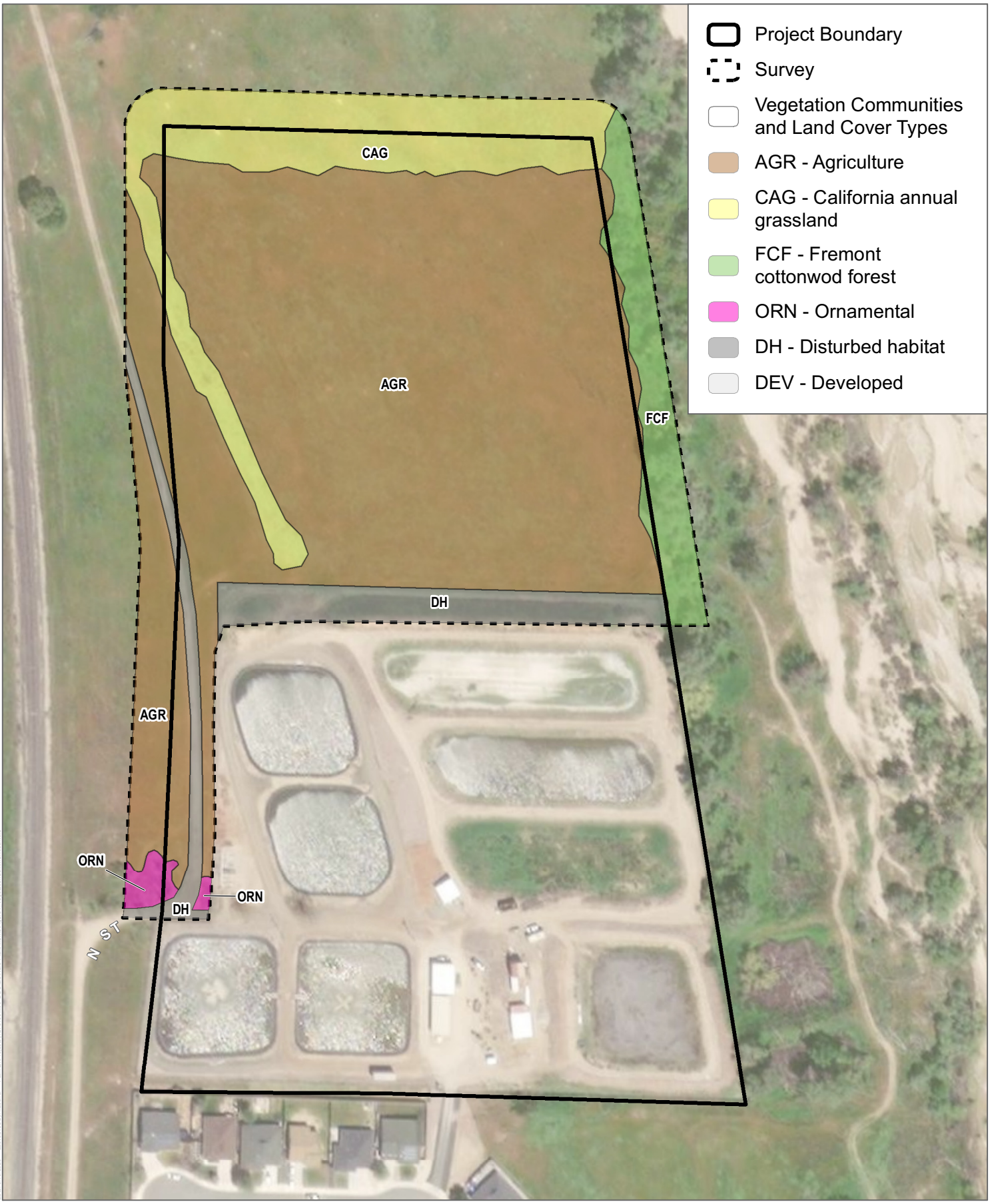
DUDEK

0 80 160 Feet

FIGURE 3

Soils

San Miguel Wastewater Treatment Plant Upgrade/Expansion



SOURCE: ESRI World Imagery

DUDEK

0 80 160 Feet

FIGURE 4

Vegetation Communities

San Miguel Wastewater Treatment Plant Upgrade/Expansion

Attachment B

Special-Status Plant Species with Potential to Occur in the Survey Area

Attachment B. Special-Status Plant Species with Potential to Occur in the Survey Area

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Abies bracteata	bristlecone fir	None/None/1B.3	Broadleafed upland forest, Chaparral, Lower montane coniferous forest, Riparian woodland; rocky/perennial evergreen tree/N.A./605–5,100	Not expected to occur. No suitable vegetation present and no occurences in the vicinity.
Agrostis hooveri	Hoover's bent grass	None/None/1B.2	Closed-cone coniferous forest, Chaparral, Cismontane woodland, Valley and foothill grassland; usually sandy/perennial herb/Apr–July/15–2,000	Not expected to occur. No CNDDB occurrences in the vicinity, and only a small area of marginally suitable habitat present. Not detected during the June 2020 survey.
Antirrhinum ovatum	oval-leaved snapdragon	None/None/4.2	Chaparral, Cismontane woodland, Pinyon and juniper woodland, Valley and foothill grassland; clay or gypsum, often alkaline/annual herb/May–Nov/655–3,280	Not expected to occur. The nearest CNDDB occurrence is from 5.0 miles SE, but only a small area of marginally suitable habitat is present. Not detected during the June 2020 survey.
Aristocapsa insignis	Indian Valley spineflower	None/None/1B.2	Cismontane woodland (sandy)/annual herb/May–Sep/980–1,965	Not expected to occur. The nearest CNDDB occurrence is from approximately 2.5 miles north northwest of the Project site, but no suitable habitat is present.
California macrophylla	round-leaved filaree	None/None/CBR (formerly 1B.1)	Cismontane woodland, Valley and foothill grassland; clay/annual herb/Mar–May/45–3,935	Low potential to occur. Only a very small area of marginally suitable habitat is present. Not detected during the June 2020 survey.
Calycadenia villosa	dwarf calycadenia	None/None/1B.1	Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland; rocky, fine soils/annual herb/May–Oct/785–4,425	Not expected to occur. The nearest occurrences are from more than 5.0 miles to the northeast, and only a small area of marginally suitable habitat is present. Not detected during the June 2020 survey.

Attachment B. Special-Status Plant Species with Potential to Occur in the Survey Area

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Calyptridium parryi va. hesseae	Santa Cruz Mountain pussy-paws	None/None/1B.1	Chaparral, Cismontane woodland; sandy or gravelly, openings/annual herb/May–Aug/1,000–5,015	Not expected to occur. CNDDB includes no occurrences within 10.0 miles, and the site is outside the species' known elevation range. Not detected during the June 2020 survey.
Camissoniopsis hardhamiae	Hardham's evening-primrose	None/None/1B.2	Chaparral, Cismontane woodland; sandy, decomposed carbonate, disturbed or burned areas/annual herb/Mar–May/455–3,100	Not expected to occur. The nearest CNDDB occurrence is from 5.0 miles northwest of the Project site, but no suitable habitat is present.
Castilleja densiflora var. obispoensis	San Luis Obispo owl's-clover	None/None/1B.2	Meadows and seeps, Valley and foothill grassland; sometimes serpentinite/annual herb (hemiparasitic)/Mar–May/30–1,410	Low potential to occur. The nearest CNDDB occurrence is from 5.0 miles southwest of the Project site, and only a small area of marginally suitable habitat is present. Not detected during the June 2020 survey.
Caulanthus lemmonii	Lemmon's jewelflower	None/None/1B.2	Pinyon and juniper woodland, Valley and foothill grassland/annual herb/Feb–May/260–5,180	Low potential to occur. CNDDB includes a historical occurrence generally mapped in the community of San Miguel, but only a small area of marginally suitable habitat is present. Not detected during the June 2020 survey.
Chlorogalum purpureum var. purpureum	Santa Lucia purple amole	FT/None/1B.1	Chaparral, Cismontane woodland, Valley and foothill grassland; gravelly, clay/perennial bulbiferous herb/Apr–June/670–1,260	Not expected to occur. No CNDDB occurrences in the vicinity, only a small area of marginally suitable habitat is present.
Chorizanthe rectispina	straight-awned spineflower	None/None/1B.3	Chaparral, Cismontane woodland, Coastal scrub/annual herb/Apr–July/275–3,395	Not expected to occur. CNDDB includes an occurrence from approximately 3.8 miles northwest of the Project site, but no suitable habitat is present.

Attachment B. Special-Status Plant Species with Potential to Occur in the Survey Area

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Delphinium umbraculorum	umbrella larkspur	None/None/1B.3	Chaparral, Cismontane woodland/perennial herb/Apr–June/1,310–5,245	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Entosthodon kochii	Koch's cord moss	None/None/1B.3	Cismontane woodland (soil)/moss/N.A./590–3,280	Not expected to occur. No suitable vegetation present.
Eriastrum luteum	yellow-flowered eriastrum	None/None/1B.2	Broadleafed upland forest, Chaparral, Cismontane woodland; sandy or gravelly/annual herb/May–June/950–3,280	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Eriogonum temblorense	Temblor buckwheat	None/None/1B.2	Valley and foothill grassland (clay or sandstone)/annual herb/(Apr)May–Sep/980–3,280	Not expected to occur. The site is outside of the species' known elevation range.
Githopsis tenella	delicate bluecup	None/None/1B.3	Chaparral, Cismontane woodland; mesic, serpentinite/annual herb/Apr–June/1,065–6,230	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Horkelia cuneata var. sericea	Kellogg's horkelia	None/None/1B.1	Closed-cone coniferous forest, Chaparral (maritime), Coastal dunes, Coastal scrub; sandy or gravelly, openings/perennial herb/Apr–Sep/30–655	Not expected to occur. CNDDB includes a historical occurrence mapped generally from the community of San Miguel, but no suitable habitat is present.
Juncus luciensis	Santa Lucia dwarf rush	None/None/1B.2	Chaparral, Great Basin scrub, Lower montane coniferous forest, Meadows and seeps, Vernal pools/annual herb/Apr–July/980–6,690	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. CNDDB includes an occurrence from 1937 mapped generally just over 5.0 miles southeast of the Project site.
Lagophylla diabolensis	Diablo Range hare-leaf	None/None/1B.2	Cismontane woodland, Valley and foothill grassland; Clay./annual herb/Apr–Sep/1,195–2,900	Not expected to occur. The site is outside of the species' known elevation range, and CNDDB includes no occurrences in the vicinity.

Attachment B. Special-Status Plant Species with Potential to Occur in the Survey Area

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Layia heterotricha	pale-yellow layia	None/None/1B.1	Cismontane woodland, Coastal scrub, Pinyon and juniper woodland, Valley and foothill grassland; alkaline or clay/annual herb/Mar–June/980–5,590.	Not expected to occur. CNDDB includes no occurrences within 10 miles, and the site is outside the species' known elevation range. Not detected during the June 2020 survey.
Lepidium jaredii ssp. jaredii	Jared's pepper-grass	None/None/1B.2	Valley and foothill grassland (alkaline, adobe)/annual herb/Mar–May/1,095–3,295	Not expected to occur. CNDDB includes a historical occurrence mapped generally just over 5.0 miles southeast of the Project site, but the site is outside the species' known elevation range..
Malacothamnus abbottii	Abbott's bush-mallow	None/None/1B.1	Riparian scrub/perennial deciduous shrub/May–Oct/440–1,605	Not expected to occur. CNDDB includes no occurrences in the vicinity, and only a small area of suitable habitat is present. Not detected during the June 2020 survey.
Malacothamnus aboriginum	Indian Valley bush-mallow	None/None/1B.2	Chaparral, Cismontane woodland; Rocky, granitic, often in burned areas/perennial deciduous shrub/Apr–Oct/490–5,575	Not expected to occur. No suitable habitat present.
Malacothamnus davidsonii	Davidson's bush-mallow	None/None/1B.2	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland/perennial deciduous shrub/June–Jan/605–3,740	Not expected to occur. CNDDB includes no occurrences within 5.0 miles of the Project site, and only a small area of suitable habitat is present.
Malacothrix saxatilis var. arachnoidea	Carmel Valley malacothrix	None/None/1B.2	Chaparral (rocky), Coastal scrub/perennial rhizomatous herb/(Mar)June–Dec/80–3,395	Not expected to occur. No suitable vegetation present. CNDDB includes no occurrences within 5.0 miles of the Project site.
Monolopia gracilens	woodland woolythreads	None/None/1B.2	Broadleafed upland forest (openings), Chaparral (openings), Cismontane woodland, North Coast coniferous forest (openings),	Not expected to occur. CNDDB includes no occurrences within 5.0 miles of the Project site, and CNDDB includes only a small area of suitable habitat.

Attachment B. Special-Status Plant Species with Potential to Occur in the Survey Area

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
			Valley and foothill grassland; Serpentine/annual herb/(Feb)Mar–July/325–3,935	
Navarretia nigelliformis ssp. radians	shining navarretia	None/None/1B.2	Cismontane woodland, Valley and foothill grassland, Vernal pools; Sometimes clay/annual herb/(Mar)Apr–July/210–3,280	Not expected to occur. CNDDB includes a historical occurrence mapped generally in the community of San Miguel, but only a small area of marginally suitable habitat is present. Not detected during the June 2020 survey.
Navarretia prostrata	prostrate vernal pool navarretia	None/None/1B.2	Coastal scrub, Meadows and seeps, Valley and foothill grassland (alkaline), Vernal pools; Mesic/annual herb/Apr–July/5–3,965	Not expected to occur. CNDDB includes no occurrences within 5.0 miles of the Project site, and only a small area of marginally suitable habitat is present.
Plagiobothrys uncinatus	hooked popcornflower	None/None/1B.2	Chaparral (sandy), Cismontane woodland, Valley and foothill grassland/annual herb/Apr–May/980–2,490	Not expected to occur. The nearest CNDDB occurrence is from approximately 3.7 miles west of the Project site, in 2003, but the site is outside the species' known elevation range.
Stebbinsoseris decipiens	Santa Cruz microseris	None/None/1B.2	Broadleafed upland forest, Closed-cone coniferous forest, Chaparral, Coastal prairie, Coastal scrub, Valley and foothill grassland; open areas, sometimes serpentinite/annual herb/Apr–May/30–1,640	Low potential to occur. The nearest CNDDB occurrence is from approximately 5.0 miles northwest of the Project site, and only a small area of marginally suitable habitat is present. Not detected during the June 2020 survey.

Attachment C

Plant Species Observed

PLANT SPECIES OBSERVED

MONOCOTS

POACEAE—GRASS FAMILY

* *Avena* sp. —wild oats
* *Bromus catharticus*—rescuegrass
* *Bromus diandrus*—ripgut brome
* *Bromus catharticus*—rescuegrass
* *Bromus hordeaceus*—soft brome

EUDICOTS

ADOXACEAE—MUSKROOT FAMILY

Sambucus nigra ssp. caerulea—blue elderberry

APIACEAE—CARROT FAMILY

* *Conium maculatum*—poison hemlock
* *Foeniculum vulgare*—fennel

ASTERACEAE—SUNFLOWER FAMILY

Ambrosia acanthicarpa—flatspine bur ragweed
* *Centaurea solstitialis*—yellow star-thistle
* *Erigeron bonariensis*—asthmaweed

BORAGINACEAE—BORAGE FAMILY

Amsinckia sp.—fiddleneck
Heliotropium curassavicum—salt heliotrope

BRASSICACEAE—MUSTARD FAMILY

* *Brassica nigra*—black mustard
* *Hirschfeldia incana*—shortpod mustard
* *Sisymbrium irio*—London rocket

CHENOPODIACEAE—GOOSEFOOT FAMILY

Atriplex lentiformis—quailbush
* *Chenopodium murale*—nettleleaf goosefoot
* *Salsola tragus*—prickly Russian thistle

***EUPHORBIACEAE*—SPURGE FAMILY**

Croton setiger—dove weed

***FABACEAE*—LEGUME FAMILY**

Acmispon americanus var. *americanus*—American bird's-foot trefoil

***GERANIACEAE*—GERANIUM FAMILY**

* *Erodium cicutarium*—redstem stork's bill

***MALVACEAE*—MALLOW FAMILY**

* *Malva parviflora*—cheeseweed mallow

***PAPAVERACEAE*—POPPY FAMILY**

Eschscholzia californica—California poppy

***POLYGONACEAE*—BUCKWHEAT FAMILY**

* *Polygonum aviculare*—prostrate knotweed

***SALICACEAE*—WILLOW FAMILY**

Populus fremontii—Fremont cottonwood
Salix laevigata—red willow
Salix lasiolepis—arroyo willow

***SIMAROUBACEAE*—QUASSIA OR SIMAROUBA FAMILY**

* *Ailanthus altissima*—tree of heaven

***SOLANACEAE*—NIGHTSHADE FAMILY**

Datura wrightii—sacred thorn-apple

* – non-native naturalized species

Biological Assessment

San Miguel Wastewater Treatment Plant Upgrade/ Expansion Project

DECEMBER 2021

Prepared for:

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APPENDIX

A San Joaquin Kit Fox Habitat Assessment

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1 Introduction

1.1 Summary of the Proposed Action

The community of San Miguel, located approximately 10 miles north of the City of Paso Robles in San Luis Obispo County, California, receives several municipal services from the San Miguel Community Services District (District) (Figure 1, Project Location). District services include lighting, solid waste collection, fire protection, water, and wastewater. Treatment of municipal wastewater occurs at the existing San Miguel Machado Wastewater Treatment Facility (WWTF), which is located near the northern limits of the District, adjacent to the west bank of the Salinas River.

The District has identified the need to enhance and expand the existing WWTF as further described herein to address regulatory requirements and to provide service to the growing San Miguel community into the future. The proposed San Miguel Wastewater Treatment Plant Upgrade/Expansion Project (proposed action) would increase the permitted daily capacity from 200,000 gallons per day to 500,000 gallons per day and enable treated effluent to be stored or conveyed to nearby agricultural operations for non-edible agricultural irrigation. The proposed action includes upgrading the existing WWTF, expanding the facility to a property immediately north of the existing WWTF, and installing several segments of a reclaimed water pipeline from the WWTF to several locations within the community.

1.2 Species Potentially Affected

The federally listed species addressed in this BA are: the south-central California coast distinct population segment (DPS) of steelhead (*Oncorhynchus mykiss irideus*, population 9), San Joaquin kit fox (*Vulpes macrotis mutica*; endangered), California condor (*Gymnogyps californianus*; endangered), and least Bell's vireo (*Vireo bellii pusillus*; endangered). Section 3 of this biological assessment contains a more detailed discussion of federally listed species considered in the preparation of this BA. Section 3.2 notes listed species that are not present and that are not discussed in further detail.

1.3 Consultation to Date

As of December 2021, the San Miguel Community Services District (SMCSD) is in the process of preparing an Initial Study/Mitigated Negative Declaration (IS/MND) for the project. SMCSD is seeking federal grant funding from the U.S. Department of Agriculture (USDA) Rural Development (RD), a mission area including three federal agencies that provide financial assistance and a variety of technical and educational assistance to eligible rural and tribal populations, eligible communities, individuals, cooperatives, and other entities, with a goal of improving the quality of life, sustainability, infrastructure, economic opportunity, development, and security in rural America. In the fall 2021, USDA RD requested that SMCSD contact the U.S. Fish and Wildlife Service (USFWS) with regard to the potential presence of federally listed species. On behalf of SMCSD, Dudek contacted USFWS with regard to potential take of San Joaquin kit fox in September 2021, and USFWS provided initial guidance on addressing federally listed species for the project. Prior to preparation of this biological assessment, a formal consultation has not been initiated for any of the above-mentioned species, with either the National Marine Fisheries Service (NMFS) for steelhead or with the USFWS for San Joaquin kit fox, California condor, or least Bell's vireo.

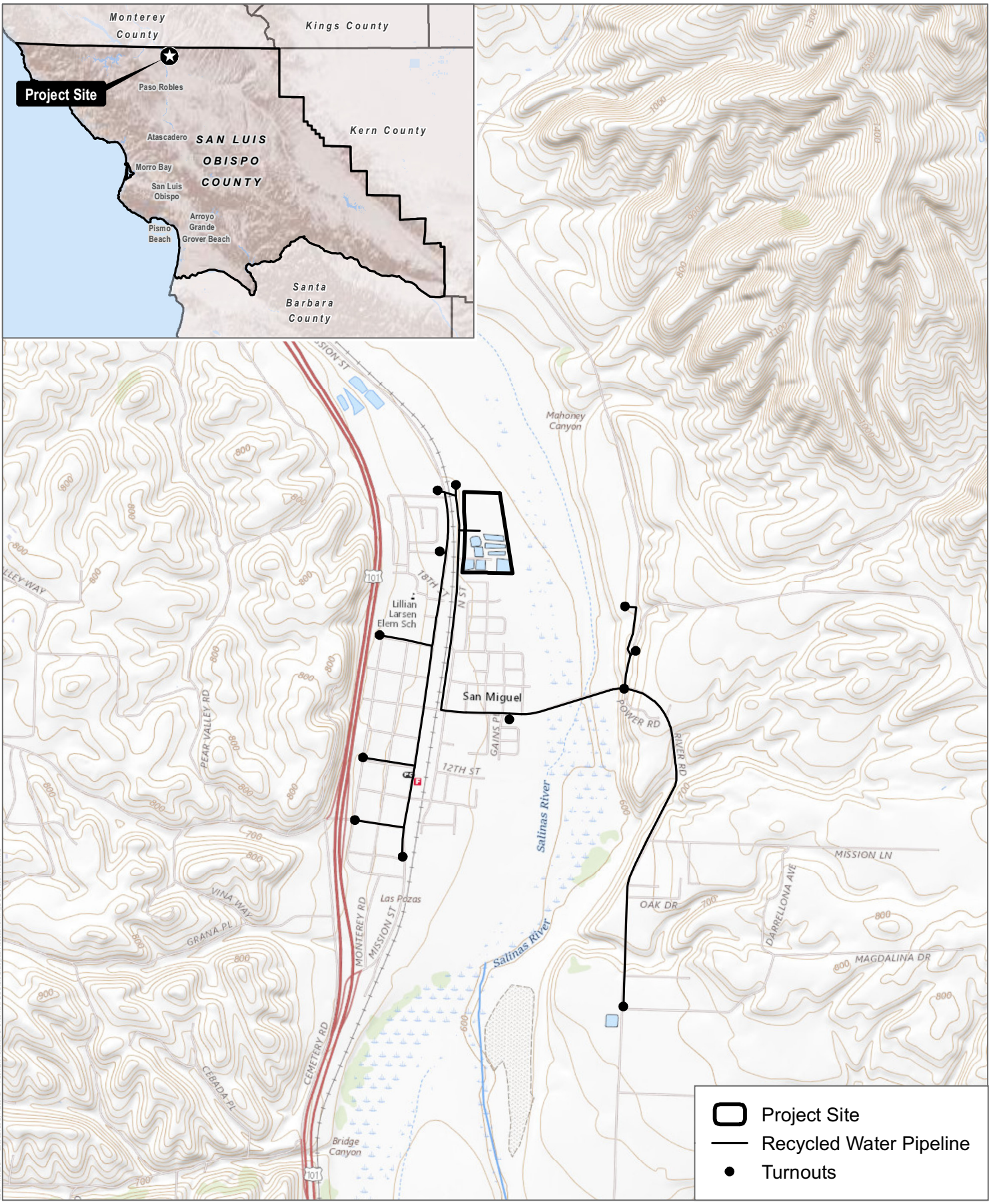
1.4 Current Management Direction

The Action Area occurs within the San Miguel Community Plan Area. The San Miguel Community Plan (Plan; County 2016b) was prepared to guide planning within the unincorporated community of San Miguel through 2035, and "to balance the needs of the growing population with preservation of natural and historic resources." Policies, programs, and guidelines described in the Plan are intended to implement the goals of the San Luis Obispo County General Plan. In accordance with the Plan and the San Miguel Community Plan Final Environmental Impact Report (FEIR; County 2016a), and requirements of the California Environmental Quality Act (CEQA), the SMCSD has prepared an Initial Study/Mitigated Negative Declaration (IS/MND; CSD 2021), analyzing environmental impacts of the project. The IS/MND includes measures mitigating, avoiding, and minimizing biological resources impacts, including potential impacts to federally listed species. Under the Plan and the Conservation and the Open Space Element of the General Plan (County 2010), the County has developed a system for habitat mitigation for loss of San Joaquin kit fox habitat, and avoidance and minimization of impacts to the species, designed to be consistent with requirements of wildlife resource agencies, including USFWS. The County has prepared a map showing suggested mitigation ratios for loss of habitat within all parts of the San Miguel Community Plan Area (County 2016b). Dudek (2020) prepared an evaluation of San Joaquin kit fox habitat in the Action Area in accordance with County requirements (Appendix A). The public draft IS/MND has incorporated recommendations of the assessment in its mitigation program. These recommendations are currently under review by the California Department of Fish and Wildlife (CDFW) and the County. The Plan also includes a table of potentially occurring special-status wildlife species (County 2016a; Table 4-B: Special Status Animal Species), which includes least Bell's vireo. Table 4-A, Special Status Plant Species, lists Santa Lucia purple amole (*Chlorogalum purpureum* var. *purpureum*), listed as threatened under ESA (County 2016a). But it includes no further discussion of these or any other federally listed species.

1.5 Purpose and Need

The SMSCD's primary purposes for the project are to provide adequate wastewater service for the community of San Miguel into the future and to meet regulatory requirements. The need for the project is driven by the Central Coast RWQCB's existing and anticipated waste discharge requirements (WDRs, including WDR Order No. R3-2020-0020) and forecasted population growth within San Miguel. Although there are differing projections for total community growth based on the County of San Luis Obispo San Miguel Community Plan Update and Final EIR or by the District's own estimate, the contemplated growth in both cases is greater than the existing WWTF capacity. The objectives of the project include the following:

- Provide reliable wastewater services to the community of San Miguel;
- Enhance and upgrade the WWTF to comply with RWQCB WDR Order No. R3-2020-0020;
- Enable total dissolved solids, chloride, sodium, and nitrogen removal as part of the WWTF enhancements;
- Offset groundwater withdrawal from the Paso Robles Groundwater Basin by increasing the use of reclaimed water;
- Treat wastewater to a level sufficient for irrigation of non-edible agriculture; and
- Implement the Membrane Bioreactor alternative as outlined in the Engineering Report (Monsoon Consultants 2020).



SOURCE: USGS National Map

0 1,000 2,000 Feet

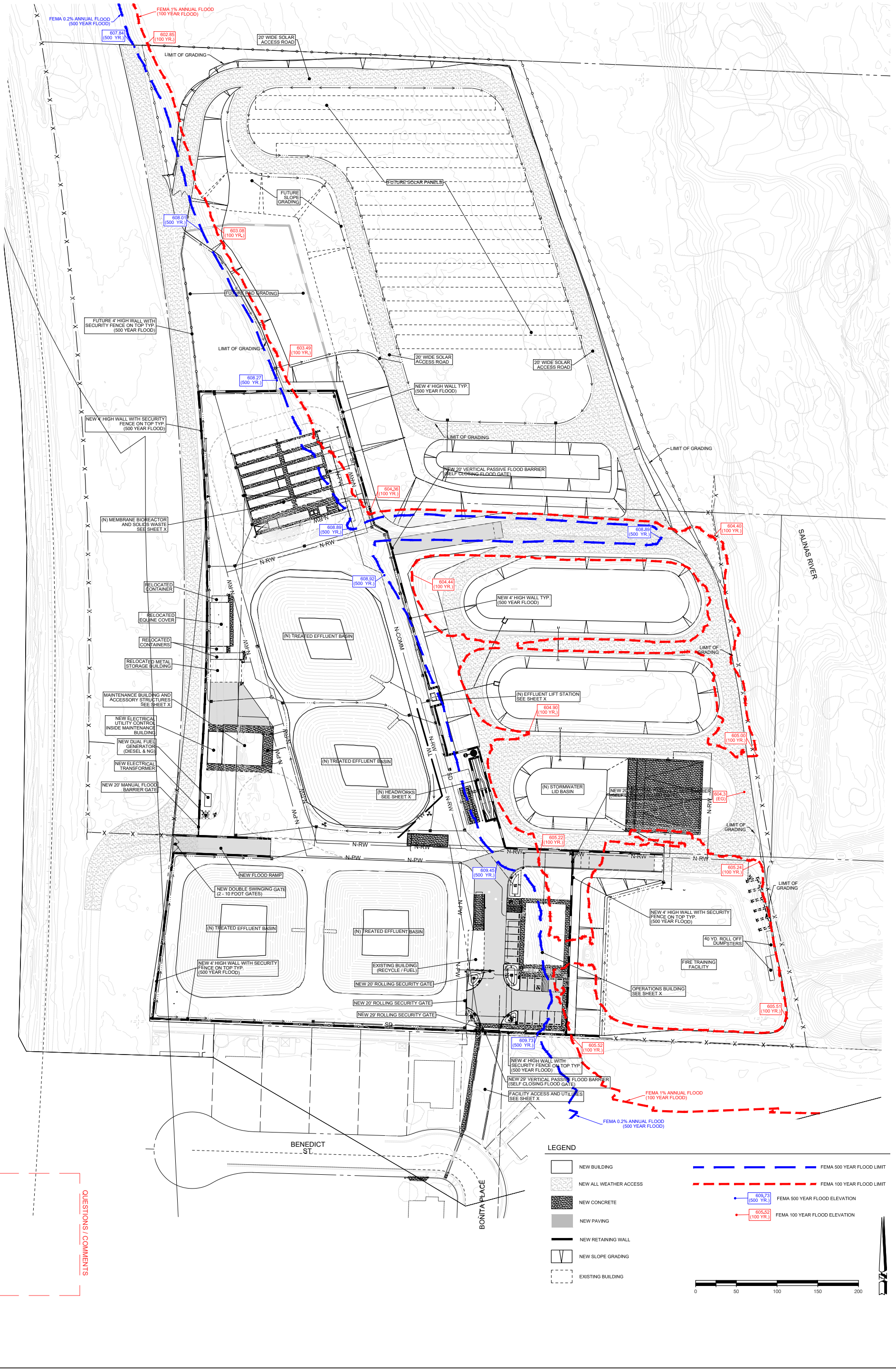
FIGURE 1

Project Location

SAN MIGUEL WASTEWATER TREATMENT PLANT UPGRADE/EXPANSION BIOLOGICAL ASSESSMENT

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SOURCE: Monsoon 2022

FIGURE 2

Site Plan

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2 Description of the Proposed Action

The primary actions associated with the proposed action include the upgrade of wastewater and solids treatment systems, expansion of WWTF treatment capacity, implementation of recycled water treatment systems, and improvement of ancillary support facilities (Figure 2, Site Plan). The proposed action includes utilizing existing WWTF facilities and renovating existing and installing new facilities as described in the following sections.

2.1 Existing Facilities

There are four existing aeration ponds and three percolation beds that will remain as a part of the project. Access roads onsite would be improved. Existing trailers would be removed.

2.1.1 Aerated Treatment Ponds

Aerated Treatment Ponds 1 and 2: There are two 0.94-million-gallon Stage 1 aerated aerobic ponds, equipped with 25 and 20 horsepower pumps (HP), respectively. These are completely mixed aerated lagoons. The floating aerators keep all solids in suspension while maintaining dissolved oxygen levels. Solids do not appreciably deposit in Ponds 1 and 2, but instead settle out predominantly in Pond 3. Floatable plastics and debris must be raked out of these ponds by hand.

Aerated Treatment Pond 3: There is a single 0.87-million-gallon Stage 2 pond equipped with a 7.5 HP aerator. This pond and floating aerators maintain dissolved oxygen levels in the pond, while allowing solids to settle to the bottom. Organic matter in the sludge slowly decomposes anaerobically. This pond is generally referred to as a facultative pond, with an upper aerobic zone and lower anaerobic zone.

Aerated Treatment Pond 4: There is a single 0.87-million-gallon Stage 3 pond equipped with a 7.5 HP aerator. This is the final (fourth) pond that also maintains dissolved oxygen levels in the upper zone. Very little sludge settles in this pond, and this pond is considered a final polishing pond prior to discharge to the percolation ponds/beds.

2.1.2 Percolation Ponds

Percolation Ponds*:* There are three percolation ponds totaling 1.7 acres. The two northernmost ponds were re-conditioned in 2008. At that time, both ponds had silted up considerably and were not effectively percolating effluent. Both ponds were dried out and ripped, and the upper several feet of material were removed and replaced with clean sand. In addition, the percolation ponds were deep-ripped in several locations to allow for better connectivity to the underlying more permeable soils. The third and southernmost pond was not re-worked at that time but continues to serve as a percolation pond.

2.1.3 Access Roads

Access to the WWTF is provided by a paved access driveway off Bonita Place. On the District property, roads around the aerated treatment ponds and percolation ponds are unpaved.

2.2 Proposed Facilities

The following site improvements are proposed as part of the project regarding the upgrade of wastewater and solids treatment systems.

2.2.1 Headworks Building and Treatment Equipment

The headworks will be a concrete vault structure which will contain process equipment described below. The headworks structure will be constructed of cast-in-place concrete and be primarily below grade. The footprint of the structure will be approximately 1600 square feet with the base of the structure approximately 15 feet below the ground surface. The headworks vault would be located within the existing WWTF between Pond 3 and Percolation Bed 3.

Flow Splitter: The flow splitter would send excess flow to an existing pond that will be retrofitted into an aerated flow equalization basin. Base flows would be directed into the influent pumping station.

Influent Pumping Station: A new influent pump station would replace the existing aging pumping station. The new influent pumping station would be constructed as a "wet well" type and equipped with multiple (minimum of two) submersible pumps. Wastewater would pass through the headworks then into the pump station to lift it to a higher elevation so that it can flow through the remainder of the plant by gravity. Odor control would be installed to minimize wet-well turbulence; that includes collection of odors in scrubbers or biofilters or the addition of odor control chemicals to the sewer upstream of the pump station. Chemicals typically used for odor control include chlorine, hydrogen peroxide, metal salts (ferrous chloride and ferric sulfate), oxygen, air, and potassium permanganate. The influent pump station would be approximately 300sf and located adjacent to and immediately downstream of the headworks. Like the headworks structure, the influent lift station will be primarily below ground, with the base being approximately 18-feet below the ground surface.

Microscreen: The microscreen removes additional suspended solids from wastewater. Solids removed by the microscreen would be stored in a dumpster for hauling to the Chicago Grade Landfill in Templeton (see Section 2.3).

2.2.2 Secondary Treatment Building

Once wastewater passes through the headworks and influent lift station and the primary treatment process is complete, the effluent would pass into the secondary treatment facility containing the membrane bioreactor (MBR) unit. Components of the MBR unit will include a new pre-engineered package MBR municipal wastewater treatment system, along with a new pre-engineered system for the disinfection of treated effluent which shall be accomplished by enclosed, low pressure, Ultraviolet (UV) unit(s), and a new pre-engineered package biosolids dewatering system. Facilities for chemical storage, as required for MBR operation and maintenance, will be incorporated into the MBR unit. Initially the MBR unit will be installed on a structural concrete slab with an approximate footprint of 15,000 square feet. The MBR unit will initially not be enclosed in a building and will be exposed to the atmosphere. The maximum height of the equipment will extend approximately 12-feet above the adjacent ground surface. In the future, the District may consider enclosing the MBR unit in an environmentally controlled building which would have a similar footprint (i.e., 15,000 square feet) and have a maximum building height of approximately 25 feet. The building would be located within the existing WWTF.

Membrane Bioreactor Unit: Membrane bioreactor technology provides simultaneous secondary and tertiary treatment. Separation of liquid and solids is accomplished by operating submerged membranes under vacuum with product water drawn through the membranes with permeate pumps or using a gravity-assist siphon system. The

solids remaining on the surface of the membranes are returned to the head of the aeration basins. A portion of the solids are wasted just as with conventional activated sludge. Membrane bioreactors require finer screening (2-millimeter screens) than conventional activated sludge to remove fine materials that can wrap around and clog the membranes. Another added benefit of MBR technology is that the volume of air to be treated for odor control is smaller than conventional treatment. Solids removed from the MBR would be conveyed for sludge management, dewatering, and disposal (see Section 2.3).

Blowers: Blowers would create air flow to support the aeration process. Proper air supply is critical to various functions in the wastewater treatment facility.

Internal Mixed Liquor Recycle: This equipment removes excess nitrogen from effluent.

Ultraviolet Disinfection System: UV disinfection uses UV radiation to destroy or inactivate disease-causing organisms. UV lamps would be contained within vessels and water would be pumped through the vessels at a set flow rate. The UV disinfection process enables the treated effluent to meet California Code of Regulations Title 22 standards for use of reclaimed water for non-edible irrigation.

Biosolids Dewatering System: The biosolids dewatering system will include a dewatering press, feed pump and polymer system, aeration system, and stainless-steel liquid storage tank. This operation and controls of the biosolids dewatering systems hall all be integrated into the MBR System control system and District SCADA system. The sludge dewatering equipment shall have the capacity to produce a dewatered sludge with a minimum 20% solids. Dewatered sludge will fall from the press by gravity into the District supplied roll-off dumpster or equivalent container for transport and landfill disposal.

Chemical Storage: The WWTF uses certain chemicals to maintain the treatment process. These chemicals would be housed in on the MBR unit slab, with secondary containment, and managed in accordance with an approved hazardous materials business plan.

2.2.3 Other Pumping Facilities

The proposed action includes several replacements for existing pumps. The proposed pumps are shown in Table 1.

Table 1. Proposed Pump Schedule

Purpose	Quantity	Type	Size (HP)	Location	Power Required (KWH/day)
Lift Station	2	Submersible	20	Lift Station	358
Grit Classifier Pump	1	Centrifugal	5	Headworks	11
Filtrate Pump	2	Centrifugal	5	MBR	120
RAS Pump	2	Centrifugal	7.5	MBR	187
IR Pump	2	Centrifugal	5	MBR	58
Dosing Pump	1	Centrifugal	0.25	MBR	9
Polymer Dosing Pump	1	Centrifugal	0.5	Sludge Management	3
Recycled Water Pump	2	Submersible	25	Treated Effluent/Recycled Water Pump Station	358

Source: Monsoon Consultants (2020).

Notes: QTY = Quantity; HP = horsepower; KWH = kilowatt-hours; MBR = membrane bioreactor; RAS = return activated sludge

2.2.4 Support Facilities

Office and Laboratory Facilities: The proposed expansion/upgrade of the plant would require trained and certified staff with expertise in mechanical plant operations and laboratory testing to be on site. This increased operator presence and laboratory testing requirements would require that permanent environmentally-controlled office and laboratory facilities be constructed at the WWTF site. The office and lab building would be 2,000 square feet and located near the main entrance to the WWTF.

Additional Maintenance and Equipment Storage/Shop Facilities: At present, there exists a small shop/equipment storage building at the WWTF. The existing facility has approximately 1,000 square feet of usable space and is currently utilized primarily for the storage of small equipment, materials, and tools. The facility is plumbed and has electrical service. A single restroom is contained in the existing facility with a toilet, wash basin, and shower. The existing building does not have sufficient space to accommodate several of the larger pieces of equipment that the District currently owns, so at present these are stored outside and exposed to the weather. The proposed expansion/upgrade of the plant will require the acquisition of additional equipment that will require regular maintenance and repairs. To facilitate storage and repair of the required equipment, a new storage/shop facility would be constructed. The proposed structure would be approximately 2,400 square feet and 25 feet in height.

Environmentally Controlled Electrical and Controls Facilities: With the expansion and upgrade of the existing WWTF, the existing electrical service and controls infrastructure would be upgraded. Currently, the electrical and controls equipment is located outside, with only a shade structure for protection from the elements. It is anticipated that as part of the proposed action, there would be a significant increase in the number and sophistication of the electrical and controls devices and components required for the operation, monitoring, and control of the plant. To properly protect the required electrical and controls systems and to provide an environment where they can be properly serviced and maintained, the project includes a 15-foot-high building encompassing 600 square feet to house this equipment.

Upgrade and Modernization of the Electrical, Controls, and SCADA Systems: The proposed action would include an upgrade to the existing electrical service and controls infrastructure. The existing WWTF requires only basic electrical and controls infrastructure and minimal automation. The existing SCADA system is utilized primarily for alarm notification to off-site operators and for basic acquisition of operational data. With the increased sophistication and complexity of operations that would occur as a result of the WWTF expansion and upgrade, it would be necessary to upgrade and modernize the electrical, controls, and SCADA systems. It is imperative that the planning and design of these system upgrades be accomplished with comprehensive input from the District's operations staff to ensure that the electrical, controls, and SCADA systems that are ultimately installed are compatible with the capabilities and expertise of the plant operators.

Backup Power Generation Facilities: The proposed action would include an on-site, automatically starting generator, capable of ensuring continuous operation of all critical wastewater treatment system units for a duration equal to the longest power outage on record.

Septage Receiving Station: A new septage receiving station is desired by the District for receiving septage unloaded from hauling vehicles. The receiving station can be a source of revenue for the District and would provide a service to the surrounding sphere of influence. Wastes received could include residential, portable toilet, septage tank, and/or pre-approved industrial wastes. Typically, liquid waste is pumped into a septage receiving station where rags and trash are removed and deposited into a dumpster. Following initial trash removal, grit is removed and deposited into a dumpster. The flow is then combined with the influent wastewater for treatment.

2.3 Solids Management and Hauling

The wastewater treatment process results in treated wastewater and solids. Solids are routinely extracted from equipment and ponds and, if no use is available, transported to the Chicago Grade Landfill, located at 2290 Homestead Road in Templeton, California. Materials are hauled using a roll-off container truck equipped with a 12-foot container at a frequency of 2 trips per month.

2.4 Optional Photovoltaic Field

The District is continually looking to maximize treatment efficiency and minimize overall cost. Under this option, the proposed action would include the installation of ground-mounted solar panels in the northern portion of the project site, approximately 500 feet north of the aeration ponds. Solar energy would be captured by an array of solar photovoltaic (PV) panels mounted to fixed racking or to a single-axis tracking system. The total number of panels used would depend on the final selection of the actual panels to be used. The panels would be arranged in series to effectively increase output voltage.

The panels would be aligned in rows to be spaced based on specific design criteria and would be mounted on the racking systems. The type of anchoring system and/or foundation supports for the racking structures would be determined based on a preliminary geotechnical assessment, but it is anticipated that the racks would be supported by screw or driven piles into the ground. A fixed racking system would be stationary, with panels mounted to tilt to the south. If used, the tracking system would rotate slowly throughout the day at a range of +/− 60 degrees facing east to west to stay perpendicular to the incoming solar rays so production can be optimized. The number of panels per tracker would depend on final configuration and, at its highest rotated edge, would have a maximum height which will be defined by the topography of the terrain and the dimensions of the chosen panels. The minimum clearance from the lower edge of the panel to ground level is approximately 18 to 24 inches but would be subject to change pending final design. Power from the solar PV system would be used to provide supplemental power to the WWTF.

2.5 Recycled Water Conveyance System

The proposed action contemplates new 8-inch high-density polyethylene pipe water transmission and distribution pipelines to convey wastewater to large vineyards to the east and west of the WWTF. The precise alignment of the purple pipe has not yet been finalized; however, the general alignment would be as described below. It should be noted that the recycled water conveyance system described herein is considered a potential future project by the District and will not be included with the initial phase (i.e., WWTF Upgrade) of the project.

New 8-inch high-density polyethylene pipe would exit the WWTF to the northwest and cross the Union Pacific Railroad (UPRR) tracks and turn south at Mission Street. The pipe would be installed within the existing paved street and run southward from 20th Street approximately 1.5 miles to the junction of Mission Street and 9th Street at the Mission San Miguel/Rios Caledonia turnout on the southern end of San Miguel. This pipeline has been divided into segments as described below.

2.5.1 Mission Street Alignment

Segment A: This segment is approximately 0.5 miles and extends from the WWTF to Mission Street southward to 16th Street. One pipeline offshoot would extend from Mission Street westward on 16th Street approximately 0.18 miles to U.S. Highway 101 to the proposed Lilian Larson Elementary School turnout.

Segment B: This segment is approximately 0.37 miles and extends within Mission Street from 16th Street south to 12th Street. One pipeline offshoot would extend from Mission Street westward on 12th Street approximately 0.16 miles to the San Miguel Park turnout.

Segment C: This segment is approximately 0.65 miles and extends within Mission Street from 12th Street to 9th Street to the Mission San Miguel/Rios Caledonia turnout.

Two additional turnouts would be provided: Vino Farms Vineyard Irrigation Turnout near 20th Street/Mission Street; and Mission Heights Homeowners Association Turnout at 19th Street/Mission Street.

2.5.2 N Street/14th Street Alignment and River Road Alignment

New 8-inch pipe would exit the WWTF to the southwest and turn south within N street before reaching the UPRR tracks. The pipeline would continue south until reaching 14th Street/River Road at which point the pipeline would turn east and cross the Salinas River. One offshoot would be installed at Cross Canyon Road, including the J Lohr East Vineyards turnout, and end at the proposed Airport Mixed Use Development turnout. Once past the offshoot, the pipeline would continue within River Road until reaching Magdalena Drive. This pipeline has been divided into segments as described below.

N Street/14th Street Alignment

Segment D: This segment extends approximately 0.25 miles from the WWTF southward within N Street, which is unpaved for approximately 0.25 mile at which point the road transitions to asphalt paving.

Segment E: This segment includes the portion of the pipe within the paved right-of-way of N Street extending south until reaching 14th Street/River Road.

River Road Alignment

Segment F: This segment beings at N Street/River Road and extends eastward. The pipe would run approximately 0.53 miles until reaching Cross Canyons Road/Power Road. This segment crosses the Salinas River. Installation methodology is specified in Section 2.5. All activities would occur from the bridge deck and there would be no workers or equipment operating within the banks of the Salinas River.

Segment G: This segment extends approximately 0.2 miles southeast within River Road from Canyons Road/Power Road to Old Loop.

Segment H: This segment extends approximately 0.35 miles south within River Road from Old Loop to Mission Lane. This segment contains three ephemeral creeks that flow from east to west under River Road and into the Salinas River.

Segment I: This segment extends approximately 0.42 miles south within River Road from Mission Lane to Martinez Drive. This segment contains one ephemeral creek that flows from east to west under River Road and into the Salinas River.

Segment J: This segment extends approximately 0.10 miles south within River Road from Martinez Drive to Magdalena Drive.

2.5.3 Cross Canyons Alignment

Segment K: This segment extends north at Cross Canyons Road and Indian Valley Road approximately 0.24 miles and terminating at the Airport Mixed Use Development turnout.

2.6 Construction Activities

2.6.1 Wastewater Treatment Plant

Construction of the proposed action is anticipated to commence in the summer 2022 and continue for a minimum of 12 months, subject to the regulatory approval process.

A temporary staging area would be required for construction activities and would be located on District property at the WWTF. The construction staging area would be approximately 100 feet by 200 feet. The construction staging area would be cleared of vegetation if necessary, and crushed rock would be used to stabilize soil to create a temporary entry road, temporary parking, and temporary fabrication areas. Soil excavated during construction may be stockpiled, if feasible, at the construction staging area until it has been determined that it would not be needed for structural fill or backfill. Equipment, material, temporary office space, and construction equipment would be staged in the temporary construction staging area.

Construction would occur between the hours of 7:00 a.m. and 6:00 p.m., Monday through Friday. The construction workforce is anticipated to average approximately 20 workers on a daily basis and at peak activities may be up to 50 workers.

Grading in the amount of approximately 20,000 cubic yards of cut which will be incorporated into site fill is anticipated for construction of the WWTF.

Construction activity, duration, equipment, quantity and workforce estimates for the WWTF upgrade are shown in Table 2.

Table 2. Wastewater Treatment Plant Construction Information

Activity	Duration	Equipment	Quantity	Workers
Grading/Site Prep	4 months	Water Truck	2	50
		On site vehicles	2	
		Grader	1	
		Scraper	2	
		Forklifts	3	
		Dozer	1	
		Loader	1	

Table 2. Wastewater Treatment Plant Construction Information

Activity	Duration	Equipment	Quantity	Workers
		Tractor Buster Utility Carts Roller/Vibrator/Padder Trencher Generator Truck cut fill hauling	1 2 1 1 2 2	
Plant Installation	6 months	Water Truck Grader Dozer Loader Tractor Buster Tractor Disc Utility Carts Roller/Vibrator Scraper Water Pumps Screener	2 3 3 2 1 1 1 3 3 1 1	50
Demobilization	2 months	Grader Dozer Loader	–	20

2.6.2 Reclaimed Water Pipe System

The District has not established a timeline for the construction of the reclaimed (purple pipe) water system. At such time in the future that the reclaimed (purple pipe) water system is constructed, construction/installation of the pipelines would occur between the hours of 7:00 a.m. and 6:00 p.m., Monday through Friday.

Grading in the amount of 2,500 cubic yards of cut and 950 cubic yards of fill is anticipated for construction of the reclaimed water pipe system.

Construction activity, duration, equipment, quantity, and workforce estimates for the reclaimed water pipe system are shown in Table 3.

Table 3. Reclaimed Water Pipe System Information

Activity	Duration	Equipment	Quantity	Workers
Pipeline Installation	6 months	On-Site Vehicles Water Truck Grader Loader Roller/Vibrator Trencher Truck Cut Fill Hauling Drill Rig Reamer Pipe Roller	2 1 1 2 1 1 1 1 1 1	10
Demobilization	2 months	Grader Dozer Loader		20

A pipeline construction project looks much like a moving assembly line. A large project typically is broken into manageable lengths called "spreads" and utilizes highly specialized and qualified workgroups. Each spread is composed of various crews, each with its own responsibilities. As one crew completes its work, the next crew would move into position to complete its piece of the construction process. In urban areas each spread may be up to 2 miles in length, with the front-end managing traffic, posting no-parking notices, and saw cutting roadways and the back end restoring the trench and conducting paving and restriping.

Prior to undertaking construction activities for the proposed action, the District would secure all required permits from agencies with jurisdiction over the rights-of-way along the proposed alignment. Private right-of-way would be secured from property owners. Construction-related permits required by local agencies would be approved and issued prior to the start of construction, including traffic control plan approval, excavation permits, third-party crossing permits, and others as necessary.

Substructures along the proposed alignment would be identified and protected in place during construction activities. A thorough substructure review would be performed during the planning process for all known substructures and proposed future substructures from both private and public sources. Substructures identified would be accurately shown on the construction drawings from the substructure drawings and maps provided by each owner. The proposed pipelines would be designed to provide adequate horizontal and vertical separation for construction and future operation and maintenance of the existing substructure and new pipeline.

Installation would occur within existing asphalt roads using trenchless and open trench methods. A typical trench would be 24 inches to 30 inches wide and 48 inches deep. The total required construction width could be up to 25 feet within urbanized areas/paved roadways. The ditch would be excavated using backhoes, trenching machines, and excavators. An exception to the mechanical excavation would be hand digging to locate buried utilities, such as other pipelines, cables, water mains, and sewers.

Spoils from excavations, including those from street excavations, would typically be used as backfill materials at the site of origin. Where feasible, excess spoil material along unpaved right-of-way areas in open lands would be spread along the right-of-way. When used for backfill, spoils from the trenches within paved roadways would be

hauled to previously disturbed sites for temporary storage and screening, if required, to remove any large rocks or debris and then returned to the trench for backfilling. Spoil material that is unsuitable for backfill use and economically unusable for other purposes would be disposed of in available landfills in accordance with local requirements. Any contaminated soil or waste encountered during trenching would be assessed and then removed and disposed of in the nearest available licensed landfills in accordance with applicable regulations.

Pipe-stringing trucks would be used to transport the pipe, mostly in 18–foot to 20–foot lengths, from the shipment point or a pipe storage yard to the construction sites. Where sufficient room exists, trucks would carry the pipe along the right-of-way and side boom tractors would unload the joints of pipe from the stringing trucks and lay them end to end beside the ditch line for future line-up and (for HDPE and steel pipes) welding. Pipeline fittings would be used when pipe bends are not feasible.

2.6.2.1 Pipeline Crossings

Outlined below are the potential construction techniques that may be required in areas where the proposed alignment would extend over, under, or around riparian areas, culturally sensitive areas, or existing facilities (freeways, roads, railroad tracks, etc.) along the pipeline alignment. Table 4 provides information on the estimated number of crossings that would be required for installation of the pipeline.

Table 4. Known Pipeline Crossings

Crossing ID	Segment	Location	Type of Installation	Crossing Feature
1	A	UPRR Tracks near 20th Street	Casing Bore	UPRR Tracks
2	F	River Road at Salinas River	Bridge Crossing	Salinas River
3	H	North of driveway to Pretty-Smith Vineyards and Winery at River Road	Horizontal Directional Drilling	Ephemeral Creek
4	H	South of driveway to Pretty-Smith Vineyards and Winery at River Road	Horizontal Directional Drilling	Ephemeral Creek
5	H	North of Mission Lane at River Road	Horizontal Directional Drilling	Ephemeral Creek
6	I	Martinez Drive at River Road	Horizontal Directional Drilling	Ephemeral Creek

Note: UPRR = Union Pacific Railroad.

Directional Drilled Crossings

Horizontal directional drilling (HDD), is a minimal impact trenchless method of installing underground pipelines using a surface based drilling rig. HDD is generally accomplished in three phases.

1. A small diameter pilot hole is drilled along the proposed pipe path from one surface point to another.
2. The pilot hole is enlarged to a diameter suitable for the desired pipe.
3. The pipe is pulled into the enlarged hole and is only exposed at the two endpoints. Depending on soil and pipe diameter, steps 2 and 3 can be combined into one operation.

HDD can be used to cross any number of surface obstacles including roadways, railroads, wetlands, and water bodies of varying sizes/depths. Sufficient room is required to fabricate the full pipeline prior to pulling it into the enlarged hole. Drilling fluid is used to stabilize the borehole and lubricate passage of the pipe. The drilling fluid is used to provide the desired effects without spilling to the surface. Some drilling fluid will be captured at the entrance and exit locations, where it will be cleaned up and disposed of.

Horizontal directional drills typically require a shallow entry and exit pit for each bore. These pits are approximately 5 feet to 10 feet wide, up to 20 feet long, and 10 feet deep. The work area is usually about 200 feet by 100 feet for the entry pit and 50 feet by 100 feet for the exit pit. Spoils from the excavation would be placed alongside the pits. Spoils would be used as backfill, and handling or use of wet spoils would be in accordance with Stormwater Pollution Prevention Plan (SWPPP) and best management practices (BMPs) adopted to protect stormwater quality.

Bored Crossings

There would be bored crossings under railroad rights-of-way, drainages, and some roadways depending on final design and on county and state planning review. Either a cased bore or a slick bore technique may be used for the bored crossings. In both techniques, a pit is excavated on each side of the facility to be crossed. These pits are typically 10 to 15 feet wide and up to 50 feet long, and depth is dependent on alignment and can range from 5 to 20 feet. The work area typically required is approximately 100 feet by 50 feet for the entry pit and 50 feet by 50 feet for the exit pit. Depth of the pits would depend on final pipeline depth. The method of installation would involve a horizontal boring machine with augers placed within the casing pipe as it is pushed into the opening made by the boring machine. Casing sections would be welded and inspected in the pit prior to boring. The carrier pipe would be inserted into the casing pipe after the casing is completed. For a slick bore, the method of installation would involve use of the carrier pipe as temporary casing as it is pushed into the opening made by the boring machine.

Bridge Crossings

One bridge crossing is anticipated at the Salinas River. The bridge was designed to accommodate the weight of a new reclaimed pipeline, so no bridge upgrades or modifications are required to implement the project. The pipeline would be installed between the bridge girders and would typically be situated on rollers connected to steel braces that would be attached to the bridge girders. The rollers would be used to aid in the installation of the pipeline and would hold the pipeline in place after installation. Review of the original bridge drawings and preliminary engineering indicates that supporting the pipelines from the existing box girder bridge, where the pipeline would be inside the bridge, and providing the necessary reinforcement to each bridge would be feasible. Plans for individual bridge crossings would take place in the detailed engineering and design phase of the proposed action.

Major Street Crossings

Major streets often contain belowground infrastructure. Thus, where the proposed pipeline would cross major streets, boring may be required to allow the pipeline to pass under or across the street. The use of boring for street crossings would be determined during final design and review with permitting agencies (see Bored Crossings, above).

2.6.2.2 Staging Areas

Staging areas for equipment and grading spoils would be located outside of the 50-foot setback from any water features and within the road right-of-way to the extent feasible. Staging areas along both pipeline routes would be required for trench soil stockpiling and processing, equipment staging, and material transfer. An approximately

200-foot by 250-foot construction work area would be required for parking, laydown, and staging. The District has access to vacant property that will be used for this purpose.

2.6.3 Erosion Control and Sediment

Erosion and sediment control would be conducted in accordance with industry BMPs and a SWPPP that would be filed with the RWQCB. BMPs may include such measures as the following:

- Consider the degree to which pollutants may be exposed to and mobilized by contact with stormwater.
- Consider the direct and indirect pathways that pollutants may be exposed to stormwater.
- Confirm retention of visual observation/inspection records.
- Confirm effectiveness of existing BMPs to reduce or prevent pollutants in stormwater discharges.
- Preserve existing vegetation where required and when feasible.
- Apply temporary erosion control, straw rolls, and silt fences to active and non-active areas as described by the California Storm Water BMPs Handbook – Construction and Industry BMPs. Maintain as necessary to retain effectiveness.
- Implement temporary erosion control measures at regular intervals to achieve and maintain disturbed soil.
- Stabilize (e.g., by using hydroseeding, straw, mulch) non-active areas as soon as feasible after the cessation of construction activities.
- Control erosion in concentrated flow paths by applying erosion control blankets and lining swales.
- At the completion of construction, apply permanent erosion control to all remaining disturbed soil areas as needed.

2.7 Operations and Maintenance

Operation of the proposed action would occur 24 hours a day, 7 days a week, 365 days a year. Workers would be on-site in rotating 8-hour shifts. A total of 5 employees would be required to staff the plant. Only security lighting would be provided, otherwise all lighting would be interior to the buildings.

The pipelines associated with the proposed action would be inspected, maintained, and repaired following completion of construction in accordance with regulatory requirements and in a manner consistent with good maintenance and repair practices. This would involve both routine preventative maintenance and emergency procedures to maintain service continuity.

The WWTF and reclaimed water pipe system are designed with a 50-year operational life span; however, with routine maintenance, the operational life span may be longer.

2.8 Conservation Measures

The measures presented as follows have been incorporated into the proposed action to offset potential effects to listed species.

2.8.1 Avoidance and Minimization Measures

Conservation measures associated with the proposed action that will ensure avoidance/minimization of the potential for adverse affects on the covered species are organized into those measures that would benefit some or all of the covered species, and those that are species specific. These include relevant mitigation measures identified in the Draft Initial Study/Mitigated Negative Declaration (IS/MND) as applicable to the covered species, and additional measures proposed as part of this BA. Note that the IS/MND measure "San Joaquin Kit Fox Protection Measures" is included as benefitting some or all covered species, because it would provide benefits to other covered species, such as to California condor through speed limits and the removal of trash from the site.

2.8.1.1 Measures Benefitting Some or All Covered Species

Biological Monitoring. Prior to initiation of any construction activities, the applicant shall contract with a qualified biologist to monitor construction activities. The biologists' qualifications shall be submitted to the County Planning and Building Department for approval. The biological monitor shall be present during initial ground disturbances within the existing WWTF, the proposed expansion area, or along the proposed pipeline within 100 feet of the Salinas River crossing. After completion of initial ground disturbances, the biological monitor shall conduct site inspections at least once per week to ensure that all prescribed avoidance and minimization measures are being fully implemented.

Worker Environmental Awareness Program (WEAP). Prior to initiation of construction activities (including staging and mobilization), all personnel associated with project construction shall attend WEAP training, conducted by a County-approved biologist, to aid workers in recognizing special-status resources that may occur in the project area. The specifics of this program shall include identification of the sensitive species and 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 shall also be prepared for distribution to all contractors, their employers, and other personnel involved with construction of the project. All employees shall sign a form provided by the trainer indicating they have attended the WEAP and understand the information presented to them. The form shall be submitted to the County to document compliance.

Additional Construction Measures. The applicant shall implement several additional construction-related measures protecting biological resources, as outlined in the San Miguel Community Plan:

- All vehicle maintenance/fueling/staging shall occur not less than 100 feet from any riparian habitat or water body. Suitable containment procedures shall be implemented to prevent spills. A minimum of one spill kit shall be available at each work location near riparian habitat or water bodies.
- At the end of each work day, excavations shall be secured with a cover or a ramp provided to prevent wildlife entrapment.
- All trenches, pipes, culverts or similar structures shall be inspected for animals prior to burying, capping, moving, or filling.
- If at any time during construction of the project an Endangered/Threatened species enters the construction site or otherwise may be impacted by the project, all project activities shall cease. A California Department of Fish and Wildlife (CDFW)/U.S. Fish and Wildlife Service (USFWS) approved biologist shall document the occurrence and consult with the CDFW and/or USFWS as appropriate.

San Joaquin Kit Fox Protection Measures during Construction. Regardless of whether San Joaquin kit foxes are identified during surveys, to ensure impacts to San Joaquin kit foxes are minimized and avoided, the applicant shall implement the following measures outlined in *Standardized* Recommendations *for the Protection of the Endangered San Joaquin Kit Fox Prior to and During Ground Disturbance* (USFWS 2011):

- Project-related vehicles should observe a daytime speed limit of 20 mph throughout the site in all project areas, except on county roads and state and federal highways.
- To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2 feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen fill or wooden planks shall be installed. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals.
- All construction pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.
- All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of daily in securely closed containers and removed at least once a week from the construction site.
- No firearms shall be allowed on the project site.
- No pets, such as dogs or cats, shall be permitted on the project site.
- Use of rodenticides and herbicides in project areas shall be restricted.
- A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured, or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to USFWS.
- An employee education program should be conducted for this project if subsequent to surveys there are anticipated impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and agency personnel involved in the project. The program should include the following: a description of the San Joaquin kit fox and its habitat needs, a report of the occurrence of kit fox in the project area, an explanation of the status of the species and its protection under the Endangered Species Act, and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.
- In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape or USFWS should be contacted for guidance.
- Any contractor, employee, or military or agency personnel who is responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the California Department of Fish and Wildlife immediately in the case of a dead, injured or entrapped kit fox.
- The Sacramento Fish and Wildlife Office and California Department of Fish and Wildlife shall be notified in writing within 3 working days of the accidental death or injury to a San Joaquin kit fox during project related

activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information.

- New sightings of kit fox shall be reported to the California Natural Diversity Database. A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the USFWS at:

  Endangered Species Division
  2800 Cottage Way, Suite W2605
  Sacramento, California 95825-1846
  916.414.6620 or 916.414.6600

2.8.1.2 Measures Benefitting Steelhead

Stormwater Quality. Prior to issuance of grading permits, the San Miguel Community Services District or their contractor shall prepare a Stormwater Management Plan in accordance with the Central Coast Regional Water Quality Control Board Post-Construction Stormwater Management Requirements for Development Projects in the Central Coast Region (RWQCB 2013). The Stormwater Management Plan shall demonstrate that post-construction Low Impact Development (LID) Best Management Practices (BMPs) are incorporated into the proposed project design and that these features are designed to effectively retain runoff generated by the 85th percentile, 24-hour storm event, as determined by local rainfall data. The LID BMPs shall also be designed to effectively reduce and/or eliminate water pollution caused by runoff flowing from the developed site. The post-construction LID retention BMPs (harvesting and use, infiltration, and evapotranspiration) shall be used unless it can be demonstrated that those BMPs are infeasible. The project shall follow the LID hierarchy of infiltration, harvest and use, evapotranspiration, biofiltration, and non-retention-based treatment systems. These LID features shall be sized and designed in accordance with the specifications outlined in the Post-Construction Stormwater Management Requirements document.

Runoff Retention. Prior to issuance of grading permits, the San Miguel Community Services District or their contractor shall design the project to meet the runoff retention requirements of the Central Coast Regional Water Quality Control Board Post-Construction Stormwater Management Requirements for Development Projects in the Central Coast Region (RWQCB 2013). The project shall be designed to prevent off-site discharge from events up to the 95th percentile 24-hour rainfall event, as determined from local rainfall data. Compliance shall be achieved by optimizing infiltration. If infiltration is infeasible or cannot achieve full compliance, the remaining runoff amount shall be retained on site via storage, rainwater harvesting, and/or evapotranspiration. Runoff retention specifications shall be sized and designed in accordance with the specifications outlined in the Post-Construction Stormwater Management Requirements document.

2.8.1.3 Measures Benefitting San Joaquin Kit Fox

Pre-Construction San Joaquin Kit Fox Survey and Kit Fox Avoidance. Prior to initiation of construction activities, a qualified biologist shall conduct a survey for San Joaquin kit fox dens and sign in suitable habitats within 200 feet of the expansion and the proposed water pipeline alignment. Suitable habitats include native and non-native grasslands and associated scrub, oak savannah adjacent to grasslands, lands that are dryland farmed, and ruderal lands associated with the above-described habitats. The pedestrian survey shall include parallel transects that provide full visual coverage of the survey area, with transects spaced between 30 and 100 feet, depending on vegetation height and density. Dens identified during the survey shall be avoided in accordance with the Standardized Recommendations and for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground

Disturbance (USFWS 2011). If any potential San Joaquin kit fox dens are identified during the survey, a 50-foot no disturbance buffer shall be established and marked with flagged stakes. If a known den, one confirmed to be currently or previously occupied by a San Joaquin kit fox, is identified during surveys, a 100-foot no disturbance buffer shall be established and marked with flagged stakes. If a natal/pupping den is identified, the qualified biologist shall contact the U.S. Fish and Wildlife Service (USFWS). Definitions for "potential," "known," and "natal" dens are included in Appendix II of the San Joaquin Kit Fox Survey Protocol for the Northern Range (USFWS 1999). If it is not feasible to avoid a potential den, measures may be implemented to monitor the den to determine whether it is occupied. Dens must be monitored for a minimum of 3 days using tracking medium or motion-sensor camera to determine whether it is occupied. If kit fox is not detected, the den may be excavated using hand tools, and the no-disturbance buffer may be removed. If a den is determined to be occupied, kit fox may not be excluded, the den may not be excavated and backfilled, and a minimum 100-foot no disturbance buffer must remain in place.

See Section 2.8.1.1 for **San Joaquin Kit Fox Protection Measures during Construction.**

2.8.1.4 Measures Benefitting California Condor

Other than protection measures described in Section 2.8.1.1 (biological monitoring, preparation of a WEAP, notifying USFWS and CDFW of the presence of endangered species, and San Joaquin Kit Fox Protection Measures, specifically, speed limits and trash removal), no measures are necessary to ensure avoidance of take of California condor.

2.8.1.5 Measures Benefitting Least Bell's Vireo

Least Bell's Vireo Protocol Surveys. Prior to issuance of a construction permit for any project component requiring construction activities within 800 feet of riparian vegetation associated with the Salinas River, a qualified ornithologist shall conduct surveys for least Bell's vireo in accordance with the Least Bell's Vireo Survey Guidelines (USFWS 2001). The surveys should be conducted during the appropriate season and in accordance with all requirements of the protocol. If through consultation with the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS), it is determined that protocol surveys are not required, said consultation shall be documented prior to issuance of any construction permits. If surveys are required, and least Bell's vireos are detected during the surveys, the applicant shall consult further with USFWS and CDFW to determine appropriate measures to avoid impacts to least Bell's vireo. Upon completion of the project, the biological monitor shall prepare a Final Compliance Report documenting all compliance activities implemented for the project, including the pre-construction survey results. The report shall be submitted to the County within 30 days of completion of the project.

Pre-Construction Nesting Bird Survey and Nest Avoidance. For construction activities occurring during the nesting season (generally February 1 to September 15), surveys for nesting birds covered by the California Fish and Game Code and the Migratory Bird Treaty Act shall be conducted by a County-approved biologist no more than 14 days prior to vegetation removal. Prior to the surveys, the survey scope and the name, qualifications, and contact information for the surveying biologist must be submitted to the County Planning and Development Department. Surveys shall be conducted during the time when birds are active and shall be sufficient to reliably conclude presence/absence. The surveys shall include the entire project disturbance area plus a 500-foot buffer around the site. If active nests are located, all construction work shall be conducted outside a buffer zone from the nest to be determined by the qualified biologist. The buffer shall be a minimum of 50 feet for non-raptor bird species and at least 300 feet for raptor species. Larger buffers may be required depending upon the status of the nest and the construction activities occurring in the vicinity of the nest. The buffer area(s) shall be closed to all construction

personnel and equipment until the adults and young are no longer reliant on the nest site. A County-approved biologist shall confirm that breeding/nesting is completed and young have fledged prior to removal of the buffer. The results of the pre-construction survey shall be submitted to the County prior to construction, and construction shall not commence without authorization from the County.

Least Bell's Vireo Additional Measures. If one or more least Bell's vireo is detected during protocol least Bell's vireo surveys, no work shall be conducted within 500 feet of an active least Bell's vireo nest, or within 500 feet of any territorial least Bell's vireo. In addition, if least Bell's vireos are detected, no riparian vegetation shall be removed due to project activities without re-initiation of consultation with USFWS with regard to effects on least Bell's vireo.

2.8.2 Compensatory Mitigation

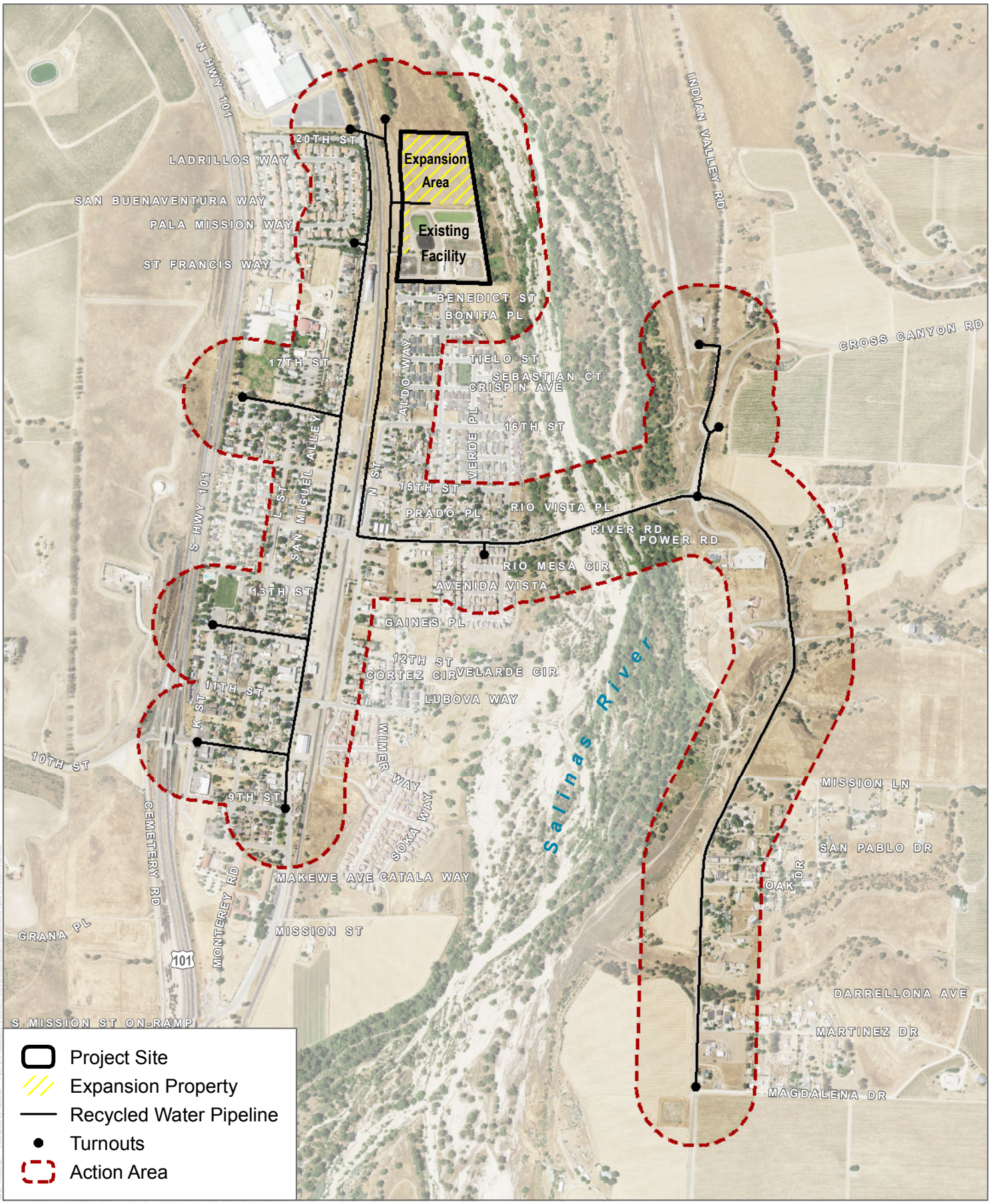
The following measure is designed to describe the minimum expected compensatory mitigation for loss of habitat for San Joaquin kit fox. The County of San Luis Obispo has developed San Joaquin kit fox compensatory mitigation requirements in coordination with USFWS and CDFW, and the San Miguel Community Plan (County 2016b) includes recommended mitigation ratios by location within the Plan Area. The County also provides for an applicant to seek a reduction of the mitigation ratio, based on the applicant's habitat evaluation. The applicant is seeking a reduction in the ratio designated for loss of habitat in the proposed expansion area, but the County, in coordination with CDFW and USFWS, will determine whether the applicant's proposed ratio is sufficient.

San Joaquin Kit Fox Compensatory Habitat Mitigation. The applicant shall mitigate for the loss of San Joaquin kit fox habitat in the proposed expansion area in accordance with the San Miguel Community Plan and in coordination with the County of San Luis Obispo. The applicant shall mitigate for the loss of any non-native grassland, agricultural, or disturbed lands in the proposed expansion area at a minimum ratio of 2:1 and as agreed upon through County coordination.

2.9 Description of the Action Area

The extent of the Action Area was determined based on the extent of project activities, the nature of construction-related project activities, and the sensitivity of potentially occurring listed species. The Action Area therefore includes the existing WWTF, the proposed expansion area north of the WWTF, the proposed pipeline route, and a 500-foot buffer around all of the project activities in which indirect effects from construction, such as noise and ground vibration, could potentially occur to listed species (Figure 3, Action Area). Standardized construction measures for the San Joaquin kit fox (USFWS 2011) include exclusion zones of up to only 100 feet for known and potential dens adjacent to construction sites, and USFWS recommends that survey for kit fox dens extend to 200 feet beyond project activities. Nesting least Bell's vireos may be susceptible to indirect effects such as noise at a greater distance than this, however. So, the Action Area includes all areas within 500 feet of project activities, to ensure that potential effects to nesting least Bell's vireos are considered in the analysis. The 500-foot buffer of project activities has been applied more generally, to areas other than least Bell's vireo habitat, to further ensure that potential take of San Joaquin kit fox is addressed. The Action Area does not extend downstream along the Salinas River or within any of several ephemeral streams crossed by the proposed pipeline. No direct or indirect impacts are expected during construction within any of these streams, and therefore no water quality effects are expected that would affect listed species downstream. Development within the proposed expansion area would result in little new hardscape that would contribute to long-term changes in stormwater runoff, erosion, or other water quality or hydrological effects within the Salinas River. The installed pipeline would occur within existing road alignments, including existing berms with culverts over the ephemeral streams.

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SOURCE: USGS National Map

0 500 1,000 Feet

DUDEK

FIGURE 3

Action Area

SAN MIGUEL WASTEWATER TREATMENT PLANT UPGRADE/EXPANSION BIOLOGICAL ASSESSMENT

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3 Species Considered

3.1 Listed Species Potentially Affected

A query of the USFWS Information for Planning and Consultation (IPAC) website generated a list of 13 federally listed species that occur in the Action Area region, including four plant species and nine wildlife species (USFWS 2021a). The California Natural Diversity Database (CNDDB; CDFW 2021a) was queried for occurrences of these species in the project region. Of these, three potentially occur in the Action Area vicinity, and may be subject to effects from the proposed action: San Joaquin kit fox, California condor, and least Bell's vireo. In addition, critical habitat for steelhead (*Oncorhynchus mykiss irideus*) of the south-central California coast distinct population segment (DPS) occurs along the entire upper Salinas River, including within the Action Area. Additional species not expected to occur in the Action Area vicinity, and which would not be subject to effects of the Action, are discussed in Section 3.2.

3.1.1 Steelhead, South-Central California Coast DPS

3.1.1.1 Status

South-central California coast steelhead is a distinct population segment (population 9) of steelhead. It was listed as a threatened "evolutionarily significant unit" (ESU) in 1997 under the federal Endangered Species Act (ESA) (62 FR 43937). The National Marine Fisheries Service (NMFS) initiated a status update of all steelhead ESUs in 2004, and in 2006 issued a final listing rule determining that the boundaries of each of the previously determined ESUs, including that for the south-central California coast steelhead, were appropriate boundaries for a DPS, and therefore confirmed this population as a threatened DPS (71 FR 833–862). NMFS designated critical habitat for the south-central California coast DPS in 2006.

3.1.1.2 Distribution

The south-central California coast DPS extends from southern Santa Clara and Santa Cruz counties southward to southern San Luis Obispo County. Among watersheds included in the DPS are the Pajaro/San Benito River; the Carmel River; the Salinas River, including the San Antonio and Nacimiento rivers, and the Estrella River and San Juan Creek; and Chorro Creek and Arroyo Grande Creek in San Luis Obispo County. Historical spawning areas included Pacheco Creek in southern Santa Clara County, several tributaries of the Pajaro River in southern Santa Clara and Santa Cruz counties, various coastal streams from northern Monterey County south to Arroyo Grande Creek in San Luis Obispo County, the San Antonio and Nacimiento rivers in southern Monterey and northern San Luis Obispo counites, and several Salinas River tributaries in the upper (southernmost) part of the watershed (NMFS 2013).

3.1.1.3 Life History

South-central California coast steelhead has an anadromous life history, with adults spending most of their lives in saltwater in the ocean and migrating up freshwater streams for spawning. Young steelhead rear in freshwater streams for one to three years before migrating to the ocean, where they spend one to four additional years maturing, before returning to fresh water to spawn (NMFS 2013). Migration and life history patterns depend on rainfall and streamflow, and the timing of out-migration may also depend on photoperiod, temperature, and the

breaching of the sandbar blocking access to the ocean. Downstream migration of juveniles usually occurs between March and June (Shapovalov and Taft 1954). In some watersheds, juvenile steelhead may rear in a coastal lagoon or estuary for weeks or months before out-migrating. Out-migration usually occurs from late winter to spring. When returning to streams to spawn, adult steelhead congregate in the Pacific Ocean off the mouth of the stream and migrate upstream after the sandbar is breached (Shapovalov and Taft 1954) from seasonal tidal influences and/or when triggered by rising streamflows from storm events (Moyle 2002).

In streams, steelhead prefer habitat consisting of relatively cool, well-oxygenated water with adequate depth and cover. Temperature tolerances and preferences of steelhead vary between life stages. Eggs tend to experience mortality at temperatures in excess of 55°F (13.3°C) (McEwan and Jackson 1996). At temperatures greater than 70°F (21.1°C), steelhead appear to have difficulty obtaining sufficient oxygen from the water (McEwan and Jackson 1996). However, Carpanzano (1996) found trout living in Sespe Creek, Ventura County, California, with a water temperature of 82.4°F (28°C). Cover in the way of gravel, cobble, boulder, undercut banks, large and small woody debris, and overhanging vegetation is important for survival.

Steelhead require relatively clean, unconsolidated gravel and cobble for spawning. Females excavate oval nests and lay their eggs while one or more attending males fertilize the eggs as they fall among the gravel. Unlike other Pacific salmonid species, steelhead can survive the spawning activity and return to reproduce multiple times. The eggs hatch within 3 to 4 weeks, but the alevins (yolk-sac fry) cannot swim since they still have a large yolk attached. The alevins remain in the gravel for 2 additional weeks and then emerge from the gravel when their yolk is used up. At this point, the alevins become free-swimming juveniles. The juveniles spend 1 to 2 years in freshwater and reach 5 to 10 inches in length before attempting to leave for the ocean (Moyle 2002).

Steelhead in the ocean feed on a variety of pelagic organisms, primarily anchovies and crustaceans. In streams, they overwhelmingly feed on aquatic insects in both the benthos and stream drift. They also consume non-insects, like amphipods, isopods, oligochaete worms, and terrestrial insects that fall into the stream, if available. Larger fish in freshwater streams will also take fish, such as prickly sculpin (*Cottus asper*), tidewater gobies (*Eucyclogobius newberryi*), and small minnows and suckers. Larger juveniles in lagoons will feed on mysid shrimp, amphipods, and small minnows and suckers. Larger juveniles in lagoons will feed on mysid shrimp, amphipods, and isopods in addition to a smaller variety of insects available in lagoons (Moyle 2002).

In streams, steelhead prefer habitat consisting of relatively cool, well-oxygenated water with adequate depth and cover. Temperature tolerances and preferences of steelhead vary between life stages. Eggs tend to experience mortality at temperatures in excess of 55°F (13.3°C) (McEwan and Jackson 1996). At temperatures greater than 70°F (21.1°C), steelhead appear to have difficulty obtaining sufficient oxygen from the water (McEwan and Jackson 1996). However, Carpanzano (1996) found trout living in Sespe Creek with a water temperature of 82.4°F (28°C). Cover in the way of gravel, cobble, boulder, undercut banks, large and small woody debris, and overhanging vegetation is important for survival.

3.1.2 San Joaquin Kit Fox

3.1.2.1 Status

The San Joaquin kit fox is a subspecies of the kit fox (*V. macrotis*), the smallest member of the canid family in North America. It was listed as endangered in 1967 under the federal Endangered Species Act (ESA) (32 FR 4001). On June 24, 1992, USFWS issued a 90-day finding on a petition to delist San Joaquin kit fox, stating that the petition

did not present substantial scientific information to indicate that delisting was warranted (57 FR 28167–28169). No critical habitat has been designated for San Joaquin kit fox.

3.1.2.2 Distribution

Historically, San Joaquin kit fox inhabited most of the San Joaquin Valley from southern Kern County north to eastern Contra Costa County and eastern Stanislaus County, as well as smaller adjacent valleys on the west side of the San Joaquin Valley. It was believed that by 1930 the San Joaquin kit fox range had been reduced by more than half, with the largest remaining portion being in the western and southern portions of the San Joaquin Valley. Currently, San Joaquin kit fox populations consist of several core areas and several satellite subpopulations distributed around the species' range. The core areas are located in western Kern County, the Carrizo Plain of eastern San Luis Obispo County, and the Ciervo–Panoche area (USFWS 2020b). The latter core area is located mostly in western Fresno and eastern San Benito counties, and extends into western Merced County (USFWS 2020b). At the time of that species' Recovery Plan was prepared in 1998, San Joaquin kit fox occurred westward into the interior coast ranges in parts of central California, including in the Salinas Valley (USFWS 1998a). By 2010, some satellite populations, including those at Camp Roberts near the action area, Fort Hunter-Liggett in Monterey County, central Merced County, and western Madera County, had apparently been extirpated (USFWS 2010). The recent USFWS (2020b) *Status Species Assessment Report* found that, while San Joaquin kit fox habitat remained in the Salinas Valley, "there is no current documented evidence" that kit foxes occupy this area, and the species no longer occurs at Fort Hunter-Liggett."

3.1.2.3 Life History

Suitable San Joaquin kit fox natural habitats are necessary for denning, foraging, and dispersal. Kit foxes occur in well-drained arid lands with scattered shrubby vegetation underlain by loose-textured sandy soils suitable for burrowing and supporting primary prey (e.g., kangaroo rats). Occupied communities and land covers include valley sink scrub, valley saltbush scrub, upper Sonoran subshrub scrub, annual grassland, grazed grasslands, petroleum fields, and urban areas in the southern portion of their range; valley sink scrub, interior coast range saltbush scrub, upper Sonoran subshrub scrub, annual grassland, and the remaining native grasslands in the central portion of their range; and annual grassland and valley oak woodland in the northern part of their range (USFWS 1998a). SJKF prefer areas with slopes of less than 5%, and natal denning appears to be limited to slopes of 10% or less. However, San Joaquin kit foxes will use steeper slopes for foraging and dispersal (USFWS 2020b). Highly suitable habitats in the San Joaquin Valley and surrounding hills have been fragmented and modified by oil exploration and extraction, renewable energy development, and agricultural activities including row crop cultivation, irrigated pasture, orchards, and vineyards. Conversion of land to agriculture has long been considered a major threat to San Joaquin kit fox. While the species sometimes uses dry-farmed areas, it is believed to avoid irrigated lands (USFWS 2020b). Warrick et al. (2007) observed kit foxes using agriculture in intensively farmed areas, particularly orchards, at night, but these foxes used the few natural areas disproportionately to their availability, did not occupy agriculture during the day, and did not use agriculture for long periods. While some relatively large areas of "medium" habitat, such as alkali sink scrublands and grasslands dominated by wild oats, occur in several places around the fringes of the San Joaquin Valley, these areas do not tend to support consistent San Joaquin kit fox presence unless mixed with highly suitable habitat areas (Cypher et al. 2013).

San Joaquin kit foxes are active year-round and are primarily nocturnal. Their diet varies geographically, seasonally, and annually. Prey species include deer mice (*Peromyscus* spp.), kangaroo rats (*Dipodomys* spp.), black-tailed

jackrabbits (*Lepus californicus*), ground-nesting birds, and Nelson's antelope squirrels (*Ammospermophilus nelsoni*) (USFWS 1998a), although the Action Area is outside the range of the latter species.

San Joaquin kit fox dens are important life history components and are used year-round. Dens are used to bear and rear young, escape predators, avoid extreme temperatures, and conserve water, and they serve as daytime resting sites (Cypher et al. 2012). One kit fox may use several dens, particularly during the summer months, when females may change natal and pupping dens one or two times per month. San Joaquin kit foxes construct their own dens, but they can also enlarge or modify burrows constructed by other animals, such as California ground squirrels, American badgers (*Taxidea taxus*), and coyotes (*Canis latrans*) (USFWS 1998a). They also den in human-made structures such as culverts, abandoned pipes, and banks in roadbeds. Most dens, especially natal and pupping dens, have at least two entrances. Females begin excavating natal dens in September and October, and mating and conception begin in December. Litters of two to six pups are born in late February and March, and pups first emerge from the natal den at about 4 weeks (USFWS 2020b). SJKF litters are born between February and late March and consist of two to six pups. After 4 to 5 months, usually in August or September, the young begin dispersing (USFWS 1998a). Similar to other predators, the reproductive success of San Joaquin kit fox is related to the abundance of their prey. Decreases in prey abundance caused by circumstances such as drought and too much rainfall result in decreases in reproductive success. Both adults play active roles in raising pups (Moonjian 2007). Males do most of the hunting, initially, while lactating females remain in the den. Pups remain under the care of adults for 4 to 5 months, before beginning to disperse from their natal area. Dispersal begins as early as July and continues through August and September (Moonjian 2007).

Habitat fragmentation, degradation, and loss are the primary threats to San Joaquin kit fox (Cypher et al. 2013; USFWS 2020a). The ability to disperse between populations and satellite populations is critical for species survival. Agricultural conversion was historically the greatest contributor to these threats. While the loss of habitat to agricultural conversion has slowed, agricultural and urban extension into foothills continues to put pressure on San Joaquin kit fox movement corridors. Other sources of habitat loss, degradation, and fragmentation are oil extraction and mining activities, construction of solar facilities, construction of infrastructures such as roads and rail, and urban development (USFWS 2020a). Other threats to San Joaquin kit fox include predation by coyotes (*Canis latrans*) and foxes, pesticides and rodenticides, disease including sarcoptic mange (*Sarcoptes scabei*), vehicle strikes, and affects from climate change (USFWS 2020a).

No critical habitat has been designated for San Joaquin kit fox.

3.1.3 California Condor

3.1.3.1 Status

The USFWS listed the California condor as endangered in 1967 (32 FR 4001) under the Endangered Species Preservation Act of 1966, a precursor to the ESA.

3.1.3.2 Distribution

The California condor, the largest of the New World vultures occurring in North America, inhabits hilly and mountainous regions with cliff sites for nesting (they occasionally also nest in very large trees), and adequate numbers of large mammals such as deer and livestock to provide carrion food sources. Paleontological evidence of the California condor shows that the species was common throughout North America from at least the late

Pleistocene (40,000 years before present) (Finkelstein et al. 2020). The California condor historically occurred in northern Baja California, northern California, and the Pacific Northwest in the early 19th century (Finkelstein et al. 2020). The California condor is largely confined to the semi-arid, rugged mountain ranges surrounding the southern San Joaquin Valley, including the Coast Ranges. Elevations of recent nest sites varied from about 600 to 1,830 meters (1,969 to 6,004 feet) amsl.

Condor populations were apparently in decline at the time of European contact in North America (ca. 400 years ago) (Snyder and Snyder 2000). From the early 1900s, the California condor population declined precipitously. By the late 1970s the population had declined to approximately 30 (Wilbur 1980). Snyder and Johnson (1985) documented declines to 21 individuals in 1982, 19 individuals in 1983, 15 individuals in 1984, and 9 individuals in 1985. The last wild California condors were captured on April 19, 1987. Following captive breeding to recover the population, reintroductions began in 1992 in Santa Barbara County. Subsequent releases have been in suitable habitat in the Sespe Wilderness in Ventura County, the Ventana Wilderness in Monterey County, Pinnacles National Park in San Benito County, the Grand Canyon in Arizona, and Baja California, Mexico. As of April 2020, there were approximately 504 California condors in the world population, including 175 in captivity and 329 in the wild (USFWS 2021b). The wild population in 2020 included 160 condors in central and southern California, nearly in Arizona and Utah, and more than 30 in Baja California, Mexico.

3.1.3.3 Life History

Condor nest sites are mostly in a variety of rock formations providing shelter, such as cliff crevices, overhung ledges, and potholes. Rarely, nests may be in giant sequoias (*Sequoiadendron giganteum*) or redwoods (Sequoia sempervirens) with cavities or broken tops. One egg is laid per nest attempt (end of January through April) (unless a nest failure occurs; nest recycling has been documented for this species); incubation is approximately 57 days, with fledging of chicks at 5.5 to 6 months old, and independence approximately 6 months later (Snyder and Snyder 2000; Finkelstein et al. 2020).

Condors forage in varying habitats where carrion can be detected and accessed, including grasslands, oak savannas, rangelands, and pastures (USFWS 1996). Suitable foraging habitats also have reliable air movements that allow extended soaring flights. These habitats may occur in gentle topography where individuals can easily launch into flight by running downhill, or where topographic relief provides suitable uplift for extended flight (Finkelstein et al. 2020).

Condors primarily feed on mammalian carrion, although remains of reptiles and birds have been occasionally found in nests (Collins et al. 2000). California condors are scavengers of fresh, medium- to large-sized carcasses, such as sheep, cattle, deer, and elk (Koford 1953; Snyder and Snyder 2000; Collins et al. 2000).

Most condors forage within 50 to 70 kilometers (approximately 31 to 43 miles) of nesting areas, with core foraging areas ranging from around 2,500 to 2,800 square kilometers (approximately 965 to 1,080 square miles). However, as opportunistic scavengers, condors can travel up to 225 kilometers (approximately 140 miles) per day (Koford 1953; Wilbur 1978; Meretsky and Snyder 1992; Snyder and Snyder 2000). This wide-ranging foraging area appears to be an adaptation to unpredictable food supplies. Current tracking studies and visual observations of condors show that the birds tend to avoid landing in cities and areas with severe habitat loss or degradation (i.e., residential, commercial, and high-intensity agricultural areas). Condor individuals that have landed in anthropogenically altered environments (parking lots or buildings) generally were known to have had inappropriate familiarity (imprinting) with humans while in captivity prior to release.

Lead poisoning, obtained from ingestion of fragments of lead bullets left in carcasses of shot mammals, is thought to be a major cause of mortality that resulted in the decline of the California condor (USFWS 1996). Reintroduced birds also suffer from lead poisoning, which is considered to be the biggest threat to recovery of the species in the wild (Meretsky et al. 2000, 2001; Cade 2007; Hunt et al. 2007; USFWS 2013). Microtrash (including small bits of plastic, bottle caps, pop-tops, PVC pipe fragments, and broken glass) that is inadvertently fed to hatchlings by their parents, habituation to human activity and artificial structures, collisions with power lines, and shootings are other documented causes of mortality in the wild population (USFWS 2013).

Critical habitat was designated for the California condor in 1976 (41 FR 41914–41916) and was corrected in 1977 (42 FR 47840–47845). The critical habitat designation includes areas in five California counties, including the Sespe–Piru Condor Area in Ventura County, the Matilija Condor Area in Ventura and Santa Barbara counties, the Hi Mountain–Beartrap Condor Areas in San Luis Obispo County, the Mount Pinos Condor Area in Ventura and Kern counties, the Blue Ridge Condor Area in Tulare County, Tejon Ranch in Kern County, Kern County rangelands, and Tulare County rangelands. The designated critical habitat area closest to the action area is the Hi Mountain–Beartrap Condor Area, approximately 35 miles south southeast of the Action Area.

3.1.4 Least Bell's Vireo

3.1.4.1 Status

The least Bell's vireo is a subspecies of Bell's vireo (*Vireo pusillus*), a songbird species that breeds in much of the Southwest and Midwest in the United States. Least Bell's vireo was federally listed as endangered in May 1986 (51 FR 16474–16481).

3.1.4.2 Distribution

Least Bell's vireo formerly was a common and widespread summer resident below about 600 meters (2,000 feet) amsl in the western Sierra Nevada, throughout the Sacramento and San Joaquin valleys, and in the coastal valleys and foothills from Santa Clara County south (Zeiner et al. 1990). Least Bell's vireo also was common in coastal southern California from Santa Barbara County south, east of the Sierra Nevada below about 1,200 meters (4,000 feet) amsl, in the Owens and Benton valleys, along the Mojave River and other streams at the western edge of southeastern deserts, and along the entire length of the Colorado River (Grinnell and Miller 1944).

The USFWS (2006) conducted a 5-year status review of the least Bell's vireo that compiled comprehensive survey data for 5-year increments from 1977 to 2005. The least Bell's vireo breeding population in the United States had then increased about tenfold since its federal listing as endangered in 1986, from about 291 to about 2,968 known territories by 2005 (USFWS 2006). The breeding population had grown during each 5-year period since the original federal listing, although the rate of increase slowed between 1996 and 2005.

As of 2005, the two largest concentrations of least Bell's vireo territories were in the Santa Ana River (including Prado Basin) and on Camp Pendleton/Santa Margarita River. The Santa Clara River in Los Angeles and Ventura counties also supported a large concentration of territories, with 119 territories in 2001. The USFWS attributed the increase in the least Bell's vireo population to "improvements in habitat abundance and quality and effective cowbird control" (USFWS 2006).

3.1.4.3 Life History

The least Bell's vireo is a neotropical migrant that primarily occupies riverine riparian habitats that typically feature dense riparian cover within 1 to 2 meters (3 to 7 feet) of the ground and a dense, stratified canopy along water or along dry parts of intermittent streams. Riparian communities that support nesting territories include southern willow scrub, arroyo willow riparian forest, cottonwood forest, sycamore alluvial woodland, southern coast live oak riparian forest, mulefat scrub, wild blackberry, and mesquite (*Prosopis* spp.) (in desert localities). Least Bell's vireos use habitat that is limited to the immediate vicinity of watercourses below about 457 meters (1,500 feet) above mean sea level in the interior (51 FR 16474–16481).

Least Bell's vireos generally begin to arrive on their breeding grounds to establish breeding territories by mid- to late March (Garrett and Dunn 1981; Salata 1983a, 1983b). Nests are typically built within about 3.3 feet of the ground in willows, California wildrose (*Rosa californica*), mulefat (*Baccharis salicifolia*), or other understory vegetation (Franzreb 1989). The most critical structural component to least Bell's vireo nesting habitat is a dense shrub layer at 2 to 10 feet above the ground (Goldwasser 1981; Franzreb 1989). Least Bell's vireos usually produce only one brood per season, but up to four or five additional broods have also been reported (Franzreb 1989; USFWS 1998b). Fledglings may range from established breeding territories but remain under parental care for several more weeks (USFWS 1998b). Least Bell's vireos forage in a variety of tree and shrub species, and have a preference for Goodding's willow (*Salix gooddingii*), arroyo willow (*Salix lasiolepis*), and mulefat. Individuals are known to travel between 3 and 61 meters (9.8 and 200.0 feet; a mean of 15.5 meters (50.8 feet)) while foraging, with the majority of these destinations occurring within 30 meters (98 feet) of the edge of riparian vegetation (Kus and Miner 1989). A large majority of the least Bell's vireos depart their nesting areas by the third week of September.

Least Bell's vireo populations have declined in large part due to loss of suitable riparian habitat, degradation of suitable habitat, and nest parasitism by brown-headed cowbirds (USFWS 1998b), but as described above, populations had exhibited substantial recovery by 2005. Historically, urban and suburban development, agriculture uses, water projects, military training activities, fires, off-road vehicle use, flooding from dam releases, long-term camping, and the introduction of non-native plant species contributed to the loss and degradation of suitable habitat (CDFW 2021b). At the time of listing in 1986, loss of habitat due to agricultural practices, urbanization, and exotic plant invasion was identified as a major threat to vireo populations (USFWS 2006). Since the listing of least Bell's vireo, destruction and modification of riparian habitat within its current range has been curtailed significantly, primarily as a consequence of protections provided by the original listing in 1986 (51 FR 16474–16481), the subsequent designation of critical habitat in 1994 (59 FR 4845–4867), and other federal and state regulatory processes providing for protection and management of habitat (USFWS 2006). Nonetheless, agriculture and grazing continue to threaten riparian habitat within the least Bell's vireo's larger historical range, particularly in the Salinas, San Joaquin, and Sacramento valleys.

Nest predation and brood parasitism by brown-headed cowbird has greatly reduced nest success throughout most of the least Bell's vireo's breeding range and has been suggested as a primary cause for its decline throughout California. Predation and parasitism rates between 25% and 40% were reported in the listing rule, which were considered abnormally high by the USFWS at the time of the listing in 1986. Although nest predation rates on vireos can exceed 60% of the vireo nests in a given area within a year (Kus 1999), typical nest predation rates average around 30% (Franzreb 1989). Ongoing cowbird control efforts are an important factor in the rebound of the least Bell's vireo in southern California and are probably a key in managing populations, at least for the foreseeable future (e.g., Pike et al. 1996; Kus 1999).

Noise is also a potential threat least Bell's vireo during the nesting season. The impact of noise on avian species varies among species and depends on source, duration, and schedule (e.g., Hirvonen 2001; Reijnen et al. 1996; Slabbekoorn and Peet 2003; Wood and Yezerinac 2006). Hein (1997) identified the 60 A-weighted decibel (dBA) noise threshold for impacts on the least Bell's vireo based on the theory of masking. At a distance of 100 meters (328 feet), which is the diameter of a 0.8-hectare (1.98-acre) territory, approximately 50% of the least Bell's vireo's song would be masked with a background noise level of 60 dBA. This level of masking was considered to have potential adverse effects on the behavioral activity, including reproduction, of the least Bell's vireo (Hein 1997).

Critical habitat was designated for the least Bell's vireo on February 2, 1994 (59 FR 4845–4867), However, no critical habitat has been designated for this species within the Action Area, or anywhere in San Luis Obispo or Monterey counties.

3.2 Listed Species Not Present

A query of the USFWS Information for Planning and Consultation (IPAC) website generated a list of 13 federally listed species that occur in the action area region, including four plant species and nine wildlife species (USFWS 2021a). In addition, NMFS has designated critical habitat for a tenth wildlife species, south-central California coast DPS steelhead, within the Action Area. This biological assessment addresses four of the ten wildlife species as potentially subject to effects from the proposed action. The remaining species, shown in Table 5, including four plant species and six wildlife species, are considered not present in the action area, because the action area is outside the range of the species, due to no known occurrences in the area; because the Action Area does not support suitable habitat for the species; or both. The action area supports developed land covers only within the existing WWTF; regularly disked agricultural land, disturbed, and ornamental land covers in the proposed expansion area, where only a small amount of non-native grassland totaling 0.91 acres occurs; and developed and disturbed habitats within the pipeline alignment. Some riparian habitats occur within the action area, within the 500-foot buffer of project activities.

Among the four plant species in Table 5, the California Natural Diversity Database (CNDDB) includes no occurrences of California jewelflower (*Caulanthus californicus*) within 10 miles of the action area (CDFW 2021a). The developed, disturbed, and degraded habitats with the potential project impacts areas are not likely to support Santa Lucia purple amole (*Chlorogalum purpureum* var. *purpureum*). Marsh sandwort (*Arenaria paludicola*) and spreading navarretia (*Navarretia fossalis*) are not expected to occur in these habitats, or in the riparian habitat within the buffer.

Although riparian habitat that may be suitable occurs for Southwestern willow flycatcher (*Empidonax traillii extimus*) occurs within the action area, adjacent to project activities and in the Salinas River, CNDDB includes no breeding occurrences of this subspecies in either San Luis Obispo County or Monterey County (CDFW 2021a).

The action area is outside the range of blunt-nosed leopard lizard (*Gambelia sila*) and giant kangaroo rat (*Dipodomys ingens*), which occur in the San Joaquin valley and adjacent valleys, such as the Carrizon Plain, but are absent in the Salinas Valley region. It is also outside the range of California Ridgeway's rail (*Rallus obsoletus obsoletus*), which occurs in California only along the immediate cost, in saltmarsh habitat.

Vernal pool fairy shrimp (*Branchinecta lynchi*) is known from several occurrences nearby, on the west side of U.S. 101, and USFWS has designated critical habitat for the species in these areas. But no vernal pool habitat occurs within the existing WWTF, the agricultural and disturbed areas within the proposed WWTF expansion area, or along existing roadways within the pipeline route.

California red-legged frog (*Rana draytonii*) occurs along stream courses, but it has not been documented anywhere within the Salinas River in the vicinity of the Action Area, or anywhere within 10 miles of the Action Area. The nearest known occurrences are in critical habitat unit SLO-1, along the eastern boundary of San Luis Obispo County, with Kings and Kern counties. Other occurrences are well to the southwest and northwest.

Table 5. Potentially Occurring Species in the Vicinity of the Action Area

Species	Federal Status	Habitat/Range	Habitat Status/Range
Plants			
California jewelflower (*Caulanthus californicus*)	Endangered	Chenopod scrub, pinyon and juniper woodland, valley and foothill grassland in sandy soils, 200–3,280 ft elevation	**None**: Disturbed habitats not suitable; surveys negative
Marsh sandwort (*Arenaria paludicola*)	Endangered	Marshes and swamps (freshwater or brackish) in openings in sandy soils, 10–560 ft elevation	**None**: Disturbed habitats onsite not suitable; surveys negative. No potential for effects within riparian habitats.
Santa Lucia purple amole (*Chlorogalum purpureum* var. *purpureum*)	Threatened	Chaparral, cismontane woodland, valley and foothill grassland in gravelly and clay soils, 673–1,260 ft elevation	**None**: Disturbed habitats not suitable; surveys negative
Spreading navarretia (*Navarretia fossalis*)	Threatened	Chenopod scrub, marshes and swamps (assorted shallow freshwater), playas, vernal pools, 98–2,145 ft elevation.	**None**: Disturbed habitats not suitable; surveys negative
Invertebrates			
Vernal pool fairy shrimp (*Branchinecta lynchi*)	Endangered	Vernal pools, seasonally ponded areas within vernal swales, and ephemeral freshwater habitats	**None**: No potential for pooling that support this species.
Amphibians			
California red-legged frog (*Rana draytonii*)	Threatened	Lowland streams, wetlands, riparian woodlands, livestock ponds; dense, shrubby or emergent vegetation associated with deep, still or slow-moving water; uses adjacent uplands	**None**: Not known to occur in within Salinas River in Action Area vicinity.
Reptiles			
Blunt-nosed leopard lizard (*Gambelia sila*)	Endangered	Sparsely vegetated alkali and desert scrubs, including semi-arid grasslands, alkali flats, and washes	**None**: Action Area is outside species range.
Birds			
California Ridgeway's rail (*Rallus obsoletus obsoletus*)	Endangered	Coastal salt or brackish marshes	**None**: Action Area is outside species range.

Table 5. Potentially Occurring Species in the Vicinity of the Action Area

Species	Federal Status	Habitat/Range	Habitat Status/Range
Southwestern willow flycatcher	endangered	Nests in dense riparian habitats along streams, reservoirs, or wetlands; uses variety of riparian and shrubland habitats during migration.	**None**: Not known to occur in within Salinas River in Action Area vicinity.
Mammals			
Giant kangaroo rat (*Dipodomys ingens*)	Endangered	On fine sandy loam soils with sparse forb vegetation and low-density alkali desert scrub	**None**: Action Area is outside species range.

4 Environmental Setting

The WWTF is located in the Salinas Valley, at the northeastern edge of the unincorporated community of San Miguel, between the Salinas River and the Union Pacific Railroad (UPRR) in northern San Luis Obispo County, California (Figure 1). The Action Area, which also includes the proposed expansion area, the pipeline route, and a 500-foot buffer of these project areas, extends to much of the community of San Miguel and includes a portion of the Salinas River adjacent to the WWTF and adjacent to the pipeline crossing at N. River Road. The WWTF, which is entirely fenced, includes several existing structures, lined and unlined ponds used in the treatment process, unpaved roads, berms around the ponds and other maintained areas, and minimal ornamental vegetation. The expansion area is located immediately north of the WWTF and is largely disked and maintained. The Salinas River, which includes extensive riparian vegetation and aquatic habitat within the river channel, is immediately east of the WWTF. The proposed pipeline route originates at the northwest corner of the WWTF. An eastern section extends southward from the WWTF vicinity, along the Union Pacific Railroad (UPRR), and extends to the east across the Salinas River, at N. River Road. The eastern pipeline continues east and south along N. River Road for approximately 1.0 mile. A spur of this eastern segment extends north from N. River Road for 0.25 miles, where it parallels the east side of the Salinas River. A second segment of the pipeline extends north from the WWTF, to the northwestern corner of the expansion areas, then turns west across the UPRR, to Mission Street. From here, it extends along Mission Street for approximately 1.4 miles, to the southern end of the community. Two separate spurs extend westward from Mission Street, within the community of San Miguel, for approximately 0.15 miles each. The eastern portions of the pipelines route occur along roads in a largely rural area east of the Salinas River, while the western portions occur in the urban part of the community.

The Action Area, including the proposed pipeline and 500-foot buffer, includes extensive urban/developed areas in the community of San Miguel, vineyards and rural residences east of the Salinas River, a patchy distribution of grassland habitat habitats and oak woodland near the eastern pipeline segments, and the Salinas River and associated riparian, where it is adjacent to the WWTF, the proposed expansion area, and the River Road crossing (Figure 3). Areas where direct project effects would occur are existing development (existing WWTF and the pipeline route) and an area of mostly fallow agriculture in the expansion area.

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5 Status of the Species in the Action Area

This section discusses the current status of San Joaquin kit fox, California condor, and least Bell's vireo in the vicinity of the Action Area, and its occurrence or potential to occur in the Action Area.

5.1 Steelhead, South-Central California Coast DPS

Critical habitat for steelhead occurs within the Salinas River in the Action Area (Figure 4, Critical Habitat within the Action Area Vicinity). As noted in Section 3.1, several tributaries to the Upper Salinas River, both upstream and downstream of the Action Area, were considered part of the historical range of spawning steelhead (NMFS 2013). As of the time of the preparation of the recovery plan for the south-central California coast DPS (NMFS 2013), no known barriers to passage existed along the Salinas River south to the Atascadero Area, upstream of the Action Area. Downstream of the Action Area, dams on the Nacimiento and San Antonio rivers limited steelhead access to these streams. Additional barriers occurred upstream of Atascadero, both on the mainstem of the Salinas River and along several tributaries, limiting access to upstream spawning areas. Based on snorkel surveys in 2003, steelhead still occurred in several tributaries upstream of the Action Area: Paso Robles Creek, Atascadero Creek, and Santa Margarita Creek (Boughton et al. 2006). Steelhead accessing these creeks would have used critical habitat within the Action Area to reach the spawning grounds. Therefore, steelhead are presumed to occur regularly within the Action Area, while moving to and from spawning grounds upstream.

5.2 San Joaquin Kit Fox

The range of San Joaquin kit fox was not well known at the time of its listing in 1967, and it was only with the first, preliminary study of the species' distribution by the California Department of Fish and Game (CDFG) in 1970 that agencies recognized its presence in the Salinas Valley, including its historic presence in the valley as far north as San Benito and Santa Clara counties (Laughrin 1970). At that time, the species was still regarded as occurring occasionally in the Cholame-Shandon region of San Luis Obispo County, and the CDFG range map showed the species still occurring well north in the Salinas Valley, in Monterey and San Benito counties. The California Natural Diversity Database (CNDDB; CDFW 2021a) includes numerous occurrences from the Action Area vicinity, in both San Luis Obispo County and Monterey County, particularly at Camp Roberts, east and northeast of the Action Area. Most of the 51 occurrences in this area are from the 1990s and early 2000s, and many are from within 5.0 miles of the Action Area, with one from 1996 slightly more than 1.0 mile to the northeast. While these occurrences are clustered east and northeast of the Action Area, at least one was to the south, approximately 1.8 miles south of San Miguel and the southern end of the Action Area, where a kit fox carcass was collected in 1990 (CDFW 2021a).

Despite the regular occurrence of the species in the San Miguel area into the 2000s, no kit foxes have been observed in this area since 2006, despite surveys conducted at Camp Roberts at least through 2017 (CDFW 2021a) (Figure 5, San Joaquin Kit Fox Occurrences). Moonjian (2007), based on extensive spotlighting surveys in northeastern and north-central San Luis Obispo County, determined that San Joaquin kit fox may be extirpated or below detection levels west of Shandon. USFWS has stated that, despite the presence of San Joaquin kit fox habitat in the Salinas Valley, no current documented evidence suggests the species occurs there, and "the species no longer occurs at Fort Hunter-Liggett [north of Camp Roberts] or Camp Roberts" (USFWS 2020b). Farther to the southeast, San Joaquin kit fox has been recorded more recently (since 2007) on several occasions, between approximately 12 and 20 miles from the Action Area (Figure 5). The nearest more recent CNDDB occurrence is from

about 12 miles southeast of the Action Area, near Whitley Gardens, where DNA analysis confirmed San Joaquin kit fox scat in 2014 (CDFW 2021a). CNDDB includes four other occurrences east of Whitley Gardens to the Shandon area between 2012 and 2014 (CDFW 2021a), so the species likely persists in that area.

Within the Action Area, a habitat evaluation of the proposed expansion area in June 2020 found no evidence of San Joaquin kit fox presence, including no burrows or sign consistent with kit fox or any other fox species (Dudek 2020). The only burrows observed were three California ground squirrel (*Otospermophilus beecheyi*) burrows in the limited, untilled portions of the expansion area, which comprises only approximately 0.91 acres out of the 18.8 acres occupied by the existing WWTF and the proposed expansion area. Although the species has been recorded numerous times in the past in in the Action Area vicinity, CNDDB includes no occurrences within the Action Area itself or within the community of San Miguel (CDFW 2021a).

5.3 California Condor

California condors were first released in central coastal California in 1997, and the first individuals were released at Pinnacles National Monument (now Pinnacles National Park) in 2002 (USFWS 2013). The Central California population is 81 individuals as of October 2021 (VWS 2021). This population includes individuals principally occupying the Gabilan Range north northwest of the Action Area and on the east side of the Salinas Valley, in Monterey and San Benito counties, and the Santa Lucia Range of Monterey and San Luis Obispo counties, west of the Action Area. Occurrences are concentrated in the vicinity of Pinnacles National Park, more than 30 miles north of the Action, and along the coast of Monterey County, more than 30 miles to the west and northwest (USGS 2021).

USGS data for 2016 to 2018 show that occurrences in the region are concentrated in the Diablo Range to the north and northwest of the Action Area and to a lesser extend in the Santa Lucia Range to the east (USGS 2021; Figure 6, California Condor Occurrences). The data include several occurrences over the Action Area during this period, including one of an individual flying over the WWTF in 2018. In general, occurrences along the Salinas River Valley, outside adjacent mountain ranges, appear to involve occasional flyovers of birds travelling between more suitable habitats in the mountains. These individuals likely fly mostly high above the Action Area, although it is possible individuals occasionally land on the valley floor when suitable carrion is present. But because the Action Area occurs on mostly level terrain in the center of the valley, it is not considered good habitat for the species. Portions of the Action Area, especially east of the Salinas River, may support some suitable carrion resources, such as mule deer (*Odocoileus hemionus*). No condors were recorded passing over the Action Area in 2016 or early 2017, although on two occasions a radio-tracked condor flew near the Action Area. A total of 6 condors passed over the Action Area from the beginning of May 2017 through March 2018, including two condors that flew over the Action Area together on March 27, 2018 (Figure 6). USGS (2021) data indicate that, during this period, several condors may have landed in the Action Area or vicinity, but many of the data points indicating “stationary” condors suggest the individuals involved were actually moving through the area. One condor, #716, apparently perched approximately 600 feet north of the Action Area, likely within the Salinas River, on the afternoon of October 7, 2017, before moving north and roosting overnight approximately 0.6 miles north of the Action Area, based on the logging of numerous points in close proximity during these periods. The same individual had visited other locations farther north along the river on October 5, 2017. Condors appear to land somewhat more regularly within 2 miles of the Action Area, in more suitable terrain to the north and east.

5.4 Least Bell's Vireo

At the time of preparation of the Recovery Plan for least Bell's vireo (USFWS 1998b), the project region, including the entire Salinas Valley and all of San Luis Obispo and Monterey counties east of the valley, were considered part of the historic range of the species. The current range was thought to extend northward only through Santa Barbara County, and into the southern edge of San Luis Obispo County, in the Cuyama Valley (USFWS 1998b). Historic CNDDB occurrences from the Salinas River are all from Monterey County and a minimum of 7.0 miles from the Action Area. The nearest was an occurrence where several egg sets were collected along the river 7.0 miles south of the Action Area, between 1924 and 1947. Another occurrence, approximately 8.0 miles north of the Action Area, was of 3 males and a female present in 1983, although no vireos were found here in 1985 (CDFW 2021a) (Figure 7, Least Bell's Vireo Occurrences). The only other historic reports were of two from more than 20 miles north, prior to 1920. Survey efforts following this most recent sighting included a survey of habitat on Fort Hunter-Liggett and of the Nascimiento and Salinas Rivers where these streams occur within Camp Roberts, in 1987, and which resulted in no vireo detections (Greaves 1988). Despite the recent lack of occurrences, the Recovery Plan included Delisting Criteria 2 for least Bell's vireo, that "Stable or increasing least Bell's vireo populations, each consisting of several hundred or more breeding pairs, have become established or are protected at . . . the Salinas River, a San Joaquin River metapopulation, and a Sacramento River metapopulation" (USFWS 1998b).

As the population of least Bell's vireo expanded rapidly in the late 1990s and 2000s, this species occurred in parts of its old range where it had not been recorded for many years. Although CNDDB includes no new occurrences in the Monterey County portion of the Salinas River, or any other location north of the Action Area, it includes one occurrence from 2005 involving a single pair in early July that was absent during surveys on July 12 and 30, 2005 (CDFW 2021a) (Figure 7). The 5-year review prepared in 2006 noted that "A few incidental sightings after the breeding season" had been recorded in the previous five years, but added that "territorial and reproductive status" had not been established for these individuals (USFWS 2006). USFWS added that Delisting Criteria 2 had not been met, and it added that, given "current knowledge of vireo population increases within its present range and in consideration of a population viability analysis (PVA), this Delisting Criterion may need to be revised." Data available for years since 2006 include no new occurrences for least Bell's vireo along the Salinas River (e.g., Preston et al. 2021). Available literature includes no documented records for least Bell's vireo within the Action Area. However, riparian habitat associated with the Salinas River where it occurs within 500 feet of proposed project activities may be suitable for this species.

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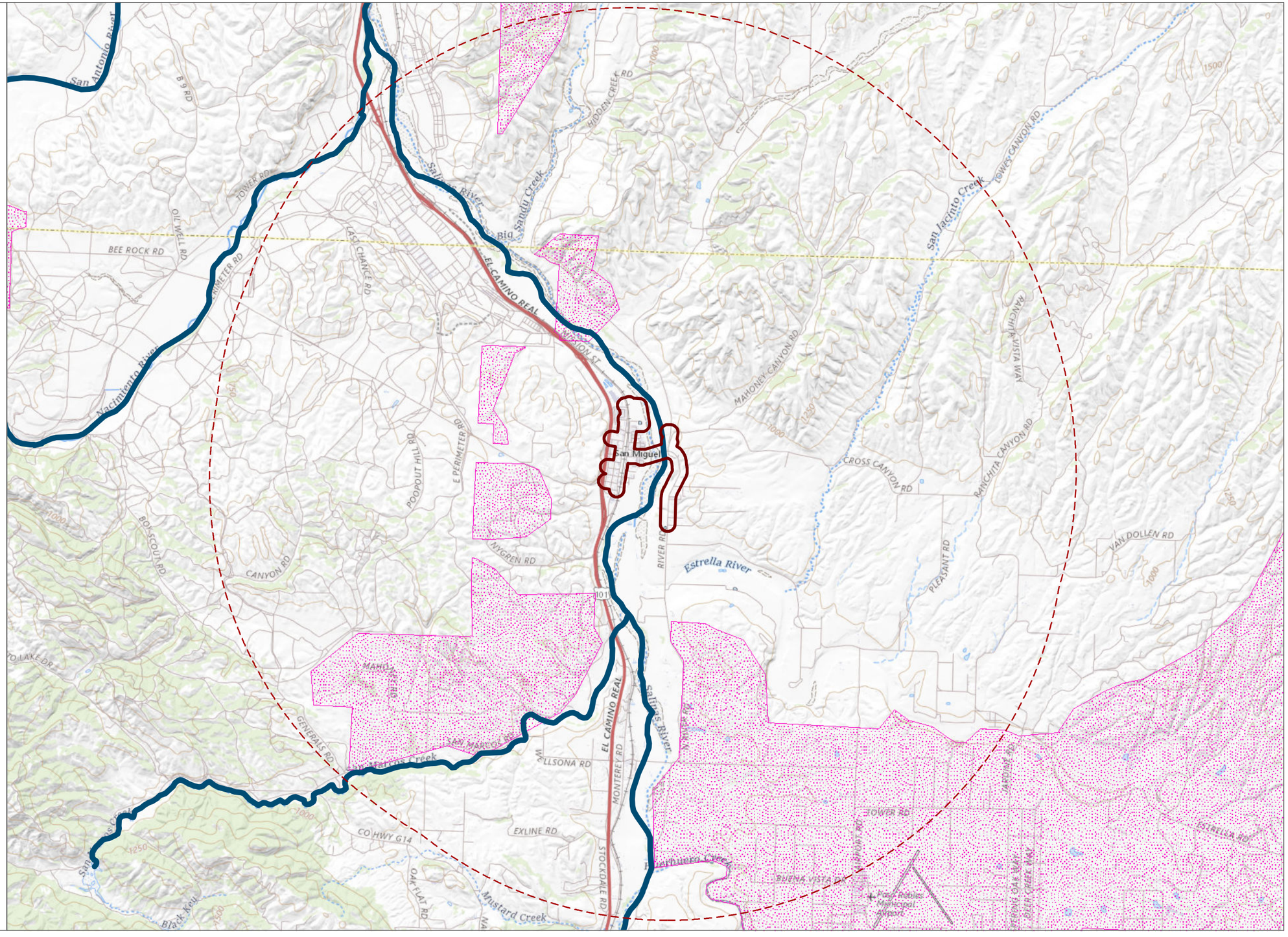
Action Area

5-mile Buffer from Action Area

Critical Habitat

Steelhead

Vernal Pool Fairy Shrimp



SOURCE: USGS National Map, USFWS Critical Habitat

DUDEK

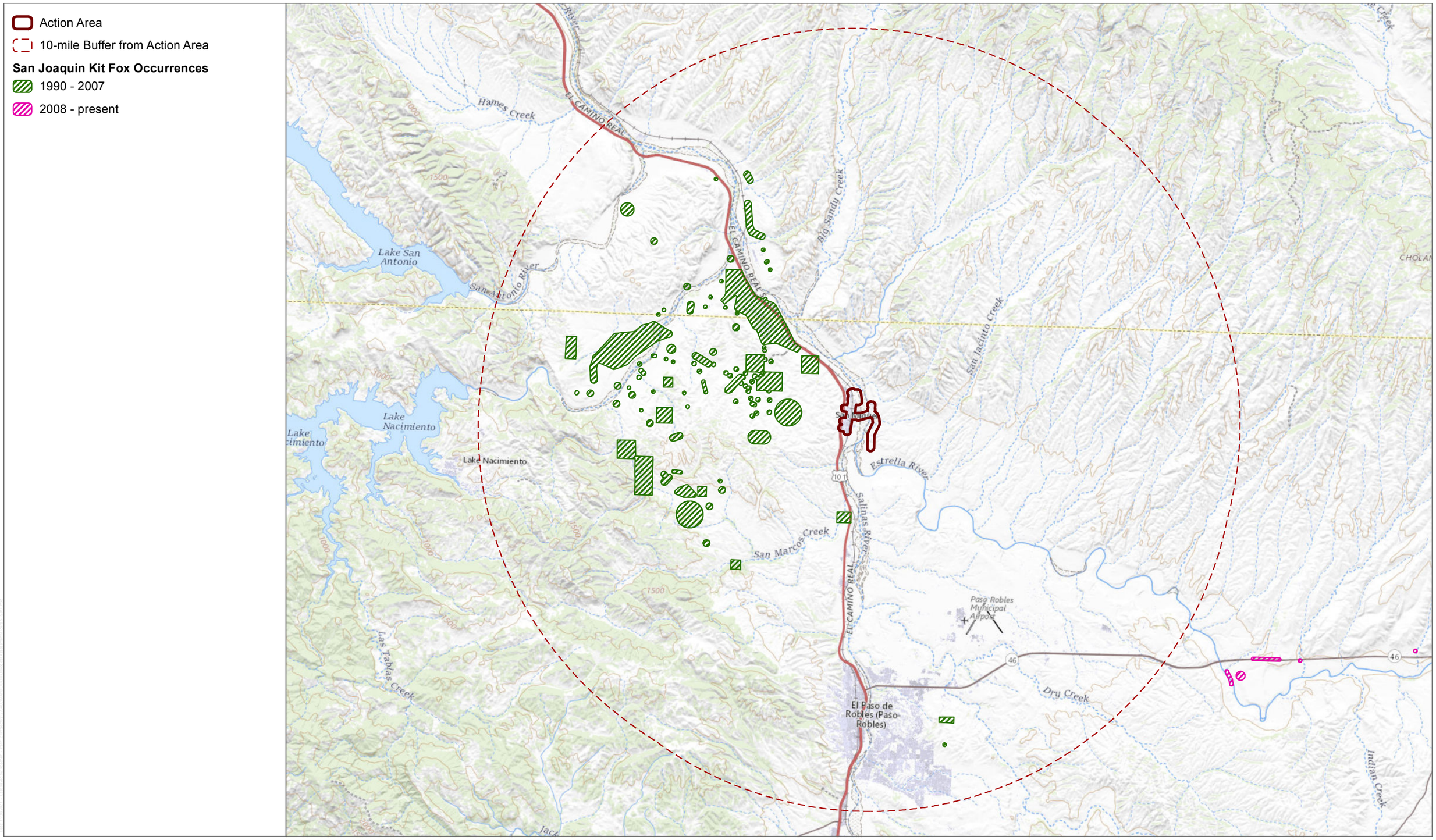
0 3,350 6,700 Feet

FIGURE 4

Critical Habitat within the Action Area Vicinity

SAN MIGUEL WASTEWATER TREATMENT PLANT UPGRADE/EXPANSION BIOLOGICAL ASSESSMENT

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SOURCE: USGS National Map, CNDDB

DUDEK

0 6,500 13,000 Feet

FIGURE 5

San Joaquin Kit Fox Occurrences

SAN MIGUEL WASTEWATER TREATMENT PLANT UPGRADE/EXPANSION BIOLOGICAL ASSESSMENT

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Action Area

1-mile Buffer from Action Area

5-mile Buffer from Action Area

California Condor Occurrence Data

- 2018 (first half)
- 2017
- 2016

SOURCE: USGS National Map, USFWS

DUDEK

0 3,350 6,700 Feet

FIGURE 6

California Condor Occurrences

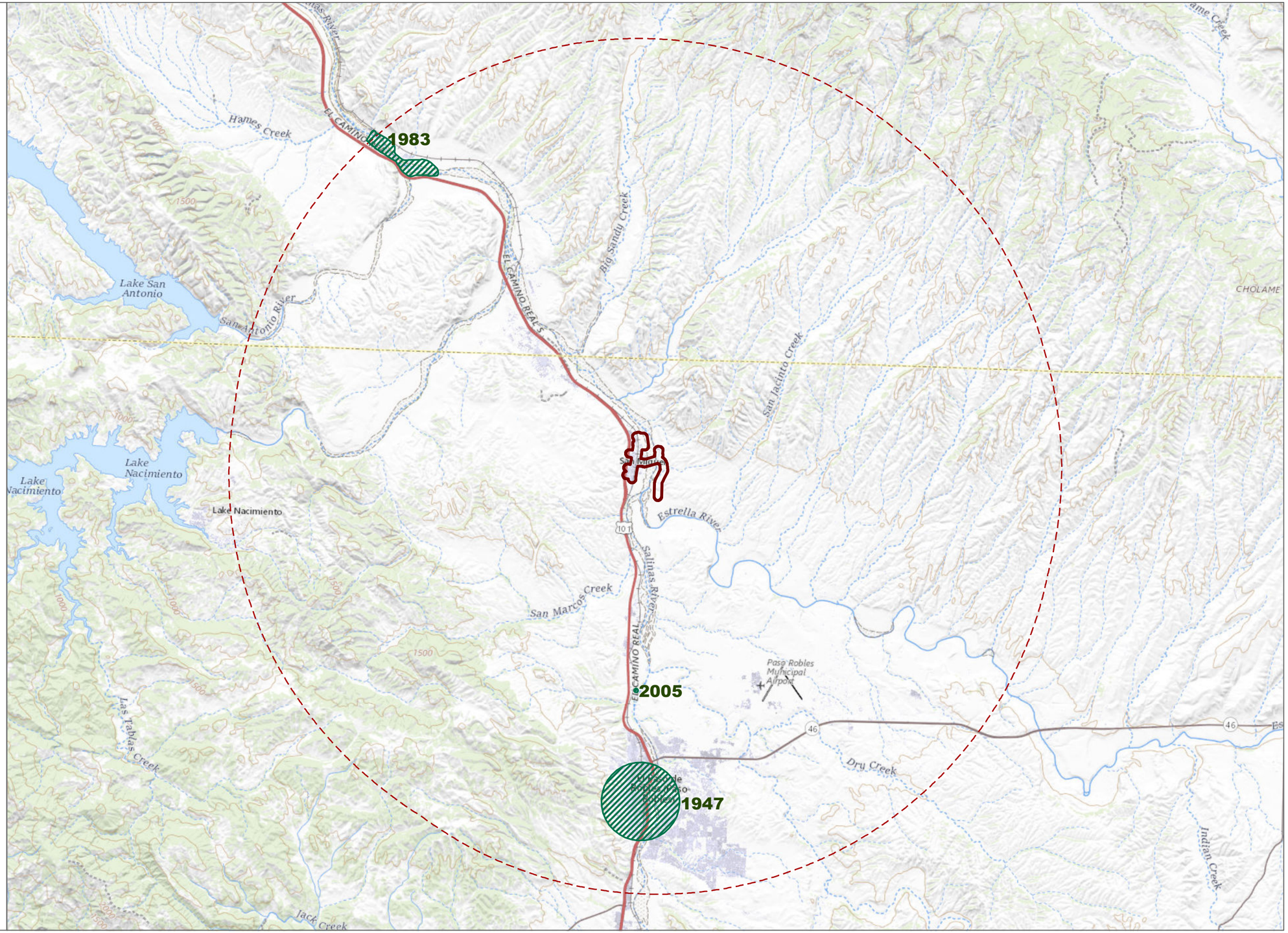
SAN MIGUEL WASTEWATER TREATMENT PLANT UPGRADE/EXPANSION BIOLOGICAL ASSESSMENT

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Action Area

10-mile Buffer from Action Area

Least Bell's Vireo Occurrences



SOURCE: USGS National Map, CNDDB

DUDEK

0 6,500 13,000 Feet

FIGURE 7

Least Bell's Vireo Occurrences

SAN MIGUEL WASTEWATER TREATMENT PLANT UPGRADE/EXPANSION BIOLOGICAL ASSESSMENT

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6 Effects of the Action

Potential effects of the proposed action on the covered species include permanent and temporary loss of habitat, and those associated with individuals due to construction. These potential effects are discussed in more detail below for each of the four covered species.

6.1 Steelhead, South-Central California Coast DPS

Potential steelhead occurrence within the Action Area is limited to aquatic habitat within the Salinas River. Therefore, the impacts discussion below is limited to the potential for effects on aquatic habitat within the river.

6.1.1 Loss of Habitat

Because direct effects would be limited to areas of existing development, fallow agriculture, and a small area of non-native grassland, the proposed action would not result in loss of aquatic habitats associated with the Salinas River that are suitable for steelhead of the south-central California coast DPS, and therefore would also not result in loss of steelhead critical habitat within the Action Area.

6.1.2 Loss of or Harm to Individuals

Because no direct effects would occur within aquatic habitats, no direct loss of or harm to individual steelhead of the south-central California coast DPS would occur. In addition, the proposed action would include BMPs implemented under the SWPPP that would result in avoidance of water quality effects from stormwater discharge and erosion. Biological monitoring, implementation of a WEAP, and additional construction measures (such as prohibiting vehicle maintenance/fueling/staging within 100 feet of any riparian habitat) would further ensure avoidance of these indirect effects. Long-term water quality effects would be avoided due to implementation of permanent erosion control measures in remaining disturbed areas at the completion of construction. Finally, as the WWTF does not discharge effluent into the Salinas River and the proposed action would not result in changes to groundwater infiltration from the percolation ponds, no long-term direct hydrological effects would occur from the proposed action.

6.2 San Joaquin Kit Fox

For the purposes of this BA, and despite the very low potential for SJKF to occur within the Action Area as described in Section 5.2, it is assumed that San Joaquin kit fox could occur in any grassland habitat within the Action Area east of the Salinas River and in the expansion area immediately north of the existing WWTF. Potential effects on San Joaquin kit fox would be associated with the permanent loss of habitat in the proposed expansion area and effects from construction activities, such as noise, on San Joaquin kit foxes occurring within the Action Area adjacent to construction activities.

6.2.1 Loss of Habitat

Although the proposed action would not result in the loss of natural communities other than a small amount (0.91 acres) of non-native grassland within the proposed expansions area. The loss of this small area of non-native grasslands is not likely to result in adverse effects to San Joaquin kit fox. The remainder of the proposed expansion area occurs within fallow agricultural lands subject to regular disturbance from disking and is not suitable for San Joaquin kit fox, except for passage between more suitable habitats. The project would not result in permanent impacts elsewhere, except in currently developed or disturbed areas. All temporary impacts outside the proposed expansion area would also occur in developed and disturbed areas. Therefore, given the lack of recent occurrences (since 2006) within the Action Area and vicinity, the small amount of natural habitat that would be removed, and the poor quality of the habitat that will be removed, the project is not expected to result in adverse effects to San Joaquin kit fox from loss of habitat. Nonetheless, County policies for mitigation for loss of San Joaquin kit fox habitat require that mitigation be provided at a ratio determined by location of impacts. In the Action Area, the San Miguel Community Plan (County 2016a) provides a map showing mitigation ratios to be applied for all locations within the Plan Area. County policies also permit project applicants to apply for a lower mitigation ratio, based on the results of a San Joaquin kit fox habitat evaluation. The Plan has designated the area immediately north of the existing WWTFF as requiring 4:1 mitigation for loss of San Joaquin kit fox habitat. Based on the results of the project San Joaquin kit fox habitat evaluation, the SMCSD has determined that, because of poor habitat conditions within the expansion area, a ratio of 2:1 is sufficient, as reflected in the conservation measures described in Section 2.8.

6.2.2 Loss of or Harm to Individuals

As noted above, San Joaquin kit fox is unlikely to occur within the Action Area at the time of construction. In addition, direct project effects to natural communities would be limited to two small strips of non-native grassland, totaling 0.91 acres, in the proposed expansion area. In addition, although the remainder of the expansion area is occupied by disked agricultural and other disturbed land covers, the County (2016a, 2016b) has determined that compensatory mitigation is required for impacts to this area. Elsewhere in the Action Area, suitable habitat occurs in grassland areas adjacent to the proposed pipeline route, particularly where it occurs east of the Salinas River. Therefore, in the unlikely event that San Joaquin kit fox does occur during construction, construction activities could result in disturbance of kit foxes occupying dens within the Action Area. The limited amount of grading proposed in the expansion area could result in injury or mortality to individual San Joaquin kit foxes that may be utilizing this part of the expansion area. Specifically, grading could result in destruction or collapse of occupied dens and entrapment of SJKF in the dens. Installation of solar facilities is less likely to result in these effects on San Joaquin kit fox, but exact effects that could occur in this area are less well-known. Access roads established within the solar array would require grading that would have similar potential effects as grading for the WWTF expansion. In addition, machinery required for installing solar panels and other facilities could cause collapse any active dens in this area. Vehicle and equipment traffic could also result in vehicle strikes, resulting in injuring or mortality of San Joaquin kit fox. The proposed action could also result in indirect effects. Noise and human activity near occupied dens, including natal dens, could cause abandonment of dens, and potentially disrupt pup-rearing activities, resulting in reproductive failure. The presence of food items at work sites could attract kit foxes and expose them to harm from construction activity or expose them to potential predation.

As noted in Section 5.2, San Joaquin kit foxes have not been observed within the Action Area or vicinity, or anywhere in the Salinas Valley, since 2006. The habitat evaluation conducted in the 2020 determined that San Joaquin kit foxes were unlikely to occur in the expansion area. No suitable habitat occurs elsewhere in the Action Area, except

in grasslands adjacent to portions of the proposed pipeline route east of the Salinas River. Therefore, the potential for the project to result in loss of or injury to an individual San Joaquin kit fox is remote. As listed in Section 2.8, a number of conservation measures are provided that, when implemented, would avoid the potential for loss of or harm to individual San Joaquin kit foxes, in the unlikely event that they would occur within the Action Area. These measures include those developed by USFWS that are commonly used for avoiding impacts to San Joaquin kit fox (USFWS 2011). The strategy for avoiding injury or mortality of San Joaquin kit fox relies foremost on identifying the locations of dens and avoiding occupied dens. The conservation measures listed in Section 2.8 include a pre-construction burrow survey to identify potential, known, and natal dens; avoiding dens by employing USFWS-prescribed buffers; determining occupancy of dens through non-invasive means (by use of tracking medium or camera stations); collapsing unoccupied dens; and avoiding occupied natal dens at all times. A qualified biologist will conduct and oversee the surveys, den monitoring, and burrow collapsing, and ensure that all appropriate buffers are established and property delineated so that no construction personnel enter the area. The qualified biologist will also prepare a report of all surveys, monitoring, and den collapsing, and will also report on any buffers established based on the surveys and monitoring.

When not in dens, San Joaquin kit foxes are highly mobile and are able to avoid construction equipment. By imposing speed limits according to USFWS (2011) standardized recommendations and with implementation of the WEAP presented to on-site workers to educate them on San Joaquin kit fox life history, habitat requirements, regulatory protections, and project conservation measures, San Joaquin kit fox vehicle strikes are expected to be avoided. The potential for San Joaquin kit foxes to wander onto and seek refuge within active work sites during evenings, or to become trapped in trenches, will be avoided through implementation of measures to cap pipes and tubes that San Joaquin kit foxes may occupy and to cover trenches that SJKF may enter. Other measures that will avoid adverse effects on San Joaquin kit foxes include on-site monitoring by a qualified biologist to check for any animals that could be harmed within work site areas and trash containment and removal.

6.3 California Condor

As described in Section 5.3, California condors pass over the Action Area on rare occasion, but they have a low potential to land within most parts of the Action Area. However, condors are known to be attracted to construction sites on occasion. Therefore, the discussion of effects below focuses on those that could occur if the species is attracted due to construction activity.

6.3.1 Loss of Habitat

As noted in Section 5.3, the Action Area occurs on mostly level terrain in the center of the valley, and it is not considered good habitat for the species. Portions of the Action Area, especially east of the Salinas River, may support some suitable carrion resources, such as mule deer (*Odocoileus hemionus*). But occurrences of California condor within and near the Action Area are believed to involve mostly individuals flying high above the Salinas Valley, in transit between more suitable habitats, such as occur in the Diablo Range to the north and east. In addition, the loss of natural communities from project implementation would be limited to removal of a small area of non-native grassland in the proposed expansion area. This area and the disked field that would potentially be removed within the expansion area, as noted above, are poor habitat for the species. Therefore, because of the low potential for this species to land in the Action Area, the large amount of available, more suitable habitat elsewhere in the region, and the poor quality and small amount of the habitat that would be removed, the proposed action would not result in adverse effects to California condor from habitat loss.

6.3.2 Loss of or Harm to Individuals

Because of the species' mobility, because it is not expected to nest within the Action Area, and because it typically flies over at high altitudes, it is highly unlikely that any California condors would be killed or injured by equipment during construction. However, the chance of this species occurring on-site during construction, leading to loss of individuals, is not so unlikely as to be considered discountable. Construction debris, litter, leaking equipment, or roadkill could attract condors to the Project Site during construction. Condors are curious birds and have been documented in close association with oil pumps and human activity in the Los Padres National Forest. During cleanup activities at trash sites, condors have been observed sitting on guard rails adjacent to the cleanup activities. In particular, condors attracted to the construction site could consume microtrash (including small bits of plastic, bottle caps, pop-tops, PVC pipe fragments, and broken glass). California condors have been known to inadvertently feed such items to hatchlings, sometimes resulting in death of young (USFWS 2013). Condor attraction to the construction site could result in individuals being struck by construction vehicles. However, with implementation of the avoidance and minimization measures described in Section 2.8.1, these potential affects would be avoided. Daily disposal of trash items, and their weekly removal from the site, as required under the San Joaquin Kit Fox Protection Measures during Construction, would remove an important attractant to construction sites and result in avoidance of effects from microtrash. Imposition of speed limits, as part of the San Joaquin kit fox measures, would ensure that California condors are not subject to vehicle collisions due to the project.

6.4 Least Bell's Vireo

For the purposes of this BA, least Bell's vireo are considered to have the potential to occur in the Action Area only within riparian vegetation associated with the Salinas River, where they have only a low potential to occur. Effects discussed below are those that could occur within the portion of the Action Area that overlaps the Salinas River and associated riparian vegetation.

6.4.1 Loss of Habitat

The potential for least Bell's vireo to occur within the Action Area, including riparian habitat that occurs within 500 feet of proposed construction activities, is low. And, in the unlikely event that least Bell's vireos occur in the Action area, their occurrence would be limited to the riparian habitat associated with the Salinas River. The proposed action, which is designed to avoid impacts to the Salinas River and associated riparian vegetation, would not result in removal of any of this habitat. Therefore, the proposed action would have no effects on least Bell's vireo due to loss of habitat.

6.4.2 Loss of or Harm to Individuals

The proposed action would not result in direct loss of or harm to individual least Bell's vireos, their nests, eggs, or young, because it would not result in temporary or permanent removal of habitat. However, in the unlikely event that least Bell's vireos occur when construction activities are initiated, activities adjacent to occupied habitat could result in indirect effects resulting in the temporary displacement of vireos, affecting their ability to successfully form breeding pairs, establish territories, build nests, forage, and defend their territories and young. These effects principally include construction-related noise and ground vibration, resulting in potential harm to individual birds,

young, and/or eggs. In particular, construction-related noise and vibration could adversely affect nesting and breeding behavior, resulting in a decrease in nesting success. Contact with runoff polluted by fuel, oil, lubricants, paints, release agents, and other construction materials could also potentially cause harm to least Bell's vireos. However, conservation measures include a protocol survey for least Bell's vireo at the appropriate season, as well as a pre-construction nesting bird survey, including establishment of no-work buffers for any nests located. Additional measures protecting least Bell's vireo include prohibition of construction activities within 500 feet of a least Bell's vireo nest or territory. In addition, the proposed action includes measures that would ensure no pollutants enter the stream, including biological monitoring; preparation of a WEAP; and the prohibition of maintenance, fueling, and staging of vehicles within 100 feet of any riparian habitat or water body.

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7 Determination of Effect

This BA forms the basis for the conclusions presented as follows regarding the effects of the proposed action on four species that have potential to occur in the Action Area, as well as on critical habitat for federally listed species.

The Action Area contains suitable habitat and critical habitat for one anadromous fish species (steelhead), and it has potential to support occurrence of one listed mammal species (San Joaquin kit fox) and two listed bird species (least Bell's vireo and California condor). Based on a review of the current status of these species in the Action Area and vicinity, the effects of the proposed action, and measures included in the action to avoid and minimize effects to listed species, the proposed action: (1) would have ***no effect*** on steelhead of the south-central California coast DPS and (2) ***may affect, but is not likely to adversely affect***, San Joaquin kit fox, least Bell's vireo, and California condor. The proposed action would have ***no effect*** on designated critical habitat for south-central California coast DPS steelhead.

Table 6. Summary of Effects Determination

Federally Listed Species	No Effect	May Affect, but Is Not Likely to Adversely Affect	Is Likely to Adversely Affect
Steelhead, South-Central California Coast DPS	X		
San Joaquin Kit Fox		X	
California Condor		X	
Least Bell's Vireo		X	

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Appendix A

San Joaquin Kit Fox Habitat Assessment

621 CHAPALA STREET
SANTA BARBARA, CALIFORNIA 93101
T 805.963.0651 F 805.963.2074

September 11, 2020 12704

Kelly Dodds, Director of Utilities
San Miguel Community Services District
1150 Mission Street
San Miguel, California 93451

Subject: *San Miguel Wastewater Treatment Plant Upgrade/Expansion Project, Santa Miguel, San Luis Obispo County, California, San Joaquin Kit Fox Habitat Evaluation*

Dear Mr. Dodds:

This letter report documents the methods and results of a San Joaquin kit fox (*Vulpes macrotis mutica*) habitat evaluation prepared in support of the San Miguel Wastewater Treatment Plant Upgrade/Expansion Project (Project), San Miguel Community Services District. The habitat evaluation was conducted in support of County of San Luis Obispo determination of mitigation required for loss of habitat of San Joaquin kit fox, based on the County's standard Kit Fox Habitat Evaluation Form. The completed form for the Project is included as Attachment A, to be provided to the County of San Luis Obispo.

1 Background and Project Location

The San Miguel Community Services District (SMCSD) proposes the upgrade and expansion of the existing San Miguel Wastewater Treatment Plant (WWTP) located at the north end of Bonita Place, in the community of San Miguel, California. The existing WWTP is located close to the northern limits of the community, within Assessor's Parcel Numbers (APNs) 021-051-015 and 021-051-013, and the expansion is proposed for a portion of APN 021-051-017 adjacent to the existing WWTP on the north. A final design for the Project was not available at the time of preparation of this report, but the expansion is anticipated to occur within a field subject to regular tilling, in the western portion of APN 021-051-017. The Project site is within the community of San Miguel, San Luis Obispo County, California (Attachment B: Figure 1). It includes the existing wastewater treatment plant (WWTP) and the extension area immediately to the north. Residences within the community of San Miguel are to the south, the Salinas River and associated riparian vegetation are to the east, undeveloped space is to the north, and the Union Pacific Railroad (UPRR) and additional development associated with the community of San Miguel are to the west.

3 Methods

To complete the Kit Fox Habitat Evaluation Form, Dudek performed a query of the California Natural Diversity Database (CNDDB) and examined additional standard sources on the recovery of San Joaquin kit fox in the region, including *Recovery Plan of Upland Species of the San Joaquin Valley, California* (USFWS 1998) and *San Joaquin Kit Fox (*Vulpes macrotis mutica*) 5-Year Review: Summary and Evaluation* (USFWS 2010). Dudek Senior Biologist Dave Compton conducted the field assessment on June 11, 2020. Mr. Compton walked the entire Project site, focusing on areas outside the existing WWTP, as the existing site is developed, supports regular human activity,

and is fenced. He searched for evidence of San Joaquin kit fox, including burrows and scat, recorded all burrows observed, and recorded habitat conditions, including mapping vegetation on-site according to California Wildlife Habitat Relationship standards. He also recorded information on surrounding land uses.

4 Results

As noted above, the site is within the community of San Miguel, between the Salinas River to the east and the UPRR to the west. Development from the existing WWTP occupies the southern portion of the site and is separated from the remainder of the site by a 6 foot chain-link fence that extends to the ground and includes outward-oriented barbed wire strands at the top. The UPRR is immediately west of the site. Residences within the community of San Miguel are farther south, and dense development continuous with the existing plant extends south approximately 1.0 mile, and west beyond the UPRR to U.S. 101, approximately 0.25 mile. West of U.S. 101 is a mixture of grasslands, vineyards, and residences. Land uses east of the Salinas River are similar to those west of U.S. 101, including an extensive block of vineyards just outside the eastern boundary of the community of San Miguel. A relatively narrow undeveloped area of grassland continues approximately 0.25 mile north of the Project site, beyond which vineyards and existing development occupy the area between the Salinas River and U.S. 101.

Undeveloped portions of the Project site comprise an area of fallow, disked agriculture (cropland – fallow) immediately north of the existing WWTP, a maintained dirt road through the southwest corner of the disked field, limited amounts of annual grassland, and a strip of riparian vegetation (valley foothill riparian) associated with the Salinas River that overlaps the eastern edge of the site (Attachment B: Figure 2). The disked field that occupies most of the undeveloped portion of the site extends slightly outside the site to the west, forming a narrow band of approximately 130 to 200 feet in width between the Project site and the UPRR. The annual grassland within the site is limited to a narrow strip near the western edge on a low slope that is too steep for disking, and the northern edge of the site, where a larger area of grassland on the neighboring parcel overlaps the Project site. Only three mammal burrows were observed during the assessment. All were located along the western edge of the site, and all were no more than three inches in diameter at the entrance, and consistent with burrows of California ground squirrel (*Spermophilus beecheyi*). No burrows larger than this, and suitable for San Joaquin kit fox, were observed, and no sign of kit fox was observed during the assessment. The attached, completed Kit Fox Habitat Evaluation Form (Attachment A) includes a score of 48 out of 100. The score is relatively low because the Project would not block an existing corridor, because the area proposed for development is small (much less than 40 acres), the site is not immediately adjacent to suitable San Joaquin kit fox habitat, and kit foxes have not been observed within 3 miles of the site within the past 10 years (Attachment C). Note that, although the score on the form reflects that suitable habitat occurs on the site, only 0.9 acres out of 18.8 of the entire site are suitable for denning. Additional details of the assessment are included on the completed form. Photographic documentation is in Attachment D.

4 Discussion

Due to the absence of habitat suitable for occupancy by San Joaquin kit fox, the lack of San Joaquin kit fox sign on the Project site, and potential constraints to movement to the north, south, and west from development, vineyards, and U.S. 101, and based on the score as determined on the Kit Fox Evaluation Form, the County of San Luis Obispo should consider a reduction in the mitigation requirement for the proposed Project. Dudek previously prepared a Kit Fox Habitat Evaluation Form for the 973 K Street Project in the Community of San Miguel. The mitigation ratio required for this project, which occurred in more suitable habitat consisting entirely of annual grassland, was 2:1.

Therefore, we believe the ratio for the WWTP upgrade/expansion should not exceed, and should potentially be less than, 2:1.

If you have any questions regarding the content of this letter report or require additional information, please feel free to contact me at (805) 252-0557 or dcompton@dudek.com.

Sincerely,

Dave Compton
Senior Biologist

John Davis IV
Senior Ecologist

Attachments: A – Kit Fox Habitat Evaluation Form, San Miguel WWTP Upgrade/Expansion
B – Figures
C – CNDDB Results
D – Photo Documentation

cc: Jessica Kinnahan, Dudek

Attachment A

Kit Fox Habitat Evaluation Form

Kit Fox Habitat Evaluation Form

(guidelines)

Cover Sheet

Project Name__San Miguel WWTP Upgrade/Expansion

Date__8/10/2020

ProjectLocation*Insection of Benedict St and Bonita Pl, San Miguel

*Include project vicinity map and project boundary on copy of U.S.G.S. 7.5 minute map (size may be reduced)

U.S.G.S. Quad Map Name
___San Miguel_____

Lat/Long or UTM coordinates (if available)

35° 45' 34" N, 120° 41' 35" W

Project Description: upgrade and expansion of existing wastewater treatment plant.

Project Size 18.8 **Acres** **Amount of Kit Fox Habitat Affected** 8.4 **Acres**

Quantity of WHR Habitat Types Impacted (i.e. - 2 acres annual grassland, 3 acres blue oak woodland)

WHR type:	Cropland (fallow--disked)	7.5	Acres
WHR type	Valley Foothill Riparian	0.03	Acres
WHR type	Annual Grassland	0.9	Acres
WHR type	Urban	10.3	Acres

Comments: Located between the Salinas River to the east and the UPRR to the west. Development from the existing WWTP occupies the southern portion of the site and is separated from the remainder of the site by a chain-link fence that extends to the ground and includes outward-oriented barbed wire strands at the top. The UPRR is immediately west of the site. Residences within the community of San Miguel are farther south, and dense development continuous with the existing plant extends south approximately 1.0 mile, and west beyond the UPRR to U.S. 101, approximately 0.25 mile. West of U.S. 101 is a mixture of grasslands, vineyards, and residences. Land uses east of the Salinas River are similar to those west of U.S. 101, including an extensive block of vineyards just outside the eastern boundary of the community of San Miguel. (next p.)

A relatively narrow undeveloped area of grassland continues approximately 0.25 mile north of the Project site, beyond which vineyards and existing development occupy the area between the Salinas River and U.S. 101.

Undeveloped portions of the Project site comprise an area of fallow, disked agriculture (cropland - fallow) immediately north of the existing WWTP, a maintained dirt road through the southwest corner of the disked field, limited amounts of annual grassland, and a strip of riparian vegetation (valley foothill riparian) associated with the Salinas River that overlaps the eastern edge of the site. The disked field that occupies most of the undeveloped portion of the site extends slightly outside the site to the west, forming a narrow band of approximately 130 to 200 feet in width between the Project site and the UPRR. The annual grassland within the site is limited to a narrow strip near the western edge on a low slope that is too steep for disking, and the northern edge of the site, where a larger area of grassland on the neighboring parcel overlaps the Project site. Only three mammal burrows were observed during the assessment. All were located along the western edge of the site, and all were no more than three inches in diameter at the entrance, and consistent with burrows of California ground squirrel (*Spermophilus beecheyi*). No burrows larger than this, and suitable for San Joaquin kit fox, were observed, and no sign of kit fox was observed during the assessment.

NOTE: Although the answer to question 2 below indicates the presence of suitable habitat, only 0.9 acres of such habitat (annual grassland) occurs on the site.

Form Completed By:

Rev 3/02
G:envdiv/forms/kit fox habitat

San Joaquin Kit Fox Habitat Evaluation form

Is the project area within 10 miles of a recorded San Joaquin kit fox observation or within contiguous suitable habitat as defined in question 2 (A-E)

(Yes)- Continue with evaluation form
No - Evaluation form/surveys are not necessary

1. Importance of the project area relative to Recovery Plan for Upland Species of the San Joaquin Valley, California (Williams et al., 1998)

   A. Project would block or degrade an existing corridor linking core populations or isolate a subpopulation (20)
   B. Project is within core population (15)
   C. Project area is identified within satellite populations (12)
   D. Project area is within a corridor linking satellite populations (10)
   (E.) Project area is not within any of the previously described areas but is within known kit fox range (5)

2. Habitat characteristics of project area.

   A. Annual grassland or saltbush scrub present >50% of site (15)
   (B.) Grassland or saltbush scrub present but comprises<50% of project area (10)
   C. Oak savannah present on >50% of site (8)
   D. Fallow ag fields or grain/alfalfa crops (7)
   E. Orchards/vineyards (5)
   F. Intensively maintained row crops or suitable vegetation absent (0)

3. Isolation of project area.

   A. Project area surrounded by contiguous kit fox habitat as described in Question 2a-e (15)
   B. Project area adjacent to at least 40 acres of contiguous habitat or part of an existing corridor (10)
   (C.) Project area adjacent to <40 acres of habitat but linked by existing corridor (i.e., river, canal, aqueduct) (7)
   D. Project area surrounded by ag but less than 200 yards from habitat (5)

E. Project area completely isolated by row crops or development and is greater than 200 yards from potential habitat (0)

4. Potential for increased mortality as a result of project implementation. Mortality may come from direct (e.g., - construction related) or indirect (e.g., - vehicle strikes due to increases in post development traffic) sources.

A. Increased mortality likely (10)
(B.) Unknown mortality effects (5)
C. No long term effect on mortality (0)

Revised 03-02

5. Amount of potential kit fox habitat affected.

A. >320 acres (10)
B. 160 - 319 acres (7)
C. 80 - 159 acres (5)
D. 40 - 79 acres (3)
(E.) < 40 acres (1)

6. Results of project implementation.

(A.) Project site will be permanently converted and will no longer support foxes (10)
B. Project area will be temporarily impacted but will require periodic disturbance for ongoing maintenance (7)
C. Project area will be temporarily impacted and no maintenance necessary (5)
D. Project will result in changes to agricultural crops (2)
E. No habitat impacts (0)

7. Project Shape

(A.) Large Block (10)
B. Linear with > 40 foot right-of-way (5)
C. Linear with < 40 foot right-of-way (3)

8. Have San Joaquin kit foxes been observed within 3 miles of the project area within the last 10 years?

A. Yes (10)
(B.) No (0)

Scoring

1. Recovery importance ____5___
2. Habitat condition ___10___

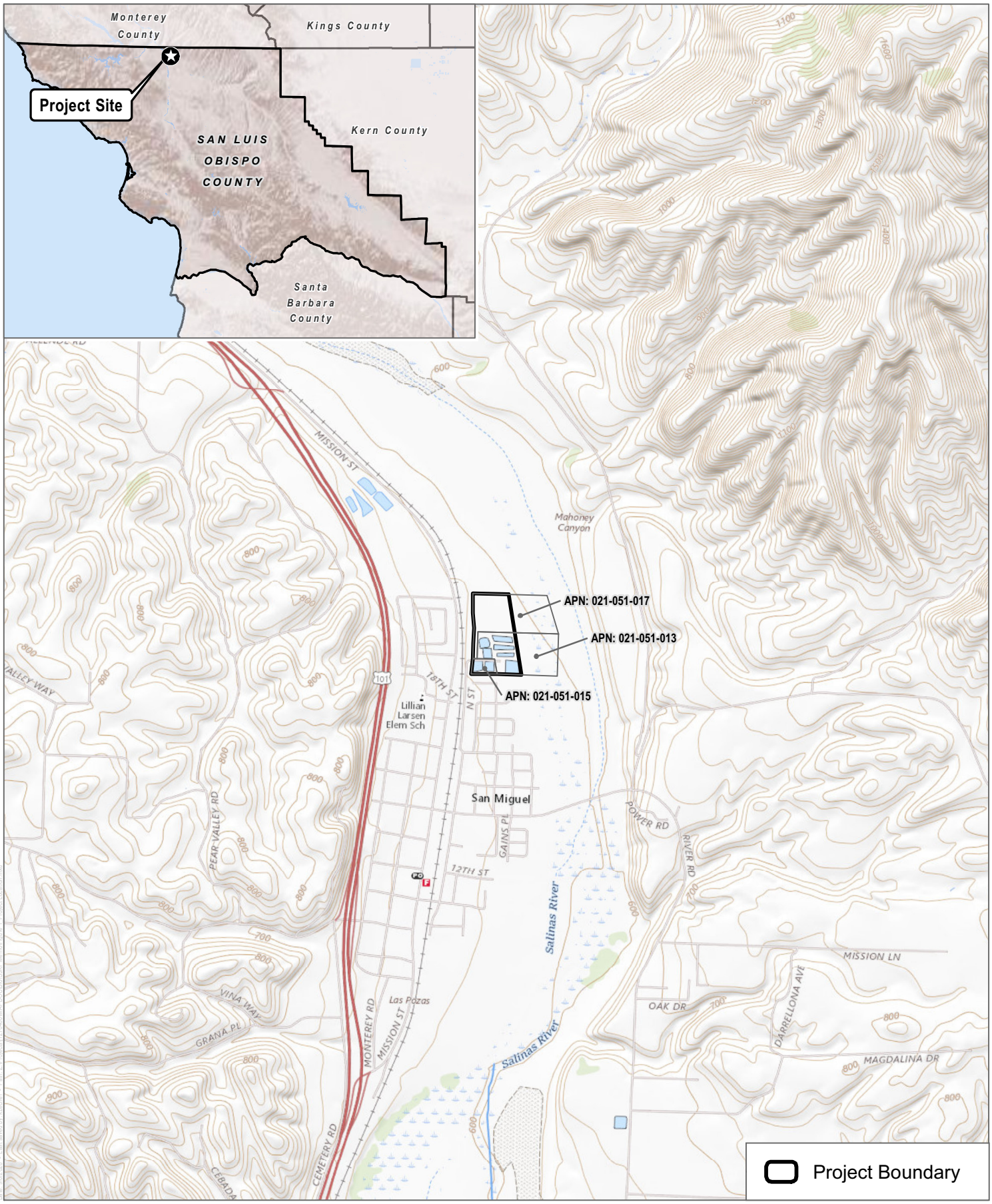
3.	Isolation	_____7__
4.	Mortality	_____5__
5.	Quantity of habitat impacted	_____1___
6.	Project results	____10__
7.	Project shape	____10__
8.	Recent observations	_____0__

TOTAL ____48__

Revised 03/02-lpd

Attachment B

Figures



SOURCE: USGS The National Map - San Miguel and Paso Robles Quadrangles

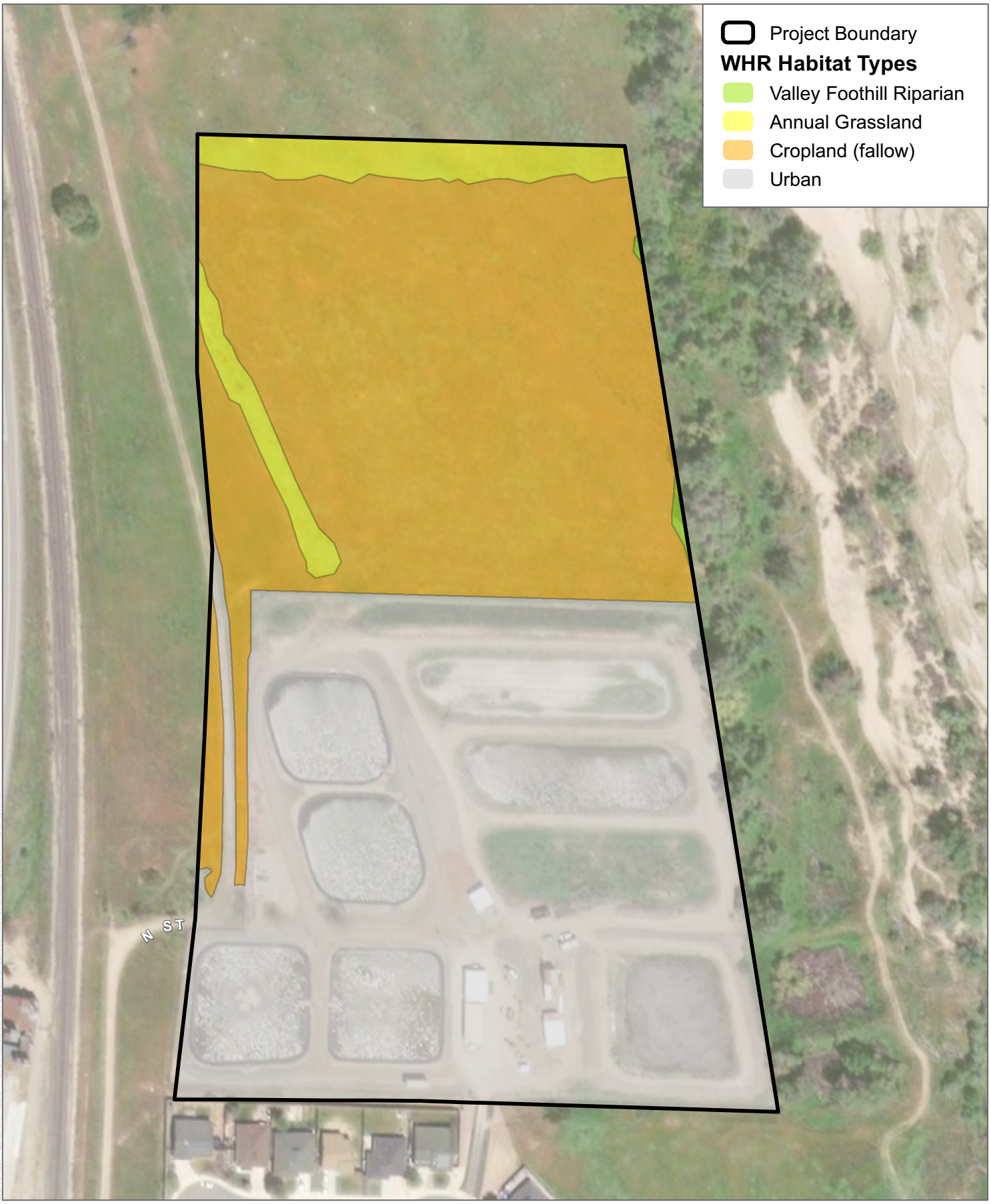
DUDEK

0 1,000 2,000 Feet

FIGURE 1

Project Location

San Miguel Wastewater Treatment Plant Upgrade/Expansion



SOURCE: ESRI World Imagery

DUDEK

0 80 160 Feet

FIGURE 2

WHR Habitat Types

San Miguel Wastewater Treatment Plant Upgrade/Expansion

Attachment C

California Natural Diversity Database Results

Multiple Occurrences per Page

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Species IS (Vulpes macrotis mutica)
 AND Quad IS (San Miguel (3512076) OR Paso Robles (3512066) OR Ranchito Canyon (3512075) OR Wunpost (3512087) OR Bradley (3512077) OR Valleton (3512086) OR Stockdale Mountain (3512085) OR Estrella (3512065) OR Adelaida (3512067))

Vulpes macrotis mutica **Element Code:** AMAJA03041

San Joaquin kit fox

Listing Status:	**Federal:**	Endangered	**CNDDB Element Ranks:**	**Global:**	G4T2
	State:	Threatened		**State:**	S2
	Other:				
Habitat:	**General:**	ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.			
	Micro:	NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.			

Occurrence No.	157	**Map Index:** 55389	**EO Index:** 55389	**Element Last Seen:**	2004-08-09
Occ. Rank:	Fair		**Presence:** Presumed Extant	**Site Last Seen:**	2017-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2018-01-08

Quad Summary: San Miguel (3512076), Bradley (3512077)

County Summary: Monterey, San Luis Obispo

Lat/Long:	35.79362 / -120.74257	**Accuracy:**	non-specific area
UTM:	Zone-10 N3963409 E704003	**Elevation (ft):**	648
PLSS:	T24S, R11E, Sec. 36, NW (M)	**Acres:**	1219.0

Location: CAMP ROBERTS CANTONMENT AREA.

Detailed Location: MANY INDIVIDUALS SIGHTED AROUND BUILDINGS ALONG AVENUE 11, WASHINGTON, MONTANA & ARIZONA BLVDS, & WYOMING AVE. SEVERAL DENS WERE UNDER BUILDINGS.

Ecological: DEVELOPED ANNUAL GRASSLAND; MILITARY HOUSING, MOSTLY ABANDONED/NON-FUNCTIONAL. DENS W/PUPS OBSERVED. FEMALES COLLARED IN REPRODUCTIVE STUDY 1988-91. NO FOXES FOUND 2007-17; SURVEYORS WILL INCREASE EFFORTS TO DETECT LOW #S PRESUMED PRESENT.

General: OBSERVED, 1988-91. 8 OBS, 1993. 8 TRAPPED & 25 OBS, MAR 1994-JAN 1995. 35 OBS FEB-OCT 1995. 60+ OBS, 1996. 1 TRAPPED, 37+ OBS, 1 FOUND HURT & 1 SKULL FOUND, 1997. 2 OBS, 1998 & '99. 1 OBS, 2000 & 2001. 1 FOUND DOR, 2004. NONE OBS 2007-2017.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	400	**Map Index:** 67053	**EO Index:** 67204	**Element Last Seen:**	1996-03-19
Occ. Rank:	Unknown		**Presence:** Presumed Extant	**Site Last Seen:**	1996-03-19
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2017-12-13

Quad Summary: Bradley (3512077)

County Summary: San Luis Obispo

Lat/Long:	35.75937 / -120.80393	**Accuracy:**	non-specific area
UTM:	Zone-10 N3959483 E698542	**Elevation (ft):**	640
PLSS:	T25S, R11E, Sec. 17, NE (M)	**Acres:**	22.0

Location: CAMP ROBERTS, ABOUT 0.7 MI SSW OF NACIMIENTO RANCH.

Detailed Location: 1990 COLLECTION FROM T25S R11E SEC17 SWNE. MAPPED TO INCLUDE MAP LOCATIONS AND COORDINATES GIVEN FOR 1995-1996 DETECTIONS.

Ecological: PREDATION WAS THE LEADING CAUSE OF DEATH IN A 1988-1991 MORTALITY STUDY; PREDATED FOXES WERE RECOVERED FROM THIS VICINITY.

General: 1 COLLECTED ON 3 JUL 1990. 1 CAUGHT & RELEASED ON 6 JAN 1995. 1 FEMALE CAPTURED/RELEASED ON 7 DEC 1995, EAR TAG #5087. 2 DETECTED ON 19 MAR 1996.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	401	**Map Index:**	67054	**EO Index:**	67205	**Element Last Seen:**	2001-03-13
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2017-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2018-01-08

Quad Summary: San Miguel (3512076), Bradley (3512077)

County Summary: San Luis Obispo

Lat/Long:	35.76665 / -120.74111	**Accuracy:**	non-specific area
UTM:	Zone-10 N3960420 E704203	**Elevation (ft):**	755
PLSS:	T25S, R11E, Sec. 12 (M)	**Acres:**	616.0

Location: CAMP ROBERTS, FROM ABOUT 2.8 TO 3.5 MI S OF HWY 101 AT BRADLEY RD & 1.8 TO 3.4 MI WNW OF SAN MIGUEL.

Detailed Location: 16-PART MULTI-FEATURE MAPPED TO INCLUDE LOCATIONS FROM PROVIDED TRS, MAPS, AND COORDINATE TABLES; THROUGHOUT SECTION 11, 12, 13, AND NE SECTION 14.

Ecological: ANNUAL GRASSLAND, DRY RIPARIAN CORRIDORS. DENS AND FAMILY GROUPS OBSERVED. 2001 COLLECTION WAS A SCAVENGED CARCASS. 2017: NO FOXES FOUND SINCE 2007; SURVEYORS NOW INCREASING EFFORTS TO DETECT LOW #S PRESUMED PRESENT.

General: 1 COLLECTED, 1990. 2 OBSERVED, '93. 7 TRAPPED, 2 OBS, '94. 2 TRAPPED, 5 OBS '95. AT LEAST 1 OBS & 2 TRAPPED, '96. 5 OBS, 1 TRAPPED, '97. 2 TRAPPED, '98. AT LEAST 8 OBS, 4 TRAPPED, 1 DOR, '99. 13 OBS, 2000. 1 COLL, '01. NONE OBS 2007-17.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	402	**Map Index:**	67057	**EO Index:**	67206	**Element Last Seen:**	1996-12-12
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1996-12-12
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-14

Quad Summary: Adelaida (3512067)

County Summary: San Luis Obispo

Lat/Long:	35.72249 / -120.75818	**Accuracy:**	non-specific area
UTM:	Zone-10 N3955487 E702771	**Elevation (ft):**	990
PLSS:	T25S, R11E, Sec. 26, SW (M)	**Acres:**	24.0

Location: CAMP ROBERTS, ABOUT 3.7 MI SW OF SAN MIGUEL, JUST W OF PERIMETER RD.

Detailed Location: 1994-95: MAPPED TO PROVIDED MAP AND GIVEN TRS AS SW 1/4 OF SEC 26. 1996: TRAP LOCATION GIVEN AS NE 1/4 OF SEC 26, BUT ACCOMPANYING MAP SHOWS DETECTION IN SW 1/4; INCIDENTAL DETECTION ON MAP BUT NOT IN TABLE.

Ecological: 1988-1991 MORTALITY STUDY FOUND PREDATION TO BE THE LEADING CAUSE OF DEATH FOR KIT FOXES AT CAMP ROBERTS; SOME FOUND DEAD IN THE VICINITY OF THIS OCCURRENCE DIED FROM RODENTICIDE POISONING AND UNKNOWN CAUSES.

General: FEMALES TRAPPED IN VICINITY & TRACKED DURING REPRODUCTIVE STUDY 1988-1991. 1 MALE CAPTURED/RELEASED ON 21 DEC 1994 (EAR TAG #5083); RECAPTURED ON 14 DEC 1995 AND 12 DEC 1996. POSSIBLE INCIDENTAL DETECTION IN 1996 ON UNKNOWN DATE.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	403	**Map Index:**	67058	**EO Index:**	67208	**Element Last Seen:**	2000-08-08
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2000-08-08
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-12

Quad Summary:	Adelaida (3512067)
County Summary:	San Luis Obispo

Lat/Long:	35.73122 / -120.79704	**Accuracy:**	non-specific area
UTM:	Zone-10 N3956375 E699234	**Elevation (ft):**	740
PLSS:	T25S, R11E, Sec. 28, SE (M)	**Acres:**	501.0

Location:	CAMP ROBERTS, ABOUT 6 MILES WEST OF SAN MIGUEL & FROM 2-3 MILES SOUTH OF NACIMIENTO RANCH.
Detailed Location:	1989: COLLECTED FROM T25S R11E SEC 29 NWNE. 1991: COLLECTED FROM SEC 28 NWSE. 1994: DETECTED BETWEEN GENERALS & PERIMETER ROADS, IN SW 1/4 SEC 28 AND SE 1/4 OF SEC 20. 2000: W PERIMETER AT E BLACK BASS POND.
Ecological:	1988-1991 MORTALITY STUDY FOUND THE LEADING CAUSE OF KIT FOX DEATH AT CAMP ROBERTS WAS PREDATION; A KIT FOX FOUND DEAD OF UNKNOWN CAUSES WAS RECORDED IN THE VICINITY.
General:	1 COLLECTED IN 1989 & 1 IN 1991. 2 INDIVIDUALS CAPTURED/RELEASED, DEC 1994 - JAN 1995. 1 MALE FIRST CAPTURED/RELEASED ON 13 DEC 1994 (EAR TAG #5080) & RECAPTURED ON 12 DEC 1995. 1 OBSERVED ON 8 AUG 2000.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	404	**Map Index:**	67059	**EO Index:**	67209	**Element Last Seen:**	2001-02-22
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2001-02-22
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-11-15

Quad Summary:	Bradley (3512077)
County Summary:	San Luis Obispo

Lat/Long:	35.76230 / -120.81086	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3959795 E697907	**Elevation (ft):**	580
PLSS:	T25S, R11E, Sec. 08 (M)	**Acres:**	0.0

Location:	CAMP ROBERTS, ABOUT 0.7 MI SW OF NACIMIENTO RANCH, JUST W OF NACIMIENTO RIVER.
Detailed Location:	MAPPED ACCORDING TO UTM COORDINATES PROVIDED IN SOURCE DOCUMENT.
Ecological:	
General:	1 ADULT OBSERVED ON 22 FEB 2001.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	405	**Map Index:**	67060	**EO Index:**	67210	**Element Last Seen:**	2002-09-17
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	2017-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2018-01-08

Quad Summary:	Bradley (3512077)
County Summary:	San Luis Obispo

Lat/Long:	35.77797 / -120.80662	**Accuracy:**	non-specific area
UTM:	Zone-10 N3961542 E698252	**Elevation (ft):**	585
PLSS:	T25S, R11E, Sec. 5 (M)	**Acres:**	957.0

Location:	VICINITY OF TOWER RD, ABOUT 2.7-5.1 MI SW OF HWY 101 AT BRADLEY RD & NW OF NACIMIENTO RANCH (GNIS), CAMP ROBERTS.
Detailed Location:	"OSCAR/NOVEMBER" SPOTLIGHT ROUTE R4. MAPPED TO PROVIDED MAPS & COORDINATES. SPOTLIGHT SURVEYS, TRAPPING & RADIO COLLAR MONITORING CONDUCTED.
Ecological:	PUPS OR FAMILY GROUPS & DENS OBSERVED. GRASSLAND HABITAT. 2002 SPECIMEN WAS CARCASS OF #5814, "DELILAH," MONITORED FOR SEVERAL YEARS. 2017: NO FOXES FOUND SINCE 2007; SURVEYORS NOW INCREASING EFFORTS TO DETECT LOW #S PRESUMED PRESENT.
General:	OBSERVED, 2 COLLECTED 1989-91. 4 TRAPPED & UP TO 50 OBS, 1994. UP TO 27 OBS, 1995. 2 OBS, 1996. UP TO 23 OBS, 2 TRAPPED, 1997. 8 OBS, 2 TRAPPED, 1998. 6 OBS, 2000. 1 TRAPPED, UP TO 33 OBS, 2001. 2 OBS, 1 COLLECTED, 2002. NONE OBS 2007-2017.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	406	**Map Index:**	67062	**EO Index:**	67211	**Element Last Seen:**	1995-08-22
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-08-22
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-12-13

Quad Summary:	Bradley (3512077)
County Summary:	Monterey

Lat/Long:	35.81466 / -120.75677	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3965714 E702664	**Elevation (ft):**	540
PLSS:	T24S, R11E, Sec. 26, NW (M)	**Acres:**	0.0

Location:	CAMP ROBERTS, ABOUT 0.3 MI SOUTH OF HWY 101 CROSSING OVER THE NACIMIENTO RIVER.
Detailed Location:	MAPPED ACCORDING TO UTM COORDINATES PROVIDED IN SOURCE DOCUMENT.
Ecological:	
General:	1 INDIVIDUAL OBSERVED ON 22 AUG 1995.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	408	**Map Index:**	67064	**EO Index:**	67213	**Element Last Seen:**	1997-03-14
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2017-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2018-01-08

Quad Summary:	San Miguel (3512076)
County Summary:	Monterey

Lat/Long:	35.82964 / -120.74693	**Accuracy:**	non-specific area
UTM:	Zone-10 N3967396 E703516	**Elevation (ft):**	663
PLSS:	T24S, R11E, Sec. 23, SE (M)	**Acres:**	149.0

Location:	ABOUT 0.9 MI NE-1.6 MI NNE OF HWY 101 AT BRADLEY RD, E OF THE SALINAS RIVER & N OF EAST GARRISON, CAMP ROBERTS.
Detailed Location:	1993: CULVERT DEN 23D-7, ~30M SE OF GATE 12 OF MATES COMPOUND. 1994: EAST GARRISON, SPOTLIGHT ROUTE 1. 1995: E. GARRISON & E. GARRISON #2 ROUTES. MAPPED TO PROVIDED MAPS AND COORDINATES. DETECTIONS PRIMARILY THROUGH SPOTLIGHT SURVEYS.
Ecological:	1993: DEN IN CULVERT; SPECIMEN COLLECTED WAS JUST A HEAD WITH PARTIAL BACKBONE, THE REST OF THE CARCASS HAD BEEN SCAVENGED. 2017: NO FOXES FOUND SINCE 2007; SURVEYORS NOW INCREASING EFFORTS TO DETECT LOW #S PRESUMED PRESENT.
General:	1 FOUND DEAD & COLLECTED 3 FEB 1993. DEN W/PAIR & 4 PUPS OBSERVED APR 1993. 3 OBS, 9 MAR 1994. DEN W/PAIR & AT LEAST 2 PUPS OBS MAY 1994. 1 OBS ON 10 APR & 1 ON 15 JUN 1995. 1 OBS, 14 MAR 1997. NONE OBS 2007-2017.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	409	**Map Index:**	67065	**EO Index:**	67214	**Element Last Seen:**	1999-07-22
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1999-07-22
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-04

Quad Summary:	San Miguel (3512076)
County Summary:	Monterey

Lat/Long:	35.81376 / -120.73885	**Accuracy:**	non-specific area
UTM:	Zone-10 N3965651 E704287	**Elevation (ft):**	658
PLSS:	T24S, R11E, Sec. 25, NW (M)	**Acres:**	12.0

Location:	FROM ABOUT 0.8-1.0 MI ESE OF HWY 101 AT BRADLEY RD, ABOUT 2.2 MI NNW OF MCKAY (GNIS), EAST GARRISON, CAMP ROBERTS.
Detailed Location:	1997: MAPPED TO PROVIDED MAP. 1999: EAST OF CAMP ROBERTS AIRFIELD IN EAST GARRISON; MAPPED TO PROVIDED COORDINATES.
Ecological:	1999: COYOTE BUSH SCRUB.
General:	1 OBSERVED DURING SPOTLIGHTING SURVEYS IN 1997. 1 INCIDENTAL OBSERVATION & 1 SEEN DURING SPOTLIGHT SURVEYS IN 1999.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	410	**Map Index:**	67066	**EO Index:**	67215	**Element Last Seen:**	1995-10-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-10-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-11-15

Quad Summary: Bradley (3512077)

County Summary: San Luis Obispo

Lat/Long:	35.75502 / -120.81120	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3958987 E697894	**Elevation (ft):**	650
PLSS:	T25S, R11E, Sec. 17 (M)	**Acres:**	0.0

Location: CAMP ROBERTS, ABOUT 1.1 MI SSW OF NACIMIENTO RANCH, NEAR BOY SCOUT RD.

Detailed Location:

Ecological:

General: 1 INDIVIDUAL CAPTURED/RELEASE DURING MAR-DEC 1994. 1 INDIVIDUAL OBSERVED IN SPOTLIGHT SURVEY CONDUCTED DURING MAY, JUN & OCT 1995.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	411	**Map Index:**	67067	**EO Index:**	67216	**Element Last Seen:**	1995-10-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-10-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-11-15

Quad Summary: Bradley (3512077)

County Summary: San Luis Obispo

Lat/Long:	35.75889 / -120.82748	**Accuracy:**	non-specific area
UTM:	Zone-10 N3959383 E696413	**Elevation (ft):**	680
PLSS:	T25S, R11E, Sec. 18, NE (M)	**Acres:**	24.0

Location: CAMP ROBERTS, JUST N OF THE INTERSECTION OF TOWER RD & BIVOUVAC RD.

Detailed Location:

Ecological:

General: 1 INDIVIDUAL OBSERVED IN SPOTLIGHT SURVEY CONDUCTED MAR TO DEC 1994 AND 1 OBSERVED IN SPOTLIGHT SURVEY CONDUCTED DURING MAY, JUN & OCT 1995.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	412	**Map Index:**	67068	**EO Index:**	67217	**Element Last Seen:**	1995-01-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-01-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-11-15

Quad Summary: Bradley (3512077)

County Summary: San Luis Obispo

Lat/Long:	35.75269 / -120.79886	**Accuracy:**	80 meters
UTM:	Zone-10 N3958753 E699016	**Elevation (ft):**	790
PLSS:	T25S, R11E, Sec. 16, SW (M)	**Acres:**	0.0

Location: CAMP ROBERTS, ABOUT 1.1 MI S OF NACIMIENTO RANCH, JUST W OF GENERALS RD.

Detailed Location:

Ecological:

General: 1 INDIVIDUAL CAPTURED/TRAPPED BETWEEN DEC 1994 AND JAN 1995.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	413	**Map Index:**	67069	**EO Index:**	67218	**Element Last Seen:**	1996-12-18
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1996-12-18
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-12

Quad Summary:	Adelaida (3512067)
County Summary:	San Luis Obispo

Lat/Long:	35.7263 / -120.78438	**Accuracy:**	non-specific area
UTM:	Zone-10 N3955854 E700392	**Elevation (ft):**	994
PLSS:	T25S, R11E, Sec. 28, NE (M)	**Acres:**	69.0

Location:	CAMP ROBERTS, NEAR INTERSECTION OF GENERALS RD & CANYON RD.
Detailed Location:	MAPPED TO INCLUDE PROVIDED MAP LOCATIONS. SPOTLIGHT ROUTE #6, GENERALS RD.
Ecological:	
General:	FEMALE #5063 CAUGHT & RELEASED ON 15 DEC 1994. 1 OBSERVED DURING SPOTLIGHT SURVEYS 12 OCT 1994. 1 OBSERVED DURING SPOTLIGHTING ON 4 OCT 1995. 1 TRAPPED & 1 OBSERVED IN 1996.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	416	**Map Index:**	67074	**EO Index:**	67223	**Element Last Seen:**	1995-01-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-01-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-11-15

Quad Summary:	Bradley (3512077)
County Summary:	San Luis Obispo

Lat/Long:	35.76031 / -120.79317	**Accuracy:**	80 meters
UTM:	Zone-10 N3959609 E699511	**Elevation (ft):**	670
PLSS:	T25S, R11E, Sec. 16, NW (M)	**Acres:**	0.0

Location:	CAMP ROBERTS, ABOUT 0.7 MI SE OF NACIMIENTO RANCH & E OF GENERALS RD.
Detailed Location:	
Ecological:	
General:	1 INDIVIDUAL CAPTURED/RELEASED BETWEEN DEC 1994 & JAN 1995.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	417	**Map Index:**	67075	**EO Index:**	67224	**Element Last Seen:**	1997-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1997-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-13

Quad Summary: Adelaida (3512067)

County Summary: San Luis Obispo

Lat/Long:	35.72047 / -120.77324	**Accuracy:**	non-specific area
UTM:	Zone-10 N3955231 E701415	**Elevation (ft):**	931
PLSS:	T25S, R11E, Sec. 27, SW (M)	**Acres:**	135.0

Location: CAMP ROBERTS, ABOUT 2.5 MI NE OF CHIMNEY ROCK, ON EITHER SIDE OF GENERALS RD.

Detailed Location: MAPPED TO INCLUDE DETECTION LOCATIONS FROM MAPS AND TABLES GIVEN IN REPORTS, AND 1991 SPECIMEN LOCALITY GIVEN AS T25S R11E SEC 27 SESE. 1997 DETECTION INCLUDED ON MAP PROVIDED WITH REPORT, BUT NOT IN TABLE OF SIGHTINGS.

Ecological: 1988-1991 MORTALITY STUDY FOUND THAT PREDATION WAS THE LEADING CAUSE OF DEATH FOR KIT FOXES AT CAMP ROBERTS; A PREDATED KIT FOX WAS RECOVERED FROM THIS VICINITY DURING THE STUDY.

General: 1 COLLECTED ON 7 MAR 1991. MALE #5080 CAUGHT/RELEASED & RECAPTURED IN DEC 1994. FEMALE #5085 CAUGHT & RECAPTURED IN DEC 1996, 2 OBSERVED DURING SPOTLIGHT SURVEYS IN 1996. 1 OBS DURING SPOTLIGHT SURVEY IN 1997.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	418	**Map Index:**	67076	**EO Index:**	67225	**Element Last Seen:**	1996-12-03
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1996-12-03
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-14

Quad Summary: Adelaida (3512067)

County Summary: San Luis Obispo

Lat/Long:	35.7113 / -120.77354	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3954213 E701411	**Elevation (ft):**	952
PLSS:	T25S, R11E, Sec. 34, NE (M)	**Acres:**	280.0

Location: CAMP ROBERTS, ABOUT 2.2 MI NE OF CHIMNEY ROCK, JUST NE OF THE INTERSECTION OF GENERALS RD & EAST PERIMETER RD.

Detailed Location: MAPPED TO INCLUDE MAPPED DETECTION LOCATIONS AND TRS. 1996 TRAP LOCATION GIVEN AS SW 1/4 SEC 34 T25S R11E, THOUGH ACCOMPANYING MAP SHOWS TRAP DETECTION IN NE 1/4 OF SEC 34.

Ecological: 1988-1991 MORTALITY STUDY FOUND PREDATION TO BE THE LEADING CAUSE OF DEATH FOR KIT FOXES AT CAMP ROBERTS; FOXES FOUND DEAD IN VICINITY OF THIS OCCURRENCE DIED FROM RODENTICIDE POISONING, RABIES AND UNKNOWN CAUSES.

General: FEMALES TRAPPED FROM VICINITY & TRACKED DURING REPRODUCTIVE STUDY 1988-1991.1 INDIVIDUAL CAUGHT AND RELEASED BETWEEN DEC 1994 AND JAN 1995. MALE #5083 CAUGHT AND RELEASED ON 3 DEC 1996.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	419	**Map Index:**	67077	**EO Index:**	67226	**Element Last Seen:**	1996-03-21
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1996-03-21
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-08

Quad Summary:	Paso Robles (3512066)
County Summary:	San Luis Obispo

Lat/Long:	35.74316 / -120.74021	**Accuracy:**	non-specific area
UTM:	Zone-10 N3957816 E704345	**Elevation (ft):**	840
PLSS:	T25S, R11E, Sec. 24, NW (M)	**Acres:**	132.0

Location:	CAMP ROBERTS, ABOUT 1.1 AIR MI SSW OF INTERSECTION OF POOP OUT RD AND COUNTY/BEE ROCK RD (10TH ST).
Detailed Location:	MAPPED TO INCLUDE GIVEN TRS, MAP LOCATIONS, AND COORDINATES.
Ecological:	
General:	1 COLLECTED ON 5 NOV 1990. 1 INDIVIDUAL CAUGHT & RELEASED ON 21 DEC 1994. 1 DETECTED ON 5 JAN 1995. 1 OBSERVED ON 21 MAR 1996.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	420	**Map Index:**	67078	**EO Index:**	67227	**Element Last Seen:**	1994-03-10
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1994-03-10
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-13

Quad Summary:	San Miguel (3512076), Bradley (3512077)
County Summary:	Monterey

Lat/Long:	35.84763 / -120.74907	**Accuracy:**	non-specific area
UTM:	Zone-10 N3969388 E703277	**Elevation (ft):**	641
PLSS:	T24S, R11E, Sec. 14, NE (M)	**Acres:**	38.0

Location:	ABOUT 1.5 MI SE OF BRADLEY RD AT HARE CANYON RD & 2.3 MI NNE OF HWY 101 AT BRADLEY RD, N OF EAST GARRISON, CAMP ROBERTS.
Detailed Location:	1993: GATE 16 RD, NEAR INTERSECTION OF GATE 17 RD IN EAST GARRISON; MAPPED TO PROVIDED COORDINATES. 1994: SPOTLIGHT SURVEY ROUTE 1 - EAST GARRISON, AT MILE 2.7; MAPPED TO PROVIDED MAP.
Ecological:	
General:	1 FEMALE CAUGHT & RELEASED IN THE VICINITY DURING REPRODUCTION STUDIES 1988-1991. 1 ADULT OBSERVED DURING SPOTLIGHTING, AFTER OFFICIAL OBSERVATION PERIOD, IN 1993. 1 INDIVIDUAL OBSERVED IN SPOTLIGHT SURVEY ON 10 MAR 1994.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	421	**Map Index:**	67079	**EO Index:**	67228	**Element Last Seen:**	1994-12-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1994-12-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-11-15

Quad Summary: Bradley (3512077)
County Summary: Monterey

Lat/Long:	35.84653 / -120.76517	**Accuracy:**	80 meters
UTM:	Zone-10 N3969233 E701825	**Elevation (ft):**	590
PLSS:	T24S, R11E, Sec. 15, NE (M)	**Acres:**	0.0

Location: CAMP ROBERTS, ABOUT 2.4 MILES ESE OF BRADLEY ALONG BRADLEY ROAD, JUST WEST OF HWY 101.
Detailed Location:
Ecological:
General: 1 INDIVIDUAL OBSERVED IN SPOTLIGHT SURVEY DURING MAR TO DEC 1994.
Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	422	**Map Index:**	67398	**EO Index:**	67229	**Element Last Seen:**	1997-06-03
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1997-06-03
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-13

Quad Summary: Bradley (3512077)
County Summary: Monterey

Lat/Long:	35.83335 / -120.80846	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3967681 E697947	**Elevation (ft):**	560
PLSS:	T24S, R11E, Sec. 20 (M)	**Acres:**	0.0

Location: CAMP ROBERTS, SAN ANTONIO ROAD, ABOUT 1.7 AIR MILES SOUTH OF HWY 101 AT SAN ANTONIO RIVER.
Detailed Location:
Ecological:
General: 1 INDIVIDUAL OBSERVED DURING SPOTLIGHT SURVEY ON 3 JUN 1997.
Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	423	**Map Index:**	67082	**EO Index:**	67230	**Element Last Seen:**	2001-08-02
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2001-08-02
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-11-15

Quad Summary: Bradley (3512077)
County Summary: Monterey

Lat/Long:	35.82093 / -120.79486	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3966332 E699207	**Elevation (ft):**	900
PLSS:	T24S, R11E, Sec. 21 (M)	**Acres:**	0.0

Location: CAMP ROBERTS, ABOUT 2.9 MI S OF BRADLEY AND 1.2 MI E OF SAN ANTONIO RIVER.
Detailed Location: MAPPED ACCORDING TO UTM COORDINATES PROVIDED BY SOURCE.
Ecological:
General: 2 ADULTS & 2 JUVENILES OBSERVED DURING AERIAL SURVEY ON 2 AUG 2001.
Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	424	**Map Index:**	67081	**EO Index:**	67231	**Element Last Seen:**	2001-06-20
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2001-06-20
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-11-15

Quad Summary: Bradley (3512077)

County Summary: Monterey

Lat/Long:	35.80296 / -120.77789	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3964373 E700785	**Elevation (ft):**	570
PLSS:	T24S, R11E, Sec. 34, NW (M)	**Acres:**	0.0

Location: CAMP ROBERTS, ABOUT 1.2 ROAD MI W OF INTERSECTION OF BRADLEY RD AND TOWER RD.

Detailed Location: MAPPED ACCORDING TO UTM COORDINATES PROVIDED BY SOURCE.

Ecological:

General: 3 ADULTS & 4 JUVENILES OBSERVED ON 20 JUN 2001.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	425	**Map Index:**	67083	**EO Index:**	67232	**Element Last Seen:**	1995-01-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-01-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-11-15

Quad Summary: Bradley (3512077)

County Summary: Monterey

Lat/Long:	35.79503 / -120.76864	**Accuracy:**	80 meters
UTM:	Zone-10 N3963512 E701642	**Elevation (ft):**	600
PLSS:	T24S, R11E, Sec. 34, SE (M)	**Acres:**	0.0

Location: CAMP ROBERTS, ABOUT 0.24 ROAD MILES W OF INTERSECTION OF PERIMETER RD AND FIELD RD.

Detailed Location:

Ecological:

General: 1 INDIVIDUAL CAPTURED/RELEASED BETWEEN DEC 1994 AND JAN 1995.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	426	**Map Index:**	67084	**EO Index:**	67233	**Element Last Seen:**	1994-12-09
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1994-12-09
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-14

Quad Summary: Bradley (3512077)

County Summary: Monterey

Lat/Long:	35.79454 / -120.77596	**Accuracy:**	non-specific area
UTM:	Zone-10 N3963443 E700982	**Elevation (ft):**	600
PLSS:	T24S, R11E, Sec. 34, SW (M)	**Acres:**	37.0

Location: ALONG PERIMETER ROAD, ABOUT 2.2 AIR MI W OF HWY 101, SE OF NACIMIENTO RIVER, CAMP ROBERTS.

Detailed Location: MAPPED TO INCLUDE PROVIDED COORDINATES AND LOCATIONS DEPICTED ON MAPS.

Ecological: DEN OBSERVED WITH MULTIPLE ENTRANCES INCLUDING CULVERT.

General: DEN WITH 2 PUPS OBSERVED ON 27 MAY 1994. 1 PUP SEEN ENTERING CULVERT ON 31 MAY 1994. FEMALE #4114 CAUGHT/RELEASED ON 9 DEC 1994.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	427	**Map Index:**	67085	**EO Index:**	67234	**Element Last Seen:**	1999-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1999-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-14

Quad Summary:	Bradley (3512077)
County Summary:	San Luis Obispo

Lat/Long:	35.77704 / -120.78493	**Accuracy:**	non-specific area
UTM:	Zone-10 N3961483 E700216	**Elevation (ft):**	629
PLSS:	T25S, R11E, Sec. 4, SE (M)	**Acres:**	41.0

Location:	CAMP ROBERTS, ABOUT 0.3-0.6 MILES SE OF BEE ROCK RD (10TH ST) AT PERIMETER RD & 3.1 MILES SW OF HWY 101 AT BRADLEY RD.
Detailed Location:	MAPPED TO PROVIDED MAPS AND COORDINATES. 1991 SPECIMEN LOCALITY GIVEN AS T25S R11E SEC 4 SESE.
Ecological:	1988-1991 MORTALITY STUDY FOUND THAT PREDATION WAS THE LEADING CAUSE OF DEATH FOR KIT FOXES AT CAMP ROBERTS; FOXES KILLED BY PREDATION AND RABIES WERE RECOVERED FROM THIS VICINITY.
General:	1 COLLECTED ON 10 JUL 1991. 2 TRAPPED & RELEASED IN DEC 1994. 1 INDIVIDUAL OBSERVED IN SPOTLIGHT SURVEY, 1997. 2 TRAPPED IN 1999.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	428	**Map Index:**	67089	**EO Index:**	67238	**Element Last Seen:**	2000-09-26
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2000-09-26
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-14

Quad Summary:	Bradley (3512077)
County Summary:	San Luis Obispo

Lat/Long:	35.77366 / -120.76864	**Accuracy:**	non-specific area
UTM:	Zone-10 N3961141 E701697	**Elevation (ft):**	756
PLSS:	T25S, R11E, Sec. 10, NE (M)	**Acres:**	108.0

Location:	ABOUT 1.2 MI ESE OF PERIMETER RD AT BEE ROCK RD (=10TH ST) & 2.75 MI SSW OF HWY 101 AT BRADLEY RD, CAMP ROBERTS.
Detailed Location:	1991: SPECIMEN LOCALITY GIVEN AS T25S R11E SEC 10 NESE, ATTRIBUTED HERE. 1994-2000: MAPPED TO PROVIDED MAPS AND COORDINATES.
Ecological:	GRASSLAND. FEMALES TRAPPED IN VICINITY & TRACKED DURING REPRODUCTIVE STUDY 1988-1991.
General:	1 COLLECTED ON 25 OCT 1991. 2 INDIVDUALS OBSERVED JUN-JUL 1994 & 1 TRAPPED & RECAPTURED TWICE IN DEC 1994. 3 TRAPPED IN 1996. 1 INDIVIDUAL OBSERVED DURING SPOTLIGHT SURVEY IN 1997. 1 OBSERVED, 1 TRAPPED IN 1999. 1 OBSERVED ON 26 SEP 2000.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	429	**Map Index:**	67090	**EO Index:**	67239	**Element Last Seen:**	1996-12-18
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1996-12-18
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-13

Quad Summary: Bradley (3512077)

County Summary: San Luis Obispo

Lat/Long:	35.76258 / -120.76761	**Accuracy:**	non-specific area
UTM:	Zone-10 N3959914 E701817	**Elevation (ft):**	750
PLSS:	T25S, R11E, Sec. 10 (M)	**Acres:**	24.0

Location: CAMP ROBERTS, ABOUT 1.9 MI ESE OF NACIMIENTO RANCH.

Detailed Location: MAPPED TO INCLUDE LOCATIONS FROM MAP OF DETECTIONS IN 1994. 1996 TRAP LOCATION GIVEN AS SE 1/4 SEC 10 T25S R11E.

Ecological: 1988-1991 MORTALITY STUDY FOUND THAT PREDATION WAS THE LEADING CAUSE OF DEATH FOR KIT FOXES AT CAMP ROBERTS; A KIT FOX DEAD FROM UNKNOWN CAUSES WAS RECOVERED FROM THIS VICINITY DURING THE STUDY.

General: FEMALE #5082 CAUGHT AND RELEASED ON 15 DEC, MALE #5055 CAUGHT AND RELEASED ON 16 DEC 1994. MALE #5086 CAUGHT AND RELEASED 18 DEC 1996.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	430	**Map Index:**	67091	**EO Index:**	67240	**Element Last Seen:**	1995-01-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-01-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-11-15

Quad Summary: Bradley (3512077)

County Summary: San Luis Obispo

Lat/Long:	35.76012 / -120.77792	**Accuracy:**	80 meters
UTM:	Zone-10 N3959620 E700891	**Elevation (ft):**	870
PLSS:	T25S, R11E, Sec. 15, NW (M)	**Acres:**	0.0

Location: CAMP ROBERTS, ABOUT 1.4 MI SE OF NACIMIENTO RANCH.

Detailed Location:

Ecological:

General: 1 INDIVIDUAL CAPTURED/RELEASED BETWEEN DEC 1994 AND JAN 1995.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	431	**Map Index:**	67092	**EO Index:**	67241	**Element Last Seen:**	1994-12-14
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1994-12-14
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-14

Quad Summary: Bradley (3512077)

County Summary: San Luis Obispo

Lat/Long:	35.75465 / -120.77599	**Accuracy:**	80 meters
UTM:	Zone-10 N3959017 E701079	**Elevation (ft):**	860
PLSS:	T25S, R11E, Sec. 15 (M)	**Acres:**	0.0

Location: CAMP ROBERTS, ABOUT 1.7 MI SE OF NACIMIENTO RANCH.

Detailed Location: MAPPED TO LOCATION FROM MAP OF 1994 DETECTIONS. 1991 SPECIMEN LOCALITY GIVEN AS T25S R11E SEC 15 SENW.

Ecological:

General: 1 COLLECTED ON 18 JAN 1991. MALE #5081 CAUGHT AND RELEASED ON 14 DEC 1994.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	941	**Map Index:**	67850	**EO Index:**	68001	**Element Last Seen:**	1991-06-05
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	1991-06-05
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2007-02-23

Quad Summary:	Paso Robles (3512066)
County Summary:	San Luis Obispo

Lat/Long:	35.63148 / -120.64450	**Accuracy:**	non-specific area
UTM:	Zone-10 N3945630 E713298	**Elevation (ft):**	900
PLSS:	T26S, R12E, Sec. 26, SE (M)	**Acres:**	42.0

Location:	E OF PASO ROBLES, ABOUT 0.9 MI SE OF INTERSECTION OF UNION RD AND GOLDEN HILL RD.
Detailed Location:	SOURCES GIVE DIRECTIONS AS BOTH "WESTERN 1/2 OF CHANDLER RANCH WITHIN CITY LIMITS OF PASO ROBLES" AND "NORTHERN PORTION OF CHANDLER RANCH".
Ecological:	PRIMARILY GRAZED VALLEY GRASSLAND AND DRY LAND FARMING SURROUNDING OAK WOODLAND.
General:	FORAGING & DENNING SITE. 1 ADULT OBSERVED ON 8 JUN 1990. AREA SHOWS EXTENSIVE USE BY FOX, POTENTIAL DEN DENSITY OF OVER 0.5 PER ACRE. 1 ADULT WITH PREY IN ITS MOUTH OBSERVED 5 JUN 1991.
Owner/Manager:	PVT

Occurrence No.	943	**Map Index:**	67856	**EO Index:**	68006	**Element Last Seen:**	2014-03-08
Occ. Rank:	Poor			**Presence:**	Presumed Extant	**Site Last Seen:**	2014-03-08
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-11-13

Quad Summary:	Shandon (3512064), Estrella (3512065)
County Summary:	San Luis Obispo

Lat/Long:	35.65199 / -120.50528	**Accuracy:**	non-specific area
UTM:	Zone-10 N3948217 E725850	**Elevation (ft):**	865
PLSS:	T26S, R14E, Sec. 19, SE (M)	**Acres:**	60.0

Location:	FROM ABOUT 0.4 MILES S TO 0.7 MILES SW OF HWY 46 AT RIVER GROVE DR, WHITLEY GARDENS.
Detailed Location:	W POLYGON REPRESENTS LOCATION OF KIT FOX SIGHTING ON 3 JUL 1990 & INCLUDES 2014 DETECTION LOCATION AT SCENT STATION B1 (35.65382, -120.50663). E POLYGON REPRESENTS DEN FOUND IN 1990, E OF THE ESTRELLA RIVER & S OF THE OLD STEEL BRIDGE.
Ecological:	1990: NATIVE PASTURE WITH OAK TREES. 2014: SCAT WAS COLLECTED DURING 6-WEEK BAIT STATION SURVEY AND IDENTIFIED BY DNA ANALYSIS. RED FOX SCAT WAS ALSO PRESENT AT THIS SITE. SURROUNDING AREA USED FOR RANGELAND AND DRY-FARMING BARLEY.
General:	KIT FOX FAMILY AND DEN OBSERVED IN JUL 1990. SCAT DETECTED ON 8 MAR 2014.
Owner/Manager:	UNKNOWN, PVT

Occurrence No.	946	**Map Index:**	67859	**EO Index:**	68009	**Element Last Seen:**	1987-09-29
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1987-09-29
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2007-01-19

Quad Summary: Paso Robles (3512066)

County Summary: San Luis Obispo

Lat/Long:	35.70954 / -120.74582	**Accuracy:**	non-specific area
UTM:	Zone-10 N3954075 E703923	**Elevation (ft):**	860
PLSS:	T25S, R11E, Sec. 36, SW (M)	**Acres:**	35.0

Location: SW OF SAN MIGUEL, E OF MAHONEY RD, N OF SAN MARCOS RD.

Detailed Location: MAPPED IN NW 1/4 OF SW 1/4 OF SECTION 36.

Ecological:

General: FORAGING SITE. 1 ADULT SIGHTED DURING A NIGHT SURVEY ON 29 SEP 1987.

Owner/Manager: UNKNOWN

Occurrence No.	988	**Map Index:**	67935	**EO Index:**	68082	**Element Last Seen:**	1971-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1971-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2007-02-20

Quad Summary: San Miguel (3512076)

County Summary: Monterey

Lat/Long:	35.85447 / -120.72837	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3970190 E705128	**Elevation (ft):**	1010
PLSS:	T24S, R11E, Sec. 12 (M)	**Acres:**	0.0

Location: CAMP ROBERTS MILITARY RESERVATION, ABOUT 4.2 MI ESE OF BRADLEY.

Detailed Location:

Ecological:

General: SIGHTING, ROAD KILL OR DEN PRIOR TO 1972.

Owner/Manager: UNKNOWN

Occurrence No.	989	**Map Index:**	67936	**EO Index:**	68083	**Element Last Seen:**	1975-07-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1975-07-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2007-01-29

Quad Summary: San Miguel (3512076), Bradley (3512077), Valleton (3512086), Wunpost (3512087)

County Summary: Monterey

Lat/Long:	35.87123 / -120.75298	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3971997 E702863	**Elevation (ft):**	730
PLSS:	T24S, R11E, Sec. 02 (M)	**Acres:**	0.0

Location: CAMP ROBERTS MILITARY RESERVATION, ABOUT 2.8 AIR MI ENE OF BRADLEY, HARE CANYON.

Detailed Location:

Ecological:

General: ROAD KILL SOMETIME FROM 1972 THROUGH JUL 1975.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	990	**Map Index:**	67937	**EO Index:**	68084	**Element Last Seen:**	1975-07-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1975-07-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2007-01-29

Quad Summary: Bradley (3512077)

County Summary: Monterey

Lat/Long:	35.86082 / -120.77027	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3970807 E701328	**Elevation (ft):**	520
PLSS:	T24S, R11E, Sec. 10 (M)	**Acres:**	0.0

Location: CAMP ROBERTS MILITARY RESERVATION, ABOUT 1.8 MI E OF BRADLEY NEAR JUNCTION OF BRADLEY RD AND HARE CANYON RD.

Detailed Location:

Ecological:

General: SIGHTING SOMETIME FROM 1972 THROUGH JUL 1975.

Owner/Manager: UNKNOWN

Occurrence No.	991	**Map Index:**	67938	**EO Index:**	68085	**Element Last Seen:**	1975-07-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1975-07-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2007-01-29

Quad Summary: Bradley (3512077)

County Summary: Monterey

Lat/Long:	35.86521 / -120.81614	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3971201 E697175	**Elevation (ft):**	500
PLSS:	T24S, R11E, Sec. 05 (M)	**Acres:**	0.0

Location: JUST W OF BRADLEY, NEAR HWY 101.

Detailed Location:

Ecological:

General: SIGHTING SOMETIME FROM 1972 THROUGH JUL 1975.

Owner/Manager: UNKNOWN

Occurrence No.	992	**Map Index:**	67939	**EO Index:**	68086	**Element Last Seen:**	1975-07-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1975-07-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2007-01-29

Quad Summary: Bradley (3512077)

County Summary: Monterey

Lat/Long:	35.86649 / -120.86307	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3971250 E692934	**Elevation (ft):**	580
PLSS:	T24S, R10E, Sec. 02 (M)	**Acres:**	0.0

Location: HAMES VALLEY, ABOUT 1.4 ROAD MI W OF INTERSECTION OF HWY 101 AND JOLON RD, JUST S OF JOLON RD.

Detailed Location:

Ecological:

General: ROAD KILL SOMETIME FROM 1972 THROUGH JUL 1975.

Owner/Manager: UNKNOWN

Occurrence No.	1175	**Map Index:**	A7158	**EO Index:**	108927	**Element Last Seen:**	1996-05-23
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1996-05-23
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-11-13

Quad Summary:	Adelaida (3512067)
County Summary:	San Luis Obispo

Lat/Long:	35.69997 / -120.76488	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3952974 E702223	**Elevation (ft):**	911
PLSS:	T26S, R11E, Sec. 2, NW (M)	**Acres:**	18.0

Location:	VICINITY OF GENERALS RD, ABOUT 0.8 MILES NORTH OF SAN MARCOS RD AT NACIMIENTO LAKE DR, CAMP ROBERTS.
Detailed Location:	MAPPED TO COORDINATES GIVEN FOR 1996 DETECTION. 1987 COLLECTION WAS FROM NW 1/4 SW 1/4 SEC 2, AND 1989 COLLECTION WAS FROM NE 1/4 NE 1/4 SEC 3; BOTH ARE ATTRIBUTED HERE.
Ecological:	1989: DETECTED IN CONCRETE CULVERT UNDER ROAD (PROBABLY A DEN SITE).
General:	1 COLLECTED ON 24 APR 1987 AND 1 ON 26 DEC 1989. 3 PUPS OBSERVED ON 23 MAY 1996; MORE ANIMALS MAY HAVE BEEN PRESENT BUT UNSEEN.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1179	**Map Index:**	A7189	**EO Index:**	108955	**Element Last Seen:**	1990-05-08
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1990-05-08
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-11-17

Quad Summary:	Paso Robles (3512066), Adelaida (3512067)
County Summary:	San Luis Obispo

Lat/Long:	35.69166 / -120.75013	**Accuracy:**	non-specific area
UTM:	Zone-10 N3952082 E703579	**Elevation (ft):**	902
PLSS:	T26S, R11E, Sec. 2, SE (M)	**Acres:**	45.0

Location:	SOUTH SIDE OF SAN MARCOS RD 0.5 MI E OF THE GENERALS RD JUNCTION & 0.9 MI NNW OF NACIMIENTO LAKE DR AT OAK FLAT RD.
Detailed Location:	MAPPED TO PROVIDED LOCALITY, "CAMP ROBERTS MILITARY RESERVATION, T26S R11E SEC 2 SESE."
Ecological:	
General:	1 COLLECTED ON 8 MAY 1990.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1181	**Map Index:**	A7401	**EO Index:**	109168	**Element Last Seen:**	1999-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1999-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-05

Quad Summary:	Bradley (3512077)
County Summary:	Monterey

Lat/Long:	35.79906 / -120.76619	**Accuracy:**	80 meters
UTM:	Zone-10 N3963964 E701854	**Elevation (ft):**	612
PLSS:	T24S, R11E, Sec. 34, E (M)	**Acres:**	5.0

Location:	ABOUT 1.3 MI SW OF HWY 101 AT BRADLEY RD & 2.3 MI SSW OF THE CONFLUENCE OF THE NACIMIENO & SALINAS RIVERS, CAMP ROBERTS.
Detailed Location:	MAPPED TO PROVIDED COORDINATES.
Ecological:	
General:	1 TRAPPED DURING 1999 MONITORING EFFORTS.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1182	**Map Index:**	A7405	**EO Index:**	109171	**Element Last Seen:**	1999-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1999-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-05

Quad Summary:	Bradley (3512077)
County Summary:	Monterey, San Luis Obispo

Lat/Long:	35.79338 / -120.78913	**Accuracy:**	specific area
UTM:	Zone-10 N3963286 E699795	**Elevation (ft):**	598
PLSS:	T24S, R11E, Sec. 33, S (M)	**Acres:**	10.0

Location:	TOWER RD, N SIDE OF NACIMIENTO RIVER, ABOUT 2.6 MI SW OF HWY 101 AT BRADLEY RD & 3.7 MI NW OF MCKAY, CAMP ROBERTS.
Detailed Location:	MAPPED TO PROVIDED COORDINATES.
Ecological:	
General:	1 DETECTED DURING SPOTLIGHT SURVEYS IN 1998 AND 1 IN 1999.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1183	**Map Index:**	A7454	**EO Index:**	109222	**Element Last Seen:**	1990-01-25
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1990-01-25
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-14

Quad Summary:	Bradley (3512077)
County Summary:	San Luis Obispo

Lat/Long:	35.77716 / -120.8344	**Accuracy:**	non-specific area
UTM:	Zone-10 N3961396 E695743	**Elevation (ft):**	817
PLSS:	T25S, R11E, Sec. 6, SW (M)	**Acres:**	115.0

Location:	ABOUT 1.5 MILES SE OF KING WELL (GNIS) AND 5.1 MILES SW OF HWY 101 AT BRADLEY RD, CAMP ROBERTS.
Detailed Location:	1988 SPECIMEN COLLECTED FROM T25S R11E SEC 7 NWNW. 1990 SPECIMEN COLLECTED FROM T25S R11E SEC 6 SWSW.
Ecological:	MORTALITY STUDY FROM 1988-1991 INDICATED THAT PREDATION WAS THE LEADING CAUSE OF KIT FOX DEATH ON CAMP ROBERTS; SEVERAL PREDATED FOXES FOUND IN THIS VICINITY MAY HAVE INCLUDED THE CATALOGED SPECIMENS MAPPED AT THIS OCCURRENCE.
General:	FEMALE TRAPPED IN VICINITY AND TRACKED DURING REPRODUCTIVE STUDY 1988-1991. 1 COLLECTED ON 19 DEC 1988. 1 COLLECTED ON 25 JAN 1990.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1184	**Map Index:**	A7456	**EO Index:**	109225	**Element Last Seen:**	1999-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1999-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-13

Quad Summary:	Bradley (3512077)
County Summary:	San Luis Obispo

Lat/Long:	35.76836 / -120.79956	**Accuracy:**	non-specific area
UTM:	Zone-10 N3960490 E698914	**Elevation (ft):**	611
PLSS:	T25S, R11E, Sec. 9, W (M)	**Acres:**	31.0

Location:	NEAR THE INTERSECTION OF GENERALS RD AND PERIMETER RD, VICINITY OF NACIMIENTO RANCH (GNIS), CAMP ROBERTS.
Detailed Location:	MAPPED TO PROVIDED COORDINATES.
Ecological:	
General:	1 DETECTED BY SPOTLIGHTING ON 3 MAY 1995. 1 DETECTED BETWEEN SPOTLIGHTING ROUTES ON 21 MAR & 1 ON 22 MAR 1996. 2 INCIDENTAL OBSERVATIONS IN 1999.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1185	**Map Index:**	A7476	**EO Index:**	109242	**Element Last Seen:**	1999-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1999-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-13

Quad Summary:	Bradley (3512077)
County Summary:	San Luis Obispo

Lat/Long:	35.77473 / -120.79331	**Accuracy:**	specific area
UTM:	Zone-10 N3961209 E699464	**Elevation (ft):**	583
PLSS:	T25S, R11E, Sec. 9, NW (M)	**Acres:**	8.0

Location:	VICINITY OF PERIMETER RD, ON SW SIDE OF NACIMIENTO RIVER, ABOUT 3.5 MILES SW OF HWY 101 AT BRADLEY RD, CAMP ROBERTS.
Detailed Location:	MAPPED TO COORDINATES PROVIDED FOR 1996 & 1999 DETECTIONS. 1991 SPECIMEN LOCALITY GIVEN AS T25S R11E SEC 9 SENE.
Ecological:	1996: RIPARIAN VEGETATION PRESENT.
General:	1 COLLECTED ON 7 OCT 1991. 2 OBSERVED ON 23 OCT 1996. 1 DETECTED DURING SPOTLIGHT SURVEYS IN 1999.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1186	**Map Index:**	A7507	**EO Index:**	109278	**Element Last Seen:**	1995-05-24
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-05-24
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-12

Quad Summary:	Paso Robles (3512066), San Miguel (3512076)
County Summary:	San Luis Obispo

Lat/Long:	35.75341 / -120.72628	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3958982 E705578	**Elevation (ft):**	762
PLSS:	T25S, R12E, Sec. 18, SW (M)	**Acres:**	280.0

Location:	SE OF THE INTERSECTION OF 10TH STREET (BEE ROCK RD) AND E PERIMETER/POOPOUT HILL RD, CAMP ROBERTS.
Detailed Location:	SPECIMEN LOCALITY GIVEN AS CAMP ROBERTS MILITARY RESERVATION T25S R12E SEC 18 NWSW. AN UNUSUALLY LARGE NUMBER OF SPECIMENS COLLECTED IN THE 1980S-90S HAVE THIS LOCALITY, SO THIS MAY HAVE BEEN SOME SORT OF DEFAULT GENERIC LOCATION FOR EG&G.
Ecological:	
General:	1 COLLECTED ON UNKNOWN DATE 1980-1998, 1 COLLECTED IN 1984, 3 IN 1986, 3 IN 1987, 4 IN 1988, 9 IN 1989, 14 IN 1990, 6 IN 1991, 1 IN 1992, 3 IN 1994, & 1 IN 1995.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1187	**Map Index:**	A7525	**EO Index:**	109295	**Element Last Seen:**	1998-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1998-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-14

Quad Summary:	Adelaida (3512067), Bradley (3512077)
County Summary:	San Luis Obispo

Lat/Long:	35.75052 / -120.78825	**Accuracy:**	non-specific area
UTM:	Zone-10 N3958534 E699982	**Elevation (ft):**	808
PLSS:	T25S, R11E, Sec. 16, SE (M)	**Acres:**	139.0

Location:	ABOUT 1.5 MILES N OF GENERALS RD AT CANYON RD & 4.2 MI NNE OF CHIMNEY ROCK RD AT NACIMIENTO LAKE DR, CAMP ROBERTS.
Detailed Location:	1990: LOCATION GIVEN AS T25S R11E SEC 16 NESW. 1994: LOCATION GIVEN AS TRAP 119, SE 1/4 SEC 16. 1998: DETECTION AT 699527 3958002. 1996: LOCATION GIVEN AS SE 1/4, SEC 15; T25S, R11E.
Ecological:	PREDATION WAS LEADING CAUSE OF DEATH IN 1988-1991 STUDY; A KIT FOX THAT DIED OF UNKNOWN CAUSES WAS RECORDED FROM THIS VICINITY AND MAY BE THE SAME INDIVIDUAL AS THE 1990 MUSEUM SPECIMEN.
General:	1 COLLECTED ON 6 AUG 1990. FEMALE #4186 CAUGHT & RELEASED ON 13 DEC 1994. FEMALE #4507 CAUGHT IN VICINITY, DEC 1996. AT LEAST 1 DETECTED BY SPOTLIGHTING IN 1998.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1188	**Map Index:**	A7527	**EO Index:**	109304	**Element Last Seen:**	2007-06-11
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2007-06-11
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-12

Quad Summary:	San Miguel (3512076)
County Summary:	Monterey

Lat/Long:	35.81861 / -120.7408	**Accuracy:**	80 meters
UTM:	Zone-10 N3966185 E704098	**Elevation (ft):**	654
PLSS:	T24S, R11E, Sec. 25, NW (M)	**Acres:**	5.0

Location:	W SIDE OF AVE 50 ABOUT 0.1 MI N OF THE AVE 57 INTERSECTION & 0.8 MI ENE OF HWY 101 AT BRADLEY RD, CAMP ROBERTS.
Detailed Location:	MAPPED TO PROVIDED COORDINATES. EAST SIDE OF EAST GARRISON AIRFIELD.
Ecological:	DETECTED BY SPOTLIGHTING. COYOTEBUSH HABITAT IN CANTONMENT AREA.
General:	1 ADULT OBSERVED ON 11 JUN 2007.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1189	**Map Index:**	A7535	**EO Index:**	109315	**Element Last Seen:**	1997-03-10
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1997-03-10
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-14

Quad Summary:	Adelaida (3512067)
County Summary:	San Luis Obispo

Lat/Long:	35.74241 / -120.78123	**Accuracy:**	non-specific area
UTM:	Zone-10 N3957648 E700637	**Elevation (ft):**	1049
PLSS:	T25S, R11E, Sec. 22, NW (M)	**Acres:**	40.0

Location:	ABOUT 2.1 MILES SSE OF NACIMIENTO RANCH (GNIS) & 2.2 MILES NNW OF GENERALS RD AT CANYON RD, CAMP ROBERTS.
Detailed Location:	MAPPED TO PROVIDED MAPS & COORDINATES. SPOTLIGHT ROUTE #6, GENERALS RD.
Ecological:	
General:	1 OBSERVED DURING SPOTLIGHT SURVEYS ON 11 OCT 1994. 1 DETECTED DURING SPOTLIGHT SURVEYS ON 10 MAR 1997.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1190	**Map Index:**	A7536	**EO Index:**	109316	**Element Last Seen:**	1996-10-23
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1996-10-23
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-14

Quad Summary:	Adelaida (3512067)
County Summary:	San Luis Obispo

Lat/Long:	35.71483 / -120.7639	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3954624 E702274	**Elevation (ft):**	884
PLSS:	T25S, R11E, Sec. 35, NW (M)	**Acres:**	18.0

Location:	NEAR E PERIMETER RD, ABOUT 0.5 MI NE OF THE GENERALS RD INTERSECTION & 1.6 MI NW OF TEXAS RD AT DRAKE RD, CAMP ROBERTS.
Detailed Location:	MAPPED TO COORDINATES GIVEN FOR 1996 DETECTION.
Ecological:	1988-1991 MORTALITY STUDY FOUND THE LEADING CAUSE OF KIT FOX DEATH AT CAMP ROBERTS WAS PREDATION; A ROAD-KILLED KIT FOX WAS RECORDED IN THE VICINITY. FEMALES TRAPPED FROM VICINITY & TRACKED DURING REPRODUCTIVE STUDY 1988-1991.
General:	1 FOUND DEAD ON ROAD DURING 1988-1991 STUDY. 1 DETECTED INCIDENTALLY ON 23 OCT 1996.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1191	**Map Index:**	A7538	**EO Index:**	109321	**Element Last Seen:**	1996-06-11
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1996-06-11
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-12

Quad Summary:	Bradley (3512077)
County Summary:	San Luis Obispo

Lat/Long:	35.7871 / -120.75324	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3962664 E703054	**Elevation (ft):**	706
PLSS:	T25S, R11E, Sec. 2, NE (M)	**Acres:**	18.0

Location:	ABOUT 0.4 MILES SW OF AVE 12 AT WASHINGTON BLVD & 2.0 MILES S OF HWY 101 AT BRADLEY RD, CAMP ROBERTS.
Detailed Location:	MAPPED TO PROVIDED COORDINATES.
Ecological:	
General:	1 DETECTED INCIDENTALLY ON 11 JUN 1996.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1192	**Map Index:**	A7539	**EO Index:**	109322	**Element Last Seen:**	1996-08-22
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1996-08-22
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-12

Quad Summary:	San Miguel (3512076)
County Summary:	San Luis Obispo

Lat/Long:	35.77294 / -120.71611	**Accuracy:**	non-specific area
UTM:	Zone-10 N3961171 E706447	**Elevation (ft):**	663
PLSS:	T25S, R12E, Sec. 7, NE (M)	**Acres:**	151.0

Location:	VICINITY OF HWY 101 ABOUT 2.2 MILES SE OF THE A ST OVERPASS, CAMP ROBERTS.
Detailed Location:	1994: TRAP #69, NE 1/4 SECTION 7. 1996: HWY 101 ABOUT 2 MILES SOUTH OF THE "MAIN ENTRANCE" TO CAMP ROBERTS.
Ecological:	
General:	FEMALE #5053 CAUGHT AND RELEASED ON 7 DEC AND AGAIN ON 9 DEC 1994. 1 SUBADULT FEMALE FOUND DEAD ON ROAD ON 22 AUG 1996.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1193	**Map Index:**	A7569	**EO Index:**	109345	**Element Last Seen:**	1990-03-06
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1990-03-06
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-13

Quad Summary:	Bradley (3512077)
County Summary:	San Luis Obispo

Lat/Long:	35.7643 / -120.78597	**Accuracy:**	non-specific area
UTM:	Zone-10 N3960067 E700153	**Elevation (ft):**	791
PLSS:	T25S, R11E, Sec. 9, SE (M)	**Acres:**	44.0

Location:	ABOUT 0.7 MI ESE OF GENERALS RD AT PERIMETER RD & 2.5 MI WNW OF 10TH ST (BEE ROCK RD) AT POOPOUT HILL RD, CAMP ROBERTS.
Detailed Location:	SPECIMEN LOCALITY GIVEN AS T25S R11E SEC 9 SESE.
Ecological:	1988-1991 MORTALITY STUDY FOUND THAT PREDATION WAS THE LEADING CAUSE OF DEATH FOR KIT FOXES ON CAMP ROBERTS; FOXES KILLED BY PREDATION AND UNKNOWN CAUSES WERE RECOVERED FROM THIS VICINITY (THESE MAY HAVE INCLUDED 1991 SPECIMEN).
General:	1 COLLECTED ON 18 JAN 1991.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1194	**Map Index:**	A7573	**EO Index:**	109351	**Element Last Seen:**	1990-06-09
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1990-06-09
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-13

Quad Summary:	Paso Robles (3512066)
County Summary:	San Luis Obispo

Lat/Long:	35.71183 / -120.69739	**Accuracy:**	non-specific area
UTM:	Zone-10 N3954431 E708299	**Elevation (ft):**	658
PLSS:	T25S, R12E, Sec. 32, NE (M)	**Acres:**	75.0

Location:	W SIDE OF HWY 101 ABOUT 2.4 MILES SOUTH OF SAN MIGUEL.
Detailed Location:	SPECIMEN LOCALITY GIVEN AS "CAMP ROBERTS MILITARY RESERVATION T25S R12E SEC32 SENE."
Ecological:	
General:	1 COLLECTED ON 9 JUN 1990.
Owner/Manager:	STATE-CAMP ROBERTS MR

Attachment D

Photographic Documentation



Photo 1. Looking northeast from near the northwest corner of the existing WWTP, showing disked area occupying most of WWTP extension area.



Photo 2. Looking east from near the northwest corner of the existing WWTP, toward the Salinas River, and including northern fence line of the WWTP.



Photo 3. Looking west from near the northeast corner of the existing WWTP, toward the UPRR and development associated with the community of San Miguel.



Photo 4. Looking north along slope at western edge of Project site supporting Annual Grassland, with portion of disked field in foreground.

621 CHAPALA STREET
SANTA BARBARA, CALIFORNIA 93101
T 805.963.0651 F 805.963.2074

September 11, 2020 12704

Kelly Dodds, Director of Utilities
San Miguel Community Services District
1150 Mission Street
San Miguel, California 93451

Subject: *San Miguel Wastewater Treatment Plant Upgrade/Expansion Project, Santa Miguel, San Luis Obispo County, California, San Joaquin Kit Fox Habitat Evaluation*

Dear Mr. Dodds:

This letter report documents the methods and results of a San Joaquin kit fox (*Vulpes macrotis mutica*) habitat evaluation prepared in support of the San Miguel Wastewater Treatment Plant Upgrade/Expansion Project (Project), San Miguel Community Services District. The habitat evaluation was conducted in support of County of San Luis Obispo determination of mitigation required for loss of habitat of San Joaquin kit fox, based on the County's standard Kit Fox Habitat Evaluation Form. The completed form for the Project is included as Attachment A, to be provided to the County of San Luis Obispo.

1 Background and Project Location

The San Miguel Community Services District (SMCSD) proposes the upgrade and expansion of the existing San Miguel Wastewater Treatment Plant (WWTP) located at the north end of Bonita Place, in the community of San Miguel, California. The existing WWTP is located close to the northern limits of the community, within Assessor's Parcel Numbers (APNs) 021-051-015 and 021-051-013, and the expansion is proposed for a portion of APN 021-051-017 adjacent to the existing WWTP on the north. A final design for the Project was not available at the time of preparation of this report, but the expansion is anticipated to occur within a field subject to regular tilling, in the western portion of APN 021-051-017. The Project site is within the community of San Miguel, San Luis Obispo County, California (Attachment B: Figure 1). It includes the existing wastewater treatment plant (WWTP) and the extension area immediately to the north. Residences within the community of San Miguel are to the south, the Salinas River and associated riparian vegetation are to the east, undeveloped space is to the north, and the Union Pacific Railroad (UPRR) and additional development associated with the community of San Miguel are to the west.

3 Methods

To complete the Kit Fox Habitat Evaluation Form, Dudek performed a query of the California Natural Diversity Database (CNDDB) and examined additional standard sources on the recovery of San Joaquin kit fox in the region, including *Recovery Plan of Upland Species of the San Joaquin Valley, California* (USFWS 1998) and *San Joaquin Kit Fox (*Vulpes macrotis mutica*) 5-Year Review: Summary and Evaluation* (USFWS 2010). Dudek Senior Biologist Dave Compton conducted the field assessment on June 11, 2020. Mr. Compton walked the entire Project site, focusing on areas outside the existing WWTP, as the existing site is developed, supports regular human activity,

and is fenced. He searched for evidence of San Joaquin kit fox, including burrows and scat, recorded all burrows observed, and recorded habitat conditions, including mapping vegetation on-site according to California Wildlife Habitat Relationship standards. He also recorded information on surrounding land uses.

4 Results

As noted above, the site is within the community of San Miguel, between the Salinas River to the east and the UPRR to the west. Development from the existing WWTP occupies the southern portion of the site and is separated from the remainder of the site by a 6 foot chain-link fence that extends to the ground and includes outward-oriented barbed wire strands at the top. The UPRR is immediately west of the site. Residences within the community of San Miguel are farther south, and dense development continuous with the existing plant extends south approximately 1.0 mile, and west beyond the UPRR to U.S. 101, approximately 0.25 mile. West of U.S. 101 is a mixture of grasslands, vineyards, and residences. Land uses east of the Salinas River are similar to those west of U.S. 101, including an extensive block of vineyards just outside the eastern boundary of the community of San Miguel. A relatively narrow undeveloped area of grassland continues approximately 0.25 mile north of the Project site, beyond which vineyards and existing development occupy the area between the Salinas River and U.S. 101.

Undeveloped portions of the Project site comprise an area of fallow, disked agriculture (cropland – fallow) immediately north of the existing WWTP, a maintained dirt road through the southwest corner of the disked field, limited amounts of annual grassland, and a strip of riparian vegetation (valley foothill riparian) associated with the Salinas River that overlaps the eastern edge of the site (Attachment B: Figure 2). The disked field that occupies most of the undeveloped portion of the site extends slightly outside the site to the west, forming a narrow band of approximately 130 to 200 feet in width between the Project site and the UPRR. The annual grassland within the site is limited to a narrow strip near the western edge on a low slope that is too steep for disking, and the northern edge of the site, where a larger area of grassland on the neighboring parcel overlaps the Project site. Only three mammal burrows were observed during the assessment. All were located along the western edge of the site, and all were no more than three inches in diameter at the entrance, and consistent with burrows of California ground squirrel (*Spermophilus beecheyi*). No burrows larger than this, and suitable for San Joaquin kit fox, were observed, and no sign of kit fox was observed during the assessment. The attached, completed Kit Fox Habitat Evaluation Form (Attachment A) includes a score of 48 out of 100. The score is relatively low because the Project would not block an existing corridor, because the area proposed for development is small (much less than 40 acres), the site is not immediately adjacent to suitable San Joaquin kit fox habitat, and kit foxes have not been observed within 3 miles of the site within the past 10 years (Attachment C). Note that, although the score on the form reflects that suitable habitat occurs on the site, only 0.9 acres out of 18.8 of the entire site are suitable for denning. Additional details of the assessment are included on the completed form. Photographic documentation is in Attachment D.

4 Discussion

Due to the absence of habitat suitable for occupancy by San Joaquin kit fox, the lack of San Joaquin kit fox sign on the Project site, and potential constraints to movement to the north, south, and west from development, vineyards, and U.S. 101, and based on the score as determined on the Kit Fox Evaluation Form, the County of San Luis Obispo should consider a reduction in the mitigation requirement for the proposed Project. Dudek previously prepared a Kit Fox Habitat Evaluation Form for the 973 K Street Project in the Community of San Miguel. The mitigation ratio required for this project, which occurred in more suitable habitat consisting entirely of annual grassland, was 2:1.

Therefore, we believe the ratio for the WWTP upgrade/expansion should not exceed, and should potentially be less than, 2:1.

If you have any questions regarding the content of this letter report or require additional information, please feel free to contact me at (805) 252-0557 or dcompton@dudek.com.

Sincerely,

Dave Compton
Senior Biologist

John Davis IV
Senior Ecologist

Attachments: A – Kit Fox Habitat Evaluation Form, San Miguel WWTP Upgrade/Expansion
B – Figures
C – CNDDB Results
D – Photo Documentation

cc: Jessica Kinnahan, Dudek

Attachment A

Kit Fox Habitat Evaluation Form

Kit Fox Habitat Evaluation Form

(guidelines)

Cover Sheet

Project Name__San Miguel WWTP Upgrade/Expansion

Date__8/10/2020

ProjectLocation*Insection of Benedict St and Bonita Pl, San Miguel

*Include project vicinity map and project boundary on copy of U.S.G.S. 7.5 minute map (size may be reduced)

U.S.G.S. Quad Map Name
___San Miguel_____

Lat/Long or UTM coordinates (if available)

35° 45' 34" N, 120° 41' 35" W

Project Description: upgrade and expansion of existing wastewater treatment plant.

Project Size 18.8 **Acres** **Amount of Kit Fox Habitat Affected** 8.4 **Acres**

Quantity of WHR Habitat Types Impacted (i.e. - 2 acres annual grassland, 3 acres blue oak woodland)

WHR type:	Cropland (fallow--disked)	7.5	Acres
WHR type	Valley Foothill Riparian	0.03	Acres
WHR type	Annual Grassland	0.9	Acres
WHR type	Urban	10.3	Acres

Comments: Located between the Salinas River to the east and the UPRR to the west. Development from the existing WWTP occupies the southern portion of the site and is separated from the remainder of the site by a chain-link fence that extends to the ground and includes outward-oriented barbed wire strands at the top. The UPRR is immediately west of the site. Residences within the community of San Miguel are farther south, and dense development continuous with the existing plant extends south approximately 1.0 mile, and west beyond the UPRR to U.S. 101, approximately 0.25 mile. West of U.S. 101 is a mixture of grasslands, vineyards, and residences. Land uses east of the Salinas River are similar to those west of U.S. 101, including an extensive block of vineyards just outside the eastern boundary of the community of San Miguel. (next p.)

A relatively narrow undeveloped area of grassland continues approximately 0.25 mile north of the Project site, beyond which vineyards and existing development occupy the area between the Salinas River and U.S. 101.

Undeveloped portions of the Project site comprise an area of fallow, disked agriculture (cropland - fallow) immediately north of the existing WWTP, a maintained dirt road through the southwest corner of the disked field, limited amounts of annual grassland, and a strip of riparian vegetation (valley foothill riparian) associated with the Salinas River that overlaps the eastern edge of the site. The disked field that occupies most of the undeveloped portion of the site extends slightly outside the site to the west, forming a narrow band of approximately 130 to 200 feet in width between the Project site and the UPRR. The annual grassland within the site is limited to a narrow strip near the western edge on a low slope that is too steep for disking, and the northern edge of the site, where a larger area of grassland on the neighboring parcel overlaps the Project site. Only three mammal burrows were observed during the assessment. All were located along the western edge of the site, and all were no more than three inches in diameter at the entrance, and consistent with burrows of California ground squirrel (*Spermophilus beecheyi*). No burrows larger than this, and suitable for San Joaquin kit fox, were observed, and no sign of kit fox was observed during the assessment.

NOTE: Although the answer to question 2 below indicates the presence of suitable habitat, only 0.9 acres of such habitat (annual grassland) occurs on the site.

Form Completed By:

Rev 3/02
G:envdiv/forms/kit fox habitat

San Joaquin Kit Fox Habitat Evaluation form

Is the project area within 10 miles of a recorded San Joaquin kit fox observation or within contiguous suitable habitat as defined in question 2 (A-E)

(Yes)- Continue with evaluation form
No - Evaluation form/surveys are not necessary

1. Importance of the project area relative to Recovery Plan for Upland Species of the San Joaquin Valley, California (Williams et al., 1998)

   A. Project would block or degrade an existing corridor linking core populations or isolate a subpopulation (20)
   B. Project is within core population (15)
   C. Project area is identified within satellite populations (12)
   D. Project area is within a corridor linking satellite populations (10)
   (E.) Project area is not within any of the previously described areas but is within known kit fox range (5)

2. Habitat characteristics of project area.

   A. Annual grassland or saltbush scrub present >50% of site (15)
   (B.) Grassland or saltbush scrub present but comprises<50% of project area (10)
   C. Oak savannah present on >50% of site (8)
   D. Fallow ag fields or grain/alfalfa crops (7)
   E. Orchards/vineyards (5)
   F. Intensively maintained row crops or suitable vegetation absent (0)

3. Isolation of project area.

   A. Project area surrounded by contiguous kit fox habitat as described in Question 2a-e (15)
   B. Project area adjacent to at least 40 acres of contiguous habitat or part of an existing corridor (10)
   (C.) Project area adjacent to <40 acres of habitat but linked by existing corridor (i.e., river, canal, aqueduct) (7)
   D. Project area surrounded by ag but less than 200 yards from habitat (5)

E. Project area completely isolated by row crops or development and is greater than 200 yards from potential habitat (0)

4. Potential for increased mortality as a result of project implementation. Mortality may come from direct (e.g., - construction related) or indirect (e.g., - vehicle strikes due to increases in post development traffic) sources.

A. Increased mortality likely (10)
(B.) Unknown mortality effects (5)
C. No long term effect on mortality (0)

Revised 03-02

5. Amount of potential kit fox habitat affected.

A. >320 acres (10)
B. 160 - 319 acres (7)
C. 80 - 159 acres (5)
D. 40 - 79 acres (3)
(E.) < 40 acres (1)

6. Results of project implementation.

(A.) Project site will be permanently converted and will no longer support foxes (10)
B. Project area will be temporarily impacted but will require periodic disturbance for ongoing maintenance (7)
C. Project area will be temporarily impacted and no maintenance necessary (5)
D. Project will result in changes to agricultural crops (2)
E. No habitat impacts (0)

7. Project Shape

(A.) Large Block (10)
B. Linear with > 40 foot right-of-way (5)
C. Linear with < 40 foot right-of-way (3)

8. Have San Joaquin kit foxes been observed within 3 miles of the project area within the last 10 years?

A. Yes (10)
(B.) No (0)

Scoring

1. Recovery importance ____5___
2. Habitat condition ___10___

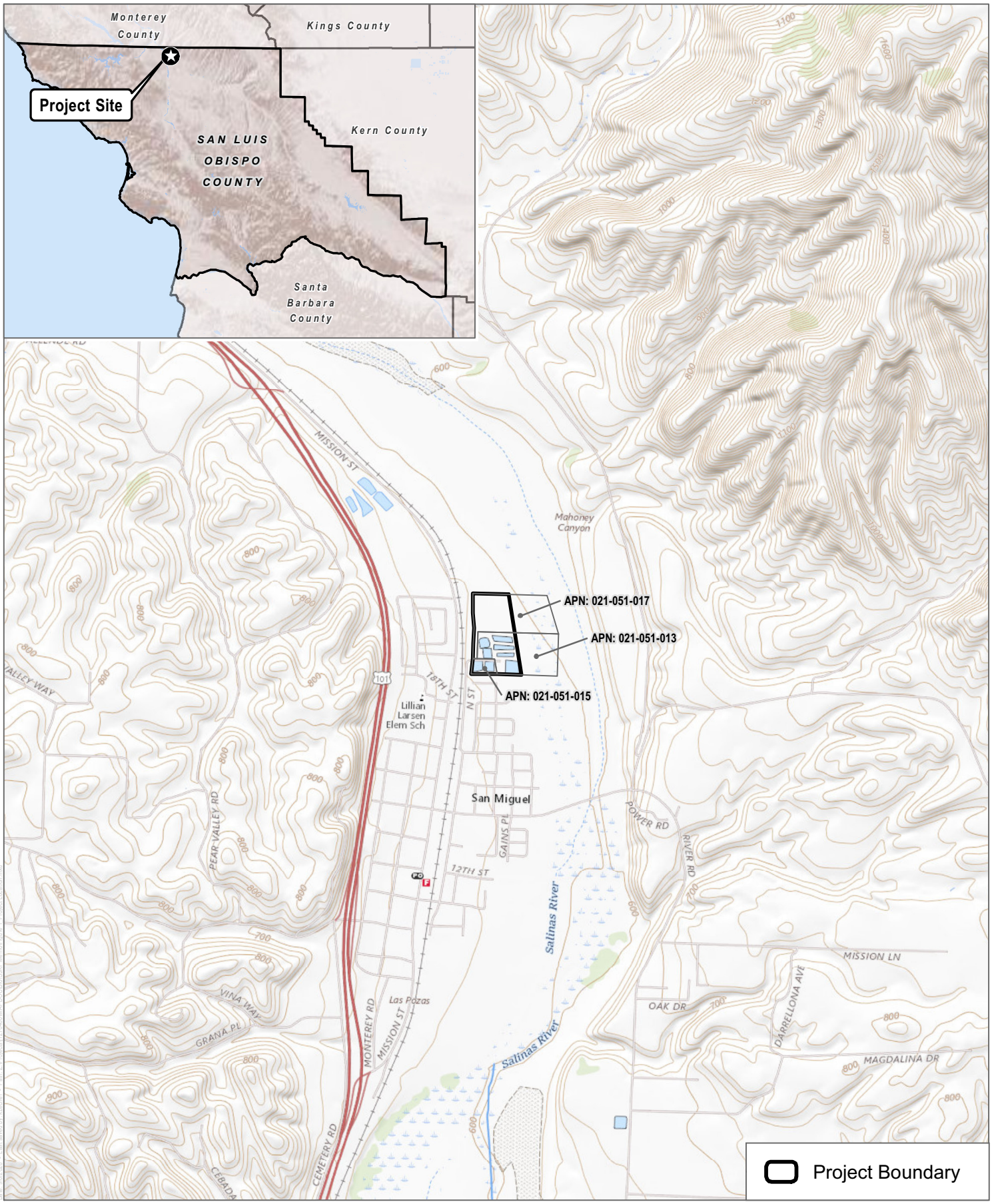
3.	Isolation	_____7__
4.	Mortality	_____5__
5.	Quantity of habitat impacted	_____1___
6.	Project results	____10__
7.	Project shape	____10__
8.	Recent observations	_____0__

TOTAL ____48__

Revised 03/02-lpd

Attachment B

Figures



SOURCE: USGS The National Map - San Miguel and Paso Robles Quadrangles

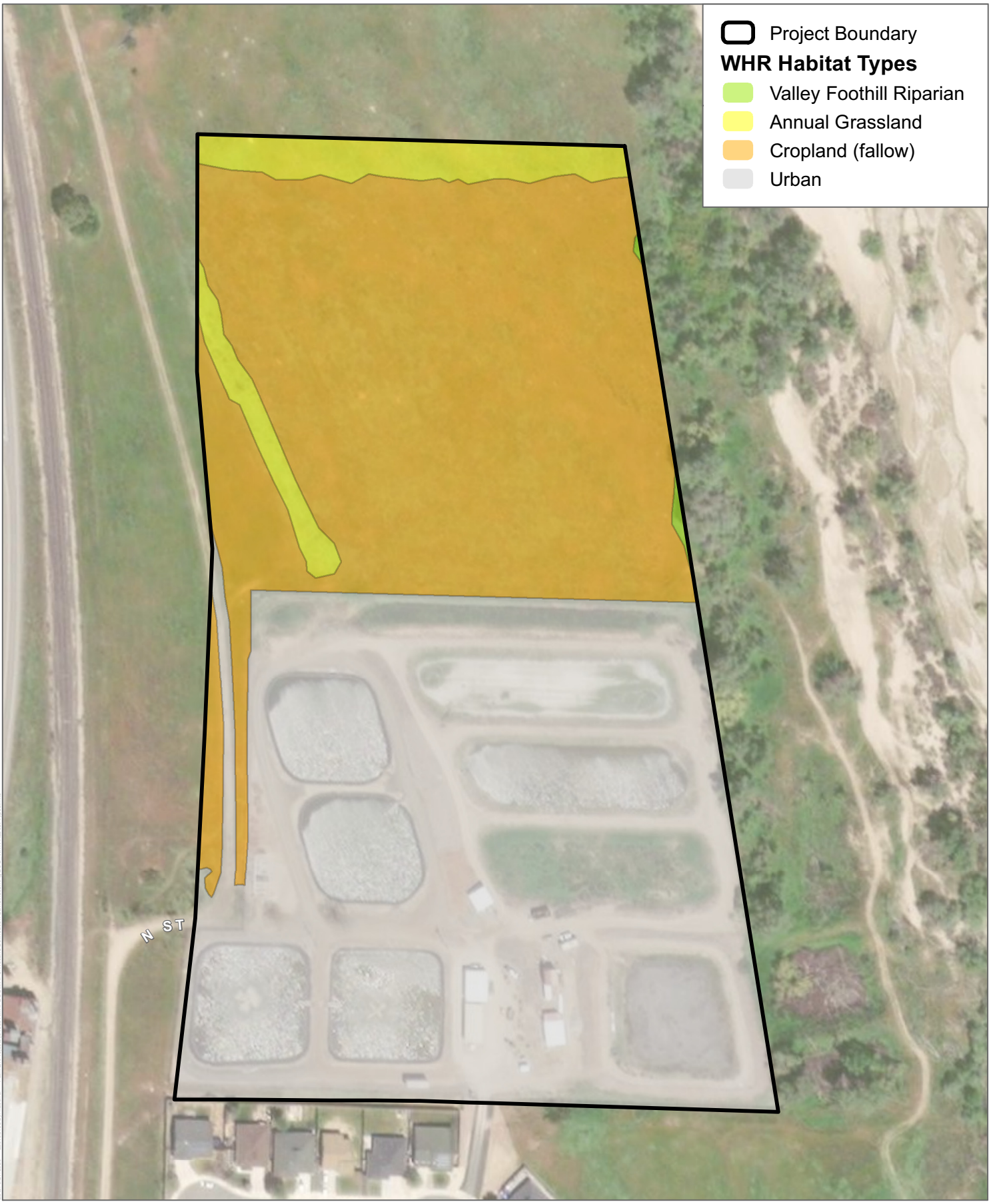
DUDEK

0 1,000 2,000 Feet

FIGURE 1

Project Location

San Miguel Wastewater Treatment Plant Upgrade/Expansion



SOURCE: ESRI World Imagery

DUDEK

0 80 160 Feet

FIGURE 2

WHR Habitat Types

San Miguel Wastewater Treatment Plant Upgrade/Expansion

Attachment C

California Natural Diversity Database Results

Multiple Occurrences per Page

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Species IS (Vulpes macrotis mutica)
 AND Quad IS (San Miguel (3512076) OR Paso Robles (3512066) OR Ranchito Canyon (3512075) OR Wunpost (3512087) OR Bradley (3512077) OR Valleton (3512086) OR Stockdale Mountain (3512085) OR Estrella (3512065) OR Adelaida (3512067))

Vulpes macrotis mutica **Element Code:** AMAJA03041

San Joaquin kit fox

Listing Status:	**Federal:**	Endangered	**CNDDB Element Ranks:**	**Global:**	G4T2
	State:	Threatened		**State:**	S2
	Other:				
Habitat:	**General:**	ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.			
	Micro:	NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.			

Occurrence No.	157	**Map Index:** 55389	**EO Index:** 55389	**Element Last Seen:**	2004-08-09
Occ. Rank:	Fair		**Presence:** Presumed Extant	**Site Last Seen:**	2017-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2018-01-08

Quad Summary: San Miguel (3512076), Bradley (3512077)

County Summary: Monterey, San Luis Obispo

Lat/Long:	35.79362 / -120.74257	**Accuracy:**	non-specific area
UTM:	Zone-10 N3963409 E704003	**Elevation (ft):**	648
PLSS:	T24S, R11E, Sec. 36, NW (M)	**Acres:**	1219.0

Location: CAMP ROBERTS CANTONMENT AREA.

Detailed Location: MANY INDIVIDUALS SIGHTED AROUND BUILDINGS ALONG AVENUE 11, WASHINGTON, MONTANA & ARIZONA BLVDS, & WYOMING AVE. SEVERAL DENS WERE UNDER BUILDINGS.

Ecological: DEVELOPED ANNUAL GRASSLAND; MILITARY HOUSING, MOSTLY ABANDONED/NON-FUNCTIONAL. DENS W/PUPS OBSERVED. FEMALES COLLARED IN REPRODUCTIVE STUDY 1988-91. NO FOXES FOUND 2007-17; SURVEYORS WILL INCREASE EFFORTS TO DETECT LOW #S PRESUMED PRESENT.

General: OBSERVED, 1988-91. 8 OBS, 1993. 8 TRAPPED & 25 OBS, MAR 1994-JAN 1995. 35 OBS FEB-OCT 1995. 60+ OBS, 1996. 1 TRAPPED, 37+ OBS, 1 FOUND HURT & 1 SKULL FOUND, 1997. 2 OBS, 1998 & '99. 1 OBS, 2000 & 2001. 1 FOUND DOR, 2004. NONE OBS 2007-2017.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	400	**Map Index:** 67053	**EO Index:** 67204	**Element Last Seen:**	1996-03-19
Occ. Rank:	Unknown		**Presence:** Presumed Extant	**Site Last Seen:**	1996-03-19
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2017-12-13

Quad Summary: Bradley (3512077)

County Summary: San Luis Obispo

Lat/Long:	35.75937 / -120.80393	**Accuracy:**	non-specific area
UTM:	Zone-10 N3959483 E698542	**Elevation (ft):**	640
PLSS:	T25S, R11E, Sec. 17, NE (M)	**Acres:**	22.0

Location: CAMP ROBERTS, ABOUT 0.7 MI SSW OF NACIMIENTO RANCH.

Detailed Location: 1990 COLLECTION FROM T25S R11E SEC17 SWNE. MAPPED TO INCLUDE MAP LOCATIONS AND COORDINATES GIVEN FOR 1995-1996 DETECTIONS.

Ecological: PREDATION WAS THE LEADING CAUSE OF DEATH IN A 1988-1991 MORTALITY STUDY; PREDATED FOXES WERE RECOVERED FROM THIS VICINITY.

General: 1 COLLECTED ON 3 JUL 1990. 1 CAUGHT & RELEASED ON 6 JAN 1995. 1 FEMALE CAPTURED/RELEASED ON 7 DEC 1995, EAR TAG #5087. 2 DETECTED ON 19 MAR 1996.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	401	**Map Index:**	67054	**EO Index:**	67205	**Element Last Seen:**	2001-03-13
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2017-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2018-01-08

Quad Summary: San Miguel (3512076), Bradley (3512077)

County Summary: San Luis Obispo

Lat/Long:	35.76665 / -120.74111	**Accuracy:**	non-specific area
UTM:	Zone-10 N3960420 E704203	**Elevation (ft):**	755
PLSS:	T25S, R11E, Sec. 12 (M)	**Acres:**	616.0

Location: CAMP ROBERTS, FROM ABOUT 2.8 TO 3.5 MI S OF HWY 101 AT BRADLEY RD & 1.8 TO 3.4 MI WNW OF SAN MIGUEL.

Detailed Location: 16-PART MULTI-FEATURE MAPPED TO INCLUDE LOCATIONS FROM PROVIDED TRS, MAPS, AND COORDINATE TABLES; THROUGHOUT SECTION 11, 12, 13, AND NE SECTION 14.

Ecological: ANNUAL GRASSLAND, DRY RIPARIAN CORRIDORS. DENS AND FAMILY GROUPS OBSERVED. 2001 COLLECTION WAS A SCAVENGED CARCASS. 2017: NO FOXES FOUND SINCE 2007; SURVEYORS NOW INCREASING EFFORTS TO DETECT LOW #S PRESUMED PRESENT.

General: 1 COLLECTED, 1990. 2 OBSERVED, '93. 7 TRAPPED, 2 OBS, '94. 2 TRAPPED, 5 OBS '95. AT LEAST 1 OBS & 2 TRAPPED, '96. 5 OBS, 1 TRAPPED, '97. 2 TRAPPED, '98. AT LEAST 8 OBS, 4 TRAPPED, 1 DOR, '99. 13 OBS, 2000. 1 COLL, '01. NONE OBS 2007-17.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	402	**Map Index:**	67057	**EO Index:**	67206	**Element Last Seen:**	1996-12-12
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1996-12-12
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-14

Quad Summary: Adelaida (3512067)

County Summary: San Luis Obispo

Lat/Long:	35.72249 / -120.75818	**Accuracy:**	non-specific area
UTM:	Zone-10 N3955487 E702771	**Elevation (ft):**	990
PLSS:	T25S, R11E, Sec. 26, SW (M)	**Acres:**	24.0

Location: CAMP ROBERTS, ABOUT 3.7 MI SW OF SAN MIGUEL, JUST W OF PERIMETER RD.

Detailed Location: 1994-95: MAPPED TO PROVIDED MAP AND GIVEN TRS AS SW 1/4 OF SEC 26. 1996: TRAP LOCATION GIVEN AS NE 1/4 OF SEC 26, BUT ACCOMPANYING MAP SHOWS DETECTION IN SW 1/4; INCIDENTAL DETECTION ON MAP BUT NOT IN TABLE.

Ecological: 1988-1991 MORTALITY STUDY FOUND PREDATION TO BE THE LEADING CAUSE OF DEATH FOR KIT FOXES AT CAMP ROBERTS; SOME FOUND DEAD IN THE VICINITY OF THIS OCCURRENCE DIED FROM RODENTICIDE POISONING AND UNKNOWN CAUSES.

General: FEMALES TRAPPED IN VICINITY & TRACKED DURING REPRODUCTIVE STUDY 1988-1991. 1 MALE CAPTURED/RELEASED ON 21 DEC 1994 (EAR TAG #5083); RECAPTURED ON 14 DEC 1995 AND 12 DEC 1996. POSSIBLE INCIDENTAL DETECTION IN 1996 ON UNKNOWN DATE.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	403	**Map Index:**	67058	**EO Index:**	67208	**Element Last Seen:**	2000-08-08
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2000-08-08
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-12

Quad Summary:	Adelaida (3512067)
County Summary:	San Luis Obispo

Lat/Long:	35.73122 / -120.79704	**Accuracy:**	non-specific area
UTM:	Zone-10 N3956375 E699234	**Elevation (ft):**	740
PLSS:	T25S, R11E, Sec. 28, SE (M)	**Acres:**	501.0

Location:	CAMP ROBERTS, ABOUT 6 MILES WEST OF SAN MIGUEL & FROM 2-3 MILES SOUTH OF NACIMIENTO RANCH.
Detailed Location:	1989: COLLECTED FROM T25S R11E SEC 29 NWNE. 1991: COLLECTED FROM SEC 28 NWSE. 1994: DETECTED BETWEEN GENERALS & PERIMETER ROADS, IN SW 1/4 SEC 28 AND SE 1/4 OF SEC 20. 2000: W PERIMETER AT E BLACK BASS POND.
Ecological:	1988-1991 MORTALITY STUDY FOUND THE LEADING CAUSE OF KIT FOX DEATH AT CAMP ROBERTS WAS PREDATION; A KIT FOX FOUND DEAD OF UNKNOWN CAUSES WAS RECORDED IN THE VICINITY.
General:	1 COLLECTED IN 1989 & 1 IN 1991. 2 INDIVIDUALS CAPTURED/RELEASED, DEC 1994 - JAN 1995. 1 MALE FIRST CAPTURED/RELEASED ON 13 DEC 1994 (EAR TAG #5080) & RECAPTURED ON 12 DEC 1995. 1 OBSERVED ON 8 AUG 2000.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	404	**Map Index:**	67059	**EO Index:**	67209	**Element Last Seen:**	2001-02-22
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2001-02-22
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-11-15

Quad Summary:	Bradley (3512077)
County Summary:	San Luis Obispo

Lat/Long:	35.76230 / -120.81086	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3959795 E697907	**Elevation (ft):**	580
PLSS:	T25S, R11E, Sec. 08 (M)	**Acres:**	0.0

Location:	CAMP ROBERTS, ABOUT 0.7 MI SW OF NACIMIENTO RANCH, JUST W OF NACIMIENTO RIVER.
Detailed Location:	MAPPED ACCORDING TO UTM COORDINATES PROVIDED IN SOURCE DOCUMENT.
Ecological:	
General:	1 ADULT OBSERVED ON 22 FEB 2001.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	405	**Map Index:**	67060	**EO Index:**	67210	**Element Last Seen:**	2002-09-17
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	2017-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2018-01-08

Quad Summary:	Bradley (3512077)
County Summary:	San Luis Obispo

Lat/Long:	35.77797 / -120.80662	**Accuracy:**	non-specific area
UTM:	Zone-10 N3961542 E698252	**Elevation (ft):**	585
PLSS:	T25S, R11E, Sec. 5 (M)	**Acres:**	957.0

Location:	VICINITY OF TOWER RD, ABOUT 2.7-5.1 MI SW OF HWY 101 AT BRADLEY RD & NW OF NACIMIENTO RANCH (GNIS), CAMP ROBERTS.
Detailed Location:	"OSCAR/NOVEMBER" SPOTLIGHT ROUTE R4. MAPPED TO PROVIDED MAPS & COORDINATES. SPOTLIGHT SURVEYS, TRAPPING & RADIO COLLAR MONITORING CONDUCTED.
Ecological:	PUPS OR FAMILY GROUPS & DENS OBSERVED. GRASSLAND HABITAT. 2002 SPECIMEN WAS CARCASS OF #5814, "DELILAH," MONITORED FOR SEVERAL YEARS. 2017: NO FOXES FOUND SINCE 2007; SURVEYORS NOW INCREASING EFFORTS TO DETECT LOW #S PRESUMED PRESENT.
General:	OBSERVED, 2 COLLECTED 1989-91. 4 TRAPPED & UP TO 50 OBS, 1994. UP TO 27 OBS, 1995. 2 OBS, 1996. UP TO 23 OBS, 2 TRAPPED, 1997. 8 OBS, 2 TRAPPED, 1998. 6 OBS, 2000. 1 TRAPPED, UP TO 33 OBS, 2001. 2 OBS, 1 COLLECTED, 2002. NONE OBS 2007-2017.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	406	**Map Index:**	67062	**EO Index:**	67211	**Element Last Seen:**	1995-08-22
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-08-22
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-12-13

Quad Summary:	Bradley (3512077)
County Summary:	Monterey

Lat/Long:	35.81466 / -120.75677	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3965714 E702664	**Elevation (ft):**	540
PLSS:	T24S, R11E, Sec. 26, NW (M)	**Acres:**	0.0

Location:	CAMP ROBERTS, ABOUT 0.3 MI SOUTH OF HWY 101 CROSSING OVER THE NACIMIENTO RIVER.
Detailed Location:	MAPPED ACCORDING TO UTM COORDINATES PROVIDED IN SOURCE DOCUMENT.
Ecological:	
General:	1 INDIVIDUAL OBSERVED ON 22 AUG 1995.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	408	**Map Index:**	67064	**EO Index:**	67213	**Element Last Seen:**	1997-03-14
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2017-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2018-01-08

Quad Summary:	San Miguel (3512076)
County Summary:	Monterey

Lat/Long:	35.82964 / -120.74693	**Accuracy:**	non-specific area
UTM:	Zone-10 N3967396 E703516	**Elevation (ft):**	663
PLSS:	T24S, R11E, Sec. 23, SE (M)	**Acres:**	149.0

Location:	ABOUT 0.9 MI NE-1.6 MI NNE OF HWY 101 AT BRADLEY RD, E OF THE SALINAS RIVER & N OF EAST GARRISON, CAMP ROBERTS.
Detailed Location:	1993: CULVERT DEN 23D-7, ~30M SE OF GATE 12 OF MATES COMPOUND. 1994: EAST GARRISON, SPOTLIGHT ROUTE 1. 1995: E. GARRISON & E. GARRISON #2 ROUTES. MAPPED TO PROVIDED MAPS AND COORDINATES. DETECTIONS PRIMARILY THROUGH SPOTLIGHT SURVEYS.
Ecological:	1993: DEN IN CULVERT; SPECIMEN COLLECTED WAS JUST A HEAD WITH PARTIAL BACKBONE, THE REST OF THE CARCASS HAD BEEN SCAVENGED. 2017: NO FOXES FOUND SINCE 2007; SURVEYORS NOW INCREASING EFFORTS TO DETECT LOW #S PRESUMED PRESENT.
General:	1 FOUND DEAD & COLLECTED 3 FEB 1993. DEN W/PAIR & 4 PUPS OBSERVED APR 1993. 3 OBS, 9 MAR 1994. DEN W/PAIR & AT LEAST 2 PUPS OBS MAY 1994. 1 OBS ON 10 APR & 1 ON 15 JUN 1995. 1 OBS, 14 MAR 1997. NONE OBS 2007-2017.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	409	**Map Index:**	67065	**EO Index:**	67214	**Element Last Seen:**	1999-07-22
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1999-07-22
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-04

Quad Summary:	San Miguel (3512076)
County Summary:	Monterey

Lat/Long:	35.81376 / -120.73885	**Accuracy:**	non-specific area
UTM:	Zone-10 N3965651 E704287	**Elevation (ft):**	658
PLSS:	T24S, R11E, Sec. 25, NW (M)	**Acres:**	12.0

Location:	FROM ABOUT 0.8-1.0 MI ESE OF HWY 101 AT BRADLEY RD, ABOUT 2.2 MI NNW OF MCKAY (GNIS), EAST GARRISON, CAMP ROBERTS.
Detailed Location:	1997: MAPPED TO PROVIDED MAP. 1999: EAST OF CAMP ROBERTS AIRFIELD IN EAST GARRISON; MAPPED TO PROVIDED COORDINATES.
Ecological:	1999: COYOTE BUSH SCRUB.
General:	1 OBSERVED DURING SPOTLIGHTING SURVEYS IN 1997. 1 INCIDENTAL OBSERVATION & 1 SEEN DURING SPOTLIGHT SURVEYS IN 1999.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	410	**Map Index:**	67066	**EO Index:**	67215	**Element Last Seen:**	1995-10-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-10-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-11-15

Quad Summary: Bradley (3512077)

County Summary: San Luis Obispo

Lat/Long:	35.75502 / -120.81120	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3958987 E697894	**Elevation (ft):**	650
PLSS:	T25S, R11E, Sec. 17 (M)	**Acres:**	0.0

Location: CAMP ROBERTS, ABOUT 1.1 MI SSW OF NACIMIENTO RANCH, NEAR BOY SCOUT RD.

Detailed Location:

Ecological:

General: 1 INDIVIDUAL CAPTURED/RELEASE DURING MAR-DEC 1994. 1 INDIVIDUAL OBSERVED IN SPOTLIGHT SURVEY CONDUCTED DURING MAY, JUN & OCT 1995.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	411	**Map Index:**	67067	**EO Index:**	67216	**Element Last Seen:**	1995-10-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-10-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-11-15

Quad Summary: Bradley (3512077)

County Summary: San Luis Obispo

Lat/Long:	35.75889 / -120.82748	**Accuracy:**	non-specific area
UTM:	Zone-10 N3959383 E696413	**Elevation (ft):**	680
PLSS:	T25S, R11E, Sec. 18, NE (M)	**Acres:**	24.0

Location: CAMP ROBERTS, JUST N OF THE INTERSECTION OF TOWER RD & BIVOUVAC RD.

Detailed Location:

Ecological:

General: 1 INDIVIDUAL OBSERVED IN SPOTLIGHT SURVEY CONDUCTED MAR TO DEC 1994 AND 1 OBSERVED IN SPOTLIGHT SURVEY CONDUCTED DURING MAY, JUN & OCT 1995.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	412	**Map Index:**	67068	**EO Index:**	67217	**Element Last Seen:**	1995-01-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-01-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-11-15

Quad Summary: Bradley (3512077)

County Summary: San Luis Obispo

Lat/Long:	35.75269 / -120.79886	**Accuracy:**	80 meters
UTM:	Zone-10 N3958753 E699016	**Elevation (ft):**	790
PLSS:	T25S, R11E, Sec. 16, SW (M)	**Acres:**	0.0

Location: CAMP ROBERTS, ABOUT 1.1 MI S OF NACIMIENTO RANCH, JUST W OF GENERALS RD.

Detailed Location:

Ecological:

General: 1 INDIVIDUAL CAPTURED/TRAPPED BETWEEN DEC 1994 AND JAN 1995.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	413	**Map Index:**	67069	**EO Index:**	67218	**Element Last Seen:**	1996-12-18
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1996-12-18
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-12

Quad Summary:	Adelaida (3512067)
County Summary:	San Luis Obispo

Lat/Long:	35.7263 / -120.78438	**Accuracy:**	non-specific area
UTM:	Zone-10 N3955854 E700392	**Elevation (ft):**	994
PLSS:	T25S, R11E, Sec. 28, NE (M)	**Acres:**	69.0

Location:	CAMP ROBERTS, NEAR INTERSECTION OF GENERALS RD & CANYON RD.
Detailed Location:	MAPPED TO INCLUDE PROVIDED MAP LOCATIONS. SPOTLIGHT ROUTE #6, GENERALS RD.
Ecological:	
General:	FEMALE #5063 CAUGHT & RELEASED ON 15 DEC 1994. 1 OBSERVED DURING SPOTLIGHT SURVEYS 12 OCT 1994. 1 OBSERVED DURING SPOTLIGHTING ON 4 OCT 1995. 1 TRAPPED & 1 OBSERVED IN 1996.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	416	**Map Index:**	67074	**EO Index:**	67223	**Element Last Seen:**	1995-01-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-01-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-11-15

Quad Summary:	Bradley (3512077)
County Summary:	San Luis Obispo

Lat/Long:	35.76031 / -120.79317	**Accuracy:**	80 meters
UTM:	Zone-10 N3959609 E699511	**Elevation (ft):**	670
PLSS:	T25S, R11E, Sec. 16, NW (M)	**Acres:**	0.0

Location:	CAMP ROBERTS, ABOUT 0.7 MI SE OF NACIMIENTO RANCH & E OF GENERALS RD.
Detailed Location:	
Ecological:	
General:	1 INDIVIDUAL CAPTURED/RELEASED BETWEEN DEC 1994 & JAN 1995.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	417	**Map Index:**	67075	**EO Index:**	67224	**Element Last Seen:**	1997-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1997-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-13

Quad Summary: Adelaida (3512067)

County Summary: San Luis Obispo

Lat/Long:	35.72047 / -120.77324	**Accuracy:**	non-specific area
UTM:	Zone-10 N3955231 E701415	**Elevation (ft):**	931
PLSS:	T25S, R11E, Sec. 27, SW (M)	**Acres:**	135.0

Location: CAMP ROBERTS, ABOUT 2.5 MI NE OF CHIMNEY ROCK, ON EITHER SIDE OF GENERALS RD.

Detailed Location: MAPPED TO INCLUDE DETECTION LOCATIONS FROM MAPS AND TABLES GIVEN IN REPORTS, AND 1991 SPECIMEN LOCALITY GIVEN AS T25S R11E SEC 27 SESE. 1997 DETECTION INCLUDED ON MAP PROVIDED WITH REPORT, BUT NOT IN TABLE OF SIGHTINGS.

Ecological: 1988-1991 MORTALITY STUDY FOUND THAT PREDATION WAS THE LEADING CAUSE OF DEATH FOR KIT FOXES AT CAMP ROBERTS; A PREDATED KIT FOX WAS RECOVERED FROM THIS VICINITY DURING THE STUDY.

General: 1 COLLECTED ON 7 MAR 1991. MALE #5080 CAUGHT/RELEASED & RECAPTURED IN DEC 1994. FEMALE #5085 CAUGHT & RECAPTURED IN DEC 1996, 2 OBSERVED DURING SPOTLIGHT SURVEYS IN 1996. 1 OBS DURING SPOTLIGHT SURVEY IN 1997.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	418	**Map Index:**	67076	**EO Index:**	67225	**Element Last Seen:**	1996-12-03
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1996-12-03
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-14

Quad Summary: Adelaida (3512067)

County Summary: San Luis Obispo

Lat/Long:	35.7113 / -120.77354	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3954213 E701411	**Elevation (ft):**	952
PLSS:	T25S, R11E, Sec. 34, NE (M)	**Acres:**	280.0

Location: CAMP ROBERTS, ABOUT 2.2 MI NE OF CHIMNEY ROCK, JUST NE OF THE INTERSECTION OF GENERALS RD & EAST PERIMETER RD.

Detailed Location: MAPPED TO INCLUDE MAPPED DETECTION LOCATIONS AND TRS. 1996 TRAP LOCATION GIVEN AS SW 1/4 SEC 34 T25S R11E, THOUGH ACCOMPANYING MAP SHOWS TRAP DETECTION IN NE 1/4 OF SEC 34.

Ecological: 1988-1991 MORTALITY STUDY FOUND PREDATION TO BE THE LEADING CAUSE OF DEATH FOR KIT FOXES AT CAMP ROBERTS; FOXES FOUND DEAD IN VICINITY OF THIS OCCURRENCE DIED FROM RODENTICIDE POISONING, RABIES AND UNKNOWN CAUSES.

General: FEMALES TRAPPED FROM VICINITY & TRACKED DURING REPRODUCTIVE STUDY 1988-1991.1 INDIVIDUAL CAUGHT AND RELEASED BETWEEN DEC 1994 AND JAN 1995. MALE #5083 CAUGHT AND RELEASED ON 3 DEC 1996.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	419	**Map Index:**	67077	**EO Index:**	67226	**Element Last Seen:**	1996-03-21
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1996-03-21
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-08

Quad Summary:	Paso Robles (3512066)
County Summary:	San Luis Obispo

Lat/Long:	35.74316 / -120.74021	**Accuracy:**	non-specific area
UTM:	Zone-10 N3957816 E704345	**Elevation (ft):**	840
PLSS:	T25S, R11E, Sec. 24, NW (M)	**Acres:**	132.0

Location:	CAMP ROBERTS, ABOUT 1.1 AIR MI SSW OF INTERSECTION OF POOP OUT RD AND COUNTY/BEE ROCK RD (10TH ST).
Detailed Location:	MAPPED TO INCLUDE GIVEN TRS, MAP LOCATIONS, AND COORDINATES.
Ecological:	
General:	1 COLLECTED ON 5 NOV 1990. 1 INDIVIDUAL CAUGHT & RELEASED ON 21 DEC 1994. 1 DETECTED ON 5 JAN 1995. 1 OBSERVED ON 21 MAR 1996.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	420	**Map Index:**	67078	**EO Index:**	67227	**Element Last Seen:**	1994-03-10
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1994-03-10
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-13

Quad Summary:	San Miguel (3512076), Bradley (3512077)
County Summary:	Monterey

Lat/Long:	35.84763 / -120.74907	**Accuracy:**	non-specific area
UTM:	Zone-10 N3969388 E703277	**Elevation (ft):**	641
PLSS:	T24S, R11E, Sec. 14, NE (M)	**Acres:**	38.0

Location:	ABOUT 1.5 MI SE OF BRADLEY RD AT HARE CANYON RD & 2.3 MI NNE OF HWY 101 AT BRADLEY RD, N OF EAST GARRISON, CAMP ROBERTS.
Detailed Location:	1993: GATE 16 RD, NEAR INTERSECTION OF GATE 17 RD IN EAST GARRISON; MAPPED TO PROVIDED COORDINATES. 1994: SPOTLIGHT SURVEY ROUTE 1 - EAST GARRISON, AT MILE 2.7; MAPPED TO PROVIDED MAP.
Ecological:	
General:	1 FEMALE CAUGHT & RELEASED IN THE VICINITY DURING REPRODUCTION STUDIES 1988-1991. 1 ADULT OBSERVED DURING SPOTLIGHTING, AFTER OFFICIAL OBSERVATION PERIOD, IN 1993. 1 INDIVIDUAL OBSERVED IN SPOTLIGHT SURVEY ON 10 MAR 1994.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	421	**Map Index:**	67079	**EO Index:**	67228	**Element Last Seen:**	1994-12-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1994-12-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-11-15

Quad Summary: Bradley (3512077)
County Summary: Monterey

Lat/Long:	35.84653 / -120.76517	**Accuracy:**	80 meters
UTM:	Zone-10 N3969233 E701825	**Elevation (ft):**	590
PLSS:	T24S, R11E, Sec. 15, NE (M)	**Acres:**	0.0

Location: CAMP ROBERTS, ABOUT 2.4 MILES ESE OF BRADLEY ALONG BRADLEY ROAD, JUST WEST OF HWY 101.
Detailed Location:
Ecological:
General: 1 INDIVIDUAL OBSERVED IN SPOTLIGHT SURVEY DURING MAR TO DEC 1994.
Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	422	**Map Index:**	67398	**EO Index:**	67229	**Element Last Seen:**	1997-06-03
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1997-06-03
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-13

Quad Summary: Bradley (3512077)
County Summary: Monterey

Lat/Long:	35.83335 / -120.80846	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3967681 E697947	**Elevation (ft):**	560
PLSS:	T24S, R11E, Sec. 20 (M)	**Acres:**	0.0

Location: CAMP ROBERTS, SAN ANTONIO ROAD, ABOUT 1.7 AIR MILES SOUTH OF HWY 101 AT SAN ANTONIO RIVER.
Detailed Location:
Ecological:
General: 1 INDIVIDUAL OBSERVED DURING SPOTLIGHT SURVEY ON 3 JUN 1997.
Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	423	**Map Index:**	67082	**EO Index:**	67230	**Element Last Seen:**	2001-08-02
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2001-08-02
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-11-15

Quad Summary: Bradley (3512077)
County Summary: Monterey

Lat/Long:	35.82093 / -120.79486	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3966332 E699207	**Elevation (ft):**	900
PLSS:	T24S, R11E, Sec. 21 (M)	**Acres:**	0.0

Location: CAMP ROBERTS, ABOUT 2.9 MI S OF BRADLEY AND 1.2 MI E OF SAN ANTONIO RIVER.
Detailed Location: MAPPED ACCORDING TO UTM COORDINATES PROVIDED BY SOURCE.
Ecological:
General: 2 ADULTS & 2 JUVENILES OBSERVED DURING AERIAL SURVEY ON 2 AUG 2001.
Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	424	**Map Index:**	67081	**EO Index:**	67231	**Element Last Seen:**	2001-06-20
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2001-06-20
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-11-15

Quad Summary: Bradley (3512077)

County Summary: Monterey

Lat/Long:	35.80296 / -120.77789	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3964373 E700785	**Elevation (ft):**	570
PLSS:	T24S, R11E, Sec. 34, NW (M)	**Acres:**	0.0

Location: CAMP ROBERTS, ABOUT 1.2 ROAD MI W OF INTERSECTION OF BRADLEY RD AND TOWER RD.

Detailed Location: MAPPED ACCORDING TO UTM COORDINATES PROVIDED BY SOURCE.

Ecological:

General: 3 ADULTS & 4 JUVENILES OBSERVED ON 20 JUN 2001.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	425	**Map Index:**	67083	**EO Index:**	67232	**Element Last Seen:**	1995-01-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-01-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-11-15

Quad Summary: Bradley (3512077)

County Summary: Monterey

Lat/Long:	35.79503 / -120.76864	**Accuracy:**	80 meters
UTM:	Zone-10 N3963512 E701642	**Elevation (ft):**	600
PLSS:	T24S, R11E, Sec. 34, SE (M)	**Acres:**	0.0

Location: CAMP ROBERTS, ABOUT 0.24 ROAD MILES W OF INTERSECTION OF PERIMETER RD AND FIELD RD.

Detailed Location:

Ecological:

General: 1 INDIVIDUAL CAPTURED/RELEASED BETWEEN DEC 1994 AND JAN 1995.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	426	**Map Index:**	67084	**EO Index:**	67233	**Element Last Seen:**	1994-12-09
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1994-12-09
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-14

Quad Summary: Bradley (3512077)

County Summary: Monterey

Lat/Long:	35.79454 / -120.77596	**Accuracy:**	non-specific area
UTM:	Zone-10 N3963443 E700982	**Elevation (ft):**	600
PLSS:	T24S, R11E, Sec. 34, SW (M)	**Acres:**	37.0

Location: ALONG PERIMETER ROAD, ABOUT 2.2 AIR MI W OF HWY 101, SE OF NACIMIENTO RIVER, CAMP ROBERTS.

Detailed Location: MAPPED TO INCLUDE PROVIDED COORDINATES AND LOCATIONS DEPICTED ON MAPS.

Ecological: DEN OBSERVED WITH MULTIPLE ENTRANCES INCLUDING CULVERT.

General: DEN WITH 2 PUPS OBSERVED ON 27 MAY 1994. 1 PUP SEEN ENTERING CULVERT ON 31 MAY 1994. FEMALE #4114 CAUGHT/RELEASED ON 9 DEC 1994.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	427	**Map Index:**	67085	**EO Index:**	67234	**Element Last Seen:**	1999-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1999-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-14

Quad Summary:	Bradley (3512077)
County Summary:	San Luis Obispo

Lat/Long:	35.77704 / -120.78493	**Accuracy:**	non-specific area
UTM:	Zone-10 N3961483 E700216	**Elevation (ft):**	629
PLSS:	T25S, R11E, Sec. 4, SE (M)	**Acres:**	41.0

Location:	CAMP ROBERTS, ABOUT 0.3-0.6 MILES SE OF BEE ROCK RD (10TH ST) AT PERIMETER RD & 3.1 MILES SW OF HWY 101 AT BRADLEY RD.
Detailed Location:	MAPPED TO PROVIDED MAPS AND COORDINATES. 1991 SPECIMEN LOCALITY GIVEN AS T25S R11E SEC 4 SESE.
Ecological:	1988-1991 MORTALITY STUDY FOUND THAT PREDATION WAS THE LEADING CAUSE OF DEATH FOR KIT FOXES AT CAMP ROBERTS; FOXES KILLED BY PREDATION AND RABIES WERE RECOVERED FROM THIS VICINITY.
General:	1 COLLECTED ON 10 JUL 1991. 2 TRAPPED & RELEASED IN DEC 1994. 1 INDIVIDUAL OBSERVED IN SPOTLIGHT SURVEY, 1997. 2 TRAPPED IN 1999.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	428	**Map Index:**	67089	**EO Index:**	67238	**Element Last Seen:**	2000-09-26
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2000-09-26
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-14

Quad Summary:	Bradley (3512077)
County Summary:	San Luis Obispo

Lat/Long:	35.77366 / -120.76864	**Accuracy:**	non-specific area
UTM:	Zone-10 N3961141 E701697	**Elevation (ft):**	756
PLSS:	T25S, R11E, Sec. 10, NE (M)	**Acres:**	108.0

Location:	ABOUT 1.2 MI ESE OF PERIMETER RD AT BEE ROCK RD (=10TH ST) & 2.75 MI SSW OF HWY 101 AT BRADLEY RD, CAMP ROBERTS.
Detailed Location:	1991: SPECIMEN LOCALITY GIVEN AS T25S R11E SEC 10 NESE, ATTRIBUTED HERE. 1994-2000: MAPPED TO PROVIDED MAPS AND COORDINATES.
Ecological:	GRASSLAND. FEMALES TRAPPED IN VICINITY & TRACKED DURING REPRODUCTIVE STUDY 1988-1991.
General:	1 COLLECTED ON 25 OCT 1991. 2 INDIVDUALS OBSERVED JUN-JUL 1994 & 1 TRAPPED & RECAPTURED TWICE IN DEC 1994. 3 TRAPPED IN 1996. 1 INDIVIDUAL OBSERVED DURING SPOTLIGHT SURVEY IN 1997. 1 OBSERVED, 1 TRAPPED IN 1999. 1 OBSERVED ON 26 SEP 2000.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	429	**Map Index:**	67090	**EO Index:**	67239	**Element Last Seen:**	1996-12-18
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1996-12-18
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-13

Quad Summary: Bradley (3512077)

County Summary: San Luis Obispo

Lat/Long:	35.76258 / -120.76761	**Accuracy:**	non-specific area
UTM:	Zone-10 N3959914 E701817	**Elevation (ft):**	750
PLSS:	T25S, R11E, Sec. 10 (M)	**Acres:**	24.0

Location: CAMP ROBERTS, ABOUT 1.9 MI ESE OF NACIMIENTO RANCH.

Detailed Location: MAPPED TO INCLUDE LOCATIONS FROM MAP OF DETECTIONS IN 1994. 1996 TRAP LOCATION GIVEN AS SE 1/4 SEC 10 T25S R11E.

Ecological: 1988-1991 MORTALITY STUDY FOUND THAT PREDATION WAS THE LEADING CAUSE OF DEATH FOR KIT FOXES AT CAMP ROBERTS; A KIT FOX DEAD FROM UNKNOWN CAUSES WAS RECOVERED FROM THIS VICINITY DURING THE STUDY.

General: FEMALE #5082 CAUGHT AND RELEASED ON 15 DEC, MALE #5055 CAUGHT AND RELEASED ON 16 DEC 1994. MALE #5086 CAUGHT AND RELEASED 18 DEC 1996.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	430	**Map Index:**	67091	**EO Index:**	67240	**Element Last Seen:**	1995-01-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-01-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-11-15

Quad Summary: Bradley (3512077)

County Summary: San Luis Obispo

Lat/Long:	35.76012 / -120.77792	**Accuracy:**	80 meters
UTM:	Zone-10 N3959620 E700891	**Elevation (ft):**	870
PLSS:	T25S, R11E, Sec. 15, NW (M)	**Acres:**	0.0

Location: CAMP ROBERTS, ABOUT 1.4 MI SE OF NACIMIENTO RANCH.

Detailed Location:

Ecological:

General: 1 INDIVIDUAL CAPTURED/RELEASED BETWEEN DEC 1994 AND JAN 1995.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	431	**Map Index:**	67092	**EO Index:**	67241	**Element Last Seen:**	1994-12-14
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1994-12-14
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-14

Quad Summary: Bradley (3512077)

County Summary: San Luis Obispo

Lat/Long:	35.75465 / -120.77599	**Accuracy:**	80 meters
UTM:	Zone-10 N3959017 E701079	**Elevation (ft):**	860
PLSS:	T25S, R11E, Sec. 15 (M)	**Acres:**	0.0

Location: CAMP ROBERTS, ABOUT 1.7 MI SE OF NACIMIENTO RANCH.

Detailed Location: MAPPED TO LOCATION FROM MAP OF 1994 DETECTIONS. 1991 SPECIMEN LOCALITY GIVEN AS T25S R11E SEC 15 SENW.

Ecological:

General: 1 COLLECTED ON 18 JAN 1991. MALE #5081 CAUGHT AND RELEASED ON 14 DEC 1994.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	941	**Map Index:**	67850	**EO Index:**	68001	**Element Last Seen:**	1991-06-05
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	1991-06-05
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2007-02-23

Quad Summary:	Paso Robles (3512066)
County Summary:	San Luis Obispo

Lat/Long:	35.63148 / -120.64450	**Accuracy:**	non-specific area
UTM:	Zone-10 N3945630 E713298	**Elevation (ft):**	900
PLSS:	T26S, R12E, Sec. 26, SE (M)	**Acres:**	42.0

Location:	E OF PASO ROBLES, ABOUT 0.9 MI SE OF INTERSECTION OF UNION RD AND GOLDEN HILL RD.
Detailed Location:	SOURCES GIVE DIRECTIONS AS BOTH "WESTERN 1/2 OF CHANDLER RANCH WITHIN CITY LIMITS OF PASO ROBLES" AND "NORTHERN PORTION OF CHANDLER RANCH".
Ecological:	PRIMARILY GRAZED VALLEY GRASSLAND AND DRY LAND FARMING SURROUNDING OAK WOODLAND.
General:	FORAGING & DENNING SITE. 1 ADULT OBSERVED ON 8 JUN 1990. AREA SHOWS EXTENSIVE USE BY FOX, POTENTIAL DEN DENSITY OF OVER 0.5 PER ACRE. 1 ADULT WITH PREY IN ITS MOUTH OBSERVED 5 JUN 1991.
Owner/Manager:	PVT

Occurrence No.	943	**Map Index:**	67856	**EO Index:**	68006	**Element Last Seen:**	2014-03-08
Occ. Rank:	Poor			**Presence:**	Presumed Extant	**Site Last Seen:**	2014-03-08
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-11-13

Quad Summary:	Shandon (3512064), Estrella (3512065)
County Summary:	San Luis Obispo

Lat/Long:	35.65199 / -120.50528	**Accuracy:**	non-specific area
UTM:	Zone-10 N3948217 E725850	**Elevation (ft):**	865
PLSS:	T26S, R14E, Sec. 19, SE (M)	**Acres:**	60.0

Location:	FROM ABOUT 0.4 MILES S TO 0.7 MILES SW OF HWY 46 AT RIVER GROVE DR, WHITLEY GARDENS.
Detailed Location:	W POLYGON REPRESENTS LOCATION OF KIT FOX SIGHTING ON 3 JUL 1990 & INCLUDES 2014 DETECTION LOCATION AT SCENT STATION B1 (35.65382, -120.50663). E POLYGON REPRESENTS DEN FOUND IN 1990, E OF THE ESTRELLA RIVER & S OF THE OLD STEEL BRIDGE.
Ecological:	1990: NATIVE PASTURE WITH OAK TREES. 2014: SCAT WAS COLLECTED DURING 6-WEEK BAIT STATION SURVEY AND IDENTIFIED BY DNA ANALYSIS. RED FOX SCAT WAS ALSO PRESENT AT THIS SITE. SURROUNDING AREA USED FOR RANGELAND AND DRY-FARMING BARLEY.
General:	KIT FOX FAMILY AND DEN OBSERVED IN JUL 1990. SCAT DETECTED ON 8 MAR 2014.
Owner/Manager:	UNKNOWN, PVT

Occurrence No.	946	**Map Index:**	67859	**EO Index:**	68009	**Element Last Seen:**	1987-09-29
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1987-09-29
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2007-01-19

Quad Summary: Paso Robles (3512066)

County Summary: San Luis Obispo

Lat/Long:	35.70954 / -120.74582	**Accuracy:**	non-specific area
UTM:	Zone-10 N3954075 E703923	**Elevation (ft):**	860
PLSS:	T25S, R11E, Sec. 36, SW (M)	**Acres:**	35.0

Location: SW OF SAN MIGUEL, E OF MAHONEY RD, N OF SAN MARCOS RD.

Detailed Location: MAPPED IN NW 1/4 OF SW 1/4 OF SECTION 36.

Ecological:

General: FORAGING SITE. 1 ADULT SIGHTED DURING A NIGHT SURVEY ON 29 SEP 1987.

Owner/Manager: UNKNOWN

Occurrence No.	988	**Map Index:**	67935	**EO Index:**	68082	**Element Last Seen:**	1971-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1971-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2007-02-20

Quad Summary: San Miguel (3512076)

County Summary: Monterey

Lat/Long:	35.85447 / -120.72837	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3970190 E705128	**Elevation (ft):**	1010
PLSS:	T24S, R11E, Sec. 12 (M)	**Acres:**	0.0

Location: CAMP ROBERTS MILITARY RESERVATION, ABOUT 4.2 MI ESE OF BRADLEY.

Detailed Location:

Ecological:

General: SIGHTING, ROAD KILL OR DEN PRIOR TO 1972.

Owner/Manager: UNKNOWN

Occurrence No.	989	**Map Index:**	67936	**EO Index:**	68083	**Element Last Seen:**	1975-07-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1975-07-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2007-01-29

Quad Summary: San Miguel (3512076), Bradley (3512077), Valleton (3512086), Wunpost (3512087)

County Summary: Monterey

Lat/Long:	35.87123 / -120.75298	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3971997 E702863	**Elevation (ft):**	730
PLSS:	T24S, R11E, Sec. 02 (M)	**Acres:**	0.0

Location: CAMP ROBERTS MILITARY RESERVATION, ABOUT 2.8 AIR MI ENE OF BRADLEY, HARE CANYON.

Detailed Location:

Ecological:

General: ROAD KILL SOMETIME FROM 1972 THROUGH JUL 1975.

Owner/Manager: STATE-CAMP ROBERTS MR

Occurrence No.	990	**Map Index:**	67937	**EO Index:**	68084	**Element Last Seen:**	1975-07-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1975-07-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2007-01-29

Quad Summary: Bradley (3512077)

County Summary: Monterey

Lat/Long:	35.86082 / -120.77027	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3970807 E701328	**Elevation (ft):**	520
PLSS:	T24S, R11E, Sec. 10 (M)	**Acres:**	0.0

Location: CAMP ROBERTS MILITARY RESERVATION, ABOUT 1.8 MI E OF BRADLEY NEAR JUNCTION OF BRADLEY RD AND HARE CANYON RD.

Detailed Location:

Ecological:

General: SIGHTING SOMETIME FROM 1972 THROUGH JUL 1975.

Owner/Manager: UNKNOWN

Occurrence No.	991	**Map Index:**	67938	**EO Index:**	68085	**Element Last Seen:**	1975-07-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1975-07-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2007-01-29

Quad Summary: Bradley (3512077)

County Summary: Monterey

Lat/Long:	35.86521 / -120.81614	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3971201 E697175	**Elevation (ft):**	500
PLSS:	T24S, R11E, Sec. 05 (M)	**Acres:**	0.0

Location: JUST W OF BRADLEY, NEAR HWY 101.

Detailed Location:

Ecological:

General: SIGHTING SOMETIME FROM 1972 THROUGH JUL 1975.

Owner/Manager: UNKNOWN

Occurrence No.	992	**Map Index:**	67939	**EO Index:**	68086	**Element Last Seen:**	1975-07-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1975-07-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2007-01-29

Quad Summary: Bradley (3512077)

County Summary: Monterey

Lat/Long:	35.86649 / -120.86307	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3971250 E692934	**Elevation (ft):**	580
PLSS:	T24S, R10E, Sec. 02 (M)	**Acres:**	0.0

Location: HAMES VALLEY, ABOUT 1.4 ROAD MI W OF INTERSECTION OF HWY 101 AND JOLON RD, JUST S OF JOLON RD.

Detailed Location:

Ecological:

General: ROAD KILL SOMETIME FROM 1972 THROUGH JUL 1975.

Owner/Manager: UNKNOWN

Occurrence No.	1175	**Map Index:**	A7158	**EO Index:**	108927	**Element Last Seen:**	1996-05-23
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1996-05-23
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-11-13

Quad Summary:	Adelaida (3512067)
County Summary:	San Luis Obispo

Lat/Long:	35.69997 / -120.76488	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3952974 E702223	**Elevation (ft):**	911
PLSS:	T26S, R11E, Sec. 2, NW (M)	**Acres:**	18.0

Location:	VICINITY OF GENERALS RD, ABOUT 0.8 MILES NORTH OF SAN MARCOS RD AT NACIMIENTO LAKE DR, CAMP ROBERTS.
Detailed Location:	MAPPED TO COORDINATES GIVEN FOR 1996 DETECTION. 1987 COLLECTION WAS FROM NW 1/4 SW 1/4 SEC 2, AND 1989 COLLECTION WAS FROM NE 1/4 NE 1/4 SEC 3; BOTH ARE ATTRIBUTED HERE.
Ecological:	1989: DETECTED IN CONCRETE CULVERT UNDER ROAD (PROBABLY A DEN SITE).
General:	1 COLLECTED ON 24 APR 1987 AND 1 ON 26 DEC 1989. 3 PUPS OBSERVED ON 23 MAY 1996; MORE ANIMALS MAY HAVE BEEN PRESENT BUT UNSEEN.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1179	**Map Index:**	A7189	**EO Index:**	108955	**Element Last Seen:**	1990-05-08
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1990-05-08
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-11-17

Quad Summary:	Paso Robles (3512066), Adelaida (3512067)
County Summary:	San Luis Obispo

Lat/Long:	35.69166 / -120.75013	**Accuracy:**	non-specific area
UTM:	Zone-10 N3952082 E703579	**Elevation (ft):**	902
PLSS:	T26S, R11E, Sec. 2, SE (M)	**Acres:**	45.0

Location:	SOUTH SIDE OF SAN MARCOS RD 0.5 MI E OF THE GENERALS RD JUNCTION & 0.9 MI NNW OF NACIMIENTO LAKE DR AT OAK FLAT RD.
Detailed Location:	MAPPED TO PROVIDED LOCALITY, "CAMP ROBERTS MILITARY RESERVATION, T26S R11E SEC 2 SESE."
Ecological:	
General:	1 COLLECTED ON 8 MAY 1990.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1181	**Map Index:**	A7401	**EO Index:**	109168	**Element Last Seen:**	1999-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1999-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-05

Quad Summary:	Bradley (3512077)
County Summary:	Monterey

Lat/Long:	35.79906 / -120.76619	**Accuracy:**	80 meters
UTM:	Zone-10 N3963964 E701854	**Elevation (ft):**	612
PLSS:	T24S, R11E, Sec. 34, E (M)	**Acres:**	5.0

Location:	ABOUT 1.3 MI SW OF HWY 101 AT BRADLEY RD & 2.3 MI SSW OF THE CONFLUENCE OF THE NACIMIENO & SALINAS RIVERS, CAMP ROBERTS.
Detailed Location:	MAPPED TO PROVIDED COORDINATES.
Ecological:	
General:	1 TRAPPED DURING 1999 MONITORING EFFORTS.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1182	**Map Index:**	A7405	**EO Index:**	109171	**Element Last Seen:**	1999-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1999-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-05

Quad Summary:	Bradley (3512077)
County Summary:	Monterey, San Luis Obispo

Lat/Long:	35.79338 / -120.78913	**Accuracy:**	specific area
UTM:	Zone-10 N3963286 E699795	**Elevation (ft):**	598
PLSS:	T24S, R11E, Sec. 33, S (M)	**Acres:**	10.0

Location:	TOWER RD, N SIDE OF NACIMIENTO RIVER, ABOUT 2.6 MI SW OF HWY 101 AT BRADLEY RD & 3.7 MI NW OF MCKAY, CAMP ROBERTS.
Detailed Location:	MAPPED TO PROVIDED COORDINATES.
Ecological:	
General:	1 DETECTED DURING SPOTLIGHT SURVEYS IN 1998 AND 1 IN 1999.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1183	**Map Index:**	A7454	**EO Index:**	109222	**Element Last Seen:**	1990-01-25
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1990-01-25
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-14

Quad Summary:	Bradley (3512077)
County Summary:	San Luis Obispo

Lat/Long:	35.77716 / -120.8344	**Accuracy:**	non-specific area
UTM:	Zone-10 N3961396 E695743	**Elevation (ft):**	817
PLSS:	T25S, R11E, Sec. 6, SW (M)	**Acres:**	115.0

Location:	ABOUT 1.5 MILES SE OF KING WELL (GNIS) AND 5.1 MILES SW OF HWY 101 AT BRADLEY RD, CAMP ROBERTS.
Detailed Location:	1988 SPECIMEN COLLECTED FROM T25S R11E SEC 7 NWNW. 1990 SPECIMEN COLLECTED FROM T25S R11E SEC 6 SWSW.
Ecological:	MORTALITY STUDY FROM 1988-1991 INDICATED THAT PREDATION WAS THE LEADING CAUSE OF KIT FOX DEATH ON CAMP ROBERTS; SEVERAL PREDATED FOXES FOUND IN THIS VICINITY MAY HAVE INCLUDED THE CATALOGED SPECIMENS MAPPED AT THIS OCCURRENCE.
General:	FEMALE TRAPPED IN VICINITY AND TRACKED DURING REPRODUCTIVE STUDY 1988-1991. 1 COLLECTED ON 19 DEC 1988. 1 COLLECTED ON 25 JAN 1990.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1184	**Map Index:**	A7456	**EO Index:**	109225	**Element Last Seen:**	1999-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1999-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-13

Quad Summary:	Bradley (3512077)
County Summary:	San Luis Obispo

Lat/Long:	35.76836 / -120.79956	**Accuracy:**	non-specific area
UTM:	Zone-10 N3960490 E698914	**Elevation (ft):**	611
PLSS:	T25S, R11E, Sec. 9, W (M)	**Acres:**	31.0

Location:	NEAR THE INTERSECTION OF GENERALS RD AND PERIMETER RD, VICINITY OF NACIMIENTO RANCH (GNIS), CAMP ROBERTS.
Detailed Location:	MAPPED TO PROVIDED COORDINATES.
Ecological:	
General:	1 DETECTED BY SPOTLIGHTING ON 3 MAY 1995. 1 DETECTED BETWEEN SPOTLIGHTING ROUTES ON 21 MAR & 1 ON 22 MAR 1996. 2 INCIDENTAL OBSERVATIONS IN 1999.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1185	**Map Index:**	A7476	**EO Index:**	109242	**Element Last Seen:**	1999-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1999-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-13

Quad Summary:	Bradley (3512077)
County Summary:	San Luis Obispo

Lat/Long:	35.77473 / -120.79331	**Accuracy:**	specific area
UTM:	Zone-10 N3961209 E699464	**Elevation (ft):**	583
PLSS:	T25S, R11E, Sec. 9, NW (M)	**Acres:**	8.0

Location:	VICINITY OF PERIMETER RD, ON SW SIDE OF NACIMIENTO RIVER, ABOUT 3.5 MILES SW OF HWY 101 AT BRADLEY RD, CAMP ROBERTS.
Detailed Location:	MAPPED TO COORDINATES PROVIDED FOR 1996 & 1999 DETECTIONS. 1991 SPECIMEN LOCALITY GIVEN AS T25S R11E SEC 9 SENE.
Ecological:	1996: RIPARIAN VEGETATION PRESENT.
General:	1 COLLECTED ON 7 OCT 1991. 2 OBSERVED ON 23 OCT 1996. 1 DETECTED DURING SPOTLIGHT SURVEYS IN 1999.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1186	**Map Index:**	A7507	**EO Index:**	109278	**Element Last Seen:**	1995-05-24
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-05-24
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-12

Quad Summary:	Paso Robles (3512066), San Miguel (3512076)
County Summary:	San Luis Obispo

Lat/Long:	35.75341 / -120.72628	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3958982 E705578	**Elevation (ft):**	762
PLSS:	T25S, R12E, Sec. 18, SW (M)	**Acres:**	280.0

Location:	SE OF THE INTERSECTION OF 10TH STREET (BEE ROCK RD) AND E PERIMETER/POOPOUT HILL RD, CAMP ROBERTS.
Detailed Location:	SPECIMEN LOCALITY GIVEN AS CAMP ROBERTS MILITARY RESERVATION T25S R12E SEC 18 NWSW. AN UNUSUALLY LARGE NUMBER OF SPECIMENS COLLECTED IN THE 1980S-90S HAVE THIS LOCALITY, SO THIS MAY HAVE BEEN SOME SORT OF DEFAULT GENERIC LOCATION FOR EG&G.
Ecological:	
General:	1 COLLECTED ON UNKNOWN DATE 1980-1998, 1 COLLECTED IN 1984, 3 IN 1986, 3 IN 1987, 4 IN 1988, 9 IN 1989, 14 IN 1990, 6 IN 1991, 1 IN 1992, 3 IN 1994, & 1 IN 1995.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1187	**Map Index:**	A7525	**EO Index:**	109295	**Element Last Seen:**	1998-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1998-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-14

Quad Summary:	Adelaida (3512067), Bradley (3512077)
County Summary:	San Luis Obispo

Lat/Long:	35.75052 / -120.78825	**Accuracy:**	non-specific area
UTM:	Zone-10 N3958534 E699982	**Elevation (ft):**	808
PLSS:	T25S, R11E, Sec. 16, SE (M)	**Acres:**	139.0

Location:	ABOUT 1.5 MILES N OF GENERALS RD AT CANYON RD & 4.2 MI NNE OF CHIMNEY ROCK RD AT NACIMIENTO LAKE DR, CAMP ROBERTS.
Detailed Location:	1990: LOCATION GIVEN AS T25S R11E SEC 16 NESW. 1994: LOCATION GIVEN AS TRAP 119, SE 1/4 SEC 16. 1998: DETECTION AT 699527 3958002. 1996: LOCATION GIVEN AS SE 1/4, SEC 15; T25S, R11E.
Ecological:	PREDATION WAS LEADING CAUSE OF DEATH IN 1988-1991 STUDY; A KIT FOX THAT DIED OF UNKNOWN CAUSES WAS RECORDED FROM THIS VICINITY AND MAY BE THE SAME INDIVIDUAL AS THE 1990 MUSEUM SPECIMEN.
General:	1 COLLECTED ON 6 AUG 1990. FEMALE #4186 CAUGHT & RELEASED ON 13 DEC 1994. FEMALE #4507 CAUGHT IN VICINITY, DEC 1996. AT LEAST 1 DETECTED BY SPOTLIGHTING IN 1998.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1188	**Map Index:**	A7527	**EO Index:**	109304	**Element Last Seen:**	2007-06-11
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2007-06-11
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-12

Quad Summary:	San Miguel (3512076)
County Summary:	Monterey

Lat/Long:	35.81861 / -120.7408	**Accuracy:**	80 meters
UTM:	Zone-10 N3966185 E704098	**Elevation (ft):**	654
PLSS:	T24S, R11E, Sec. 25, NW (M)	**Acres:**	5.0

Location:	W SIDE OF AVE 50 ABOUT 0.1 MI N OF THE AVE 57 INTERSECTION & 0.8 MI ENE OF HWY 101 AT BRADLEY RD, CAMP ROBERTS.
Detailed Location:	MAPPED TO PROVIDED COORDINATES. EAST SIDE OF EAST GARRISON AIRFIELD.
Ecological:	DETECTED BY SPOTLIGHTING. COYOTEBUSH HABITAT IN CANTONMENT AREA.
General:	1 ADULT OBSERVED ON 11 JUN 2007.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1189	**Map Index:**	A7535	**EO Index:**	109315	**Element Last Seen:**	1997-03-10
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1997-03-10
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-14

Quad Summary:	Adelaida (3512067)
County Summary:	San Luis Obispo

Lat/Long:	35.74241 / -120.78123	**Accuracy:**	non-specific area
UTM:	Zone-10 N3957648 E700637	**Elevation (ft):**	1049
PLSS:	T25S, R11E, Sec. 22, NW (M)	**Acres:**	40.0

Location:	ABOUT 2.1 MILES SSE OF NACIMIENTO RANCH (GNIS) & 2.2 MILES NNW OF GENERALS RD AT CANYON RD, CAMP ROBERTS.
Detailed Location:	MAPPED TO PROVIDED MAPS & COORDINATES. SPOTLIGHT ROUTE #6, GENERALS RD.
Ecological:	
General:	1 OBSERVED DURING SPOTLIGHT SURVEYS ON 11 OCT 1994. 1 DETECTED DURING SPOTLIGHT SURVEYS ON 10 MAR 1997.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1190	**Map Index:**	A7536	**EO Index:**	109316	**Element Last Seen:**	1996-10-23
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1996-10-23
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-14

Quad Summary:	Adelaida (3512067)
County Summary:	San Luis Obispo

Lat/Long:	35.71483 / -120.7639	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3954624 E702274	**Elevation (ft):**	884
PLSS:	T25S, R11E, Sec. 35, NW (M)	**Acres:**	18.0

Location:	NEAR E PERIMETER RD, ABOUT 0.5 MI NE OF THE GENERALS RD INTERSECTION & 1.6 MI NW OF TEXAS RD AT DRAKE RD, CAMP ROBERTS.
Detailed Location:	MAPPED TO COORDINATES GIVEN FOR 1996 DETECTION.
Ecological:	1988-1991 MORTALITY STUDY FOUND THE LEADING CAUSE OF KIT FOX DEATH AT CAMP ROBERTS WAS PREDATION; A ROAD-KILLED KIT FOX WAS RECORDED IN THE VICINITY. FEMALES TRAPPED FROM VICINITY & TRACKED DURING REPRODUCTIVE STUDY 1988-1991.
General:	1 FOUND DEAD ON ROAD DURING 1988-1991 STUDY. 1 DETECTED INCIDENTALLY ON 23 OCT 1996.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1191	**Map Index:**	A7538	**EO Index:**	109321	**Element Last Seen:**	1996-06-11
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1996-06-11
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-12

Quad Summary:	Bradley (3512077)
County Summary:	San Luis Obispo

Lat/Long:	35.7871 / -120.75324	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3962664 E703054	**Elevation (ft):**	706
PLSS:	T25S, R11E, Sec. 2, NE (M)	**Acres:**	18.0

Location:	ABOUT 0.4 MILES SW OF AVE 12 AT WASHINGTON BLVD & 2.0 MILES S OF HWY 101 AT BRADLEY RD, CAMP ROBERTS.
Detailed Location:	MAPPED TO PROVIDED COORDINATES.
Ecological:	
General:	1 DETECTED INCIDENTALLY ON 11 JUN 1996.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1192	**Map Index:**	A7539	**EO Index:**	109322	**Element Last Seen:**	1996-08-22
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1996-08-22
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-12

Quad Summary:	San Miguel (3512076)
County Summary:	San Luis Obispo

Lat/Long:	35.77294 / -120.71611	**Accuracy:**	non-specific area
UTM:	Zone-10 N3961171 E706447	**Elevation (ft):**	663
PLSS:	T25S, R12E, Sec. 7, NE (M)	**Acres:**	151.0

Location:	VICINITY OF HWY 101 ABOUT 2.2 MILES SE OF THE A ST OVERPASS, CAMP ROBERTS.
Detailed Location:	1994: TRAP #69, NE 1/4 SECTION 7. 1996: HWY 101 ABOUT 2 MILES SOUTH OF THE "MAIN ENTRANCE" TO CAMP ROBERTS.
Ecological:	
General:	FEMALE #5053 CAUGHT AND RELEASED ON 7 DEC AND AGAIN ON 9 DEC 1994. 1 SUBADULT FEMALE FOUND DEAD ON ROAD ON 22 AUG 1996.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1193	**Map Index:**	A7569	**EO Index:**	109345	**Element Last Seen:**	1990-03-06
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1990-03-06
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-13

Quad Summary:	Bradley (3512077)
County Summary:	San Luis Obispo

Lat/Long:	35.7643 / -120.78597	**Accuracy:**	non-specific area
UTM:	Zone-10 N3960067 E700153	**Elevation (ft):**	791
PLSS:	T25S, R11E, Sec. 9, SE (M)	**Acres:**	44.0

Location:	ABOUT 0.7 MI ESE OF GENERALS RD AT PERIMETER RD & 2.5 MI WNW OF 10TH ST (BEE ROCK RD) AT POOPOUT HILL RD, CAMP ROBERTS.
Detailed Location:	SPECIMEN LOCALITY GIVEN AS T25S R11E SEC 9 SESE.
Ecological:	1988-1991 MORTALITY STUDY FOUND THAT PREDATION WAS THE LEADING CAUSE OF DEATH FOR KIT FOXES ON CAMP ROBERTS; FOXES KILLED BY PREDATION AND UNKNOWN CAUSES WERE RECOVERED FROM THIS VICINITY (THESE MAY HAVE INCLUDED 1991 SPECIMEN).
General:	1 COLLECTED ON 18 JAN 1991.
Owner/Manager:	STATE-CAMP ROBERTS MR

Occurrence No.	1194	**Map Index:**	A7573	**EO Index:**	109351	**Element Last Seen:**	1990-06-09
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1990-06-09
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-12-13

Quad Summary:	Paso Robles (3512066)
County Summary:	San Luis Obispo

Lat/Long:	35.71183 / -120.69739	**Accuracy:**	non-specific area
UTM:	Zone-10 N3954431 E708299	**Elevation (ft):**	658
PLSS:	T25S, R12E, Sec. 32, NE (M)	**Acres:**	75.0

Location:	W SIDE OF HWY 101 ABOUT 2.4 MILES SOUTH OF SAN MIGUEL.
Detailed Location:	SPECIMEN LOCALITY GIVEN AS "CAMP ROBERTS MILITARY RESERVATION T25S R12E SEC32 SENE."
Ecological:	
General:	1 COLLECTED ON 9 JUN 1990.
Owner/Manager:	STATE-CAMP ROBERTS MR

Attachment D

Photographic Documentation



Photo 1. Looking northeast from near the northwest corner of the existing WWTP, showing disked area occupying most of WWTP extension area.



Photo 2. Looking east from near the northwest corner of the existing WWTP, toward the Salinas River, and including northern fence line of the WWTP.



Photo 3. Looking west from near the northeast corner of the existing WWTP, toward the UPRR and development associated with the community of San Miguel.



Photo 4. Looking north along slope at western edge of Project site supporting Annual Grassland, with portion of disked field in foreground.

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San Miguel WWTP Upgrade/Expansion Project

San Luis Obispo County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	2.00	1000sqft	0.05	2,000.00	0
Unrefrigerated Warehouse-No Rail	18.50	1000sqft	0.42	18,500.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	3			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	206	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Based on project description. CO2 rate based on PGE 2020 Sustainability Report.

Land Use - Based on project description.

Construction Phase - Based on information from SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

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Off-road Equipment - Based on information provided by SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

Trips and VMT - Based on information provided by SMCSD.

On-road Fugitive Dust - CalEEMod defaults.

Grading - Based on information provided by SMCSD.

Vehicle Trips - 2 additional employees

Energy Use - CalEEMod defaults. Pump energy use added to warehouse.

Water And Wastewater - Based on information from SMCSD.

Solid Waste - CalEEMod defaults.

Construction Off-road Equipment Mitigation - In accordance with SLOCAPCD Rule 401.

Stationary Sources - Emergency Generators and Fire Pumps - Based on information provided by SMCSD.

Stationary Sources - Emergency Generators and Fire Pumps EF - CalEEMod defaults.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	100.00	5.00

tblConstructionPhase	NumDays	100.00	53.00
tblConstructionPhase	NumDays	100.00	22.00
tblConstructionPhase	NumDays	2.00	8.00
tblConstructionPhase	NumDays	2.00	8.00
tblConstructionPhase	NumDays	5.00	6.00
tblConstructionPhase	NumDays	1.00	88.00
tblConstructionPhase	NumDays	1.00	14.00
tblEnergyUse	LightingElect	3.22	0.00
tblEnergyUse	NT24E	5.13	0.00
tblEnergyUse	T24E	1.04	24.11
tblGrading	MaterialExported	0.00	11.00
tblGrading	MaterialImported	0.00	27.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	206
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	21.00
tblTripsAndVMT	HaulingTripLength	20.00	21.00
tblTripsAndVMT	HaulingTripNumber	1.00	2.00
tblTripsAndVMT	HaulingTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	3.00	2.00
tblTripsAndVMT	WorkerTripNumber	38.00	50.00

tblTripsAndVMT	WorkerTripNumber	5.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	50.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblTripsAndVMT	WorkerTripNumber	0.00	4.00
tblTripsAndVMT	WorkerTripNumber	3.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblTripsAndVMT	WorkerTripNumber	5.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblVehicleTrips	ST_TR	1.90	2.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.11	2.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	8.11	2.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	IndoorWaterUseRate	4,278,125.00	0.00

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					
2022	0.6877	6.9929	5.0119	0.0111	0.3882	0.3103	0.6985	0.1674	0.2894	0.4569	0.0000	973.6612	973.6612	0.2496	0.0000	979.9007
2023	0.0131	0.1247	0.1411	4.6000e-004	5.0600e-003	4.3700e-003	9.4300e-003	1.3900e-003	4.0700e-003	5.4600e-003	0.0000	40.6669	40.6669	9.8700e-003	0.0000	40.9135
Maximum	**0.6877**	**6.9929**	**5.0119**	**0.0111**	**0.3882**	**0.3103**	**0.6985**	**0.1674**	**0.2894**	**0.4569**	**0.0000**	**973.6612**	**973.6612**	**0.2496**	**0.0000**	**979.9007**

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					
2022	0.6877	6.9929	5.0119	0.0111	0.2039	0.3103	0.5143	0.0832	0.2894	0.3726	0.0000	973.6601	973.6601	0.2496	0.0000	979.8996
2023	0.0131	0.1247	0.1411	4.6000e-004	5.0600e-003	4.3700e-003	9.4300e-003	1.3900e-003	4.0700e-003	5.4600e-003	0.0000	40.6668	40.6668	9.8700e-003	0.0000	40.9135
Maximum	**0.6877**	**6.9929**	**5.0119**	**0.0111**	**0.2039**	**0.3103**	**0.5143**	**0.0832**	**0.2894**	**0.3726**	**0.0000**	**973.6601**	**973.6601**	**0.2496**	**0.0000**	**979.8996**

	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**	**46.85**	**0.00**	**26.02**	**49.91**	**0.00**	**18.22**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-3-2022	4-2-2022	1.8105	1.8105
2	4-3-2022	7-2-2022	0.8569	0.8569
3	7-3-2022	10-2-2022	2.1697	2.1697
4	10-3-2022	1-2-2023	2.8179	2.8179
5	1-3-2023	4-2-2023	0.0688	0.0688
6	4-3-2023	7-2-2023	0.0716	0.0716
		Highest	2.8179	2.8179

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	0.1039	0.0000	3.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.7000e-004	6.7000e-004	0.0000	0.0000	7.2000e-004
Energy	2.0300e-003	0.0184	0.0155	1.1000e-004		1.4000e-003	1.4000e-003		1.4000e-003	1.4000e-003	0.0000	63.3995	63.3995	6.4800e-003	1.6300e-003	64.0473
Mobile	1.3400e-003	6.1400e-003	0.0185	6.0000e-005	6.0900e-003	6.0000e-005	6.1500e-003	1.6300e-003	5.0000e-005	1.6800e-003	0.0000	5.7180	5.7180	2.0000e-004	0.0000	5.7229
Stationary	0.2200	0.0169	0.5729	8.0000e-005		1.2100e-003	1.2100e-003		1.2100e-003	1.2100e-003	0.0000	12.7484	12.7484	0.0267	0.0000	13.4148
Waste						0.0000	0.0000		0.0000	0.0000	3.5605	0.0000	3.5605	0.2104	0.0000	8.8209
Water						0.0000	0.0000		0.0000	0.0000	0.3120	0.4972	0.8092	0.0321	7.7000e-004	1.8418
Total	**0.3272**	**0.0415**	**0.6072**	**2.5000e-004**	**6.0900e-003**	**2.6700e-003**	**8.7600e-003**	**1.6300e-003**	**2.6600e-003**	**4.2900e-003**	**3.8724**	**82.3638**	**86.2362**	**0.2759**	**2.4000e-003**	**93.8485**

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	0.1039	0.0000	3.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.7000e-004	6.7000e-004	0.0000	0.0000	7.2000e-004
Energy	2.0300e-003	0.0184	0.0155	1.1000e-004		1.4000e-003	1.4000e-003		1.4000e-003	1.4000e-003	0.0000	63.3995	63.3995	6.4800e-003	1.6300e-003	64.0473
Mobile	1.3400e-003	6.1400e-003	0.0185	6.0000e-005	6.0900e-003	6.0000e-005	6.1500e-003	1.6300e-003	5.0000e-005	1.6800e-003	0.0000	5.7180	5.7180	2.0000e-004	0.0000	5.7229
Stationary	0.2200	0.0169	0.5729	8.0000e-005		1.2100e-003	1.2100e-003		1.2100e-003	1.2100e-003	0.0000	12.7484	12.7484	0.0267	0.0000	13.4148
Waste						0.0000	0.0000		0.0000	0.0000	3.5605	0.0000	3.5605	0.2104	0.0000	8.8209
Water						0.0000	0.0000		0.0000	0.0000	0.3120	0.4972	0.8092	0.0321	7.7000e-004	1.8418
Total	**0.3272**	**0.0415**	**0.6072**	**2.5000e-004**	**6.0900e-003**	**2.6700e-003**	**8.7600e-003**	**1.6300e-003**	**2.6600e-003**	**4.2900e-003**	**3.8724**	**82.3638**	**86.2362**	**0.2759**	**2.4000e-003**	**93.8485**

	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

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/3/2022	5/4/2022	5	88	
2	Trenching	Trenching	5/5/2022	8/4/2022	5	66	
3	Plant Installation	Building Construction	8/5/2022	12/22/2022	5	100	
4	Demobilization	Building Construction	12/23/2022	12/29/2022	5	5	
5	Pre-Construction Utility Locations & Potholing	Site Preparation	1/2/2023	1/19/2023	5	14	
6	Excavation of Bore/Receiving Pits	Grading	1/20/2023	1/31/2023	5	8	
7	Installation of Pipe	Building Construction	2/1/2023	4/14/2023	5	53	
8	Backfill	Grading	4/15/2023	4/26/2023	5	8	
9	Installation of Metered Turnouts	Building Construction	4/27/2023	5/26/2023	5	22	
10	Pavement Repairs	Paving	5/27/2023	6/5/2023	5	6	

Acres of Grading (Site Preparation Phase): 132

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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
Excavation of Bore/Receiving Pits	Concrete/Industrial Saws	0	8.00	81	0.73
Excavation of Bore/Receiving Pits	Rubber Tired Dozers	0	1.00	247	0.40
Excavation of Bore/Receiving Pits	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Installation of Pipe	Bore/Drill Rigs	1	8.00	221	0.50
Installation of Pipe	Cranes	0	4.00	231	0.29
Installation of Pipe	Forklifts	0	6.00	89	0.20

Installation of Pipe	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Backfill	Concrete/Industrial Saws	0	8.00	81	0.73
Backfill	Crushing/Proc. Equipment	1	8.00	85	0.78
Backfill	Rubber Tired Dozers	0	1.00	247	0.40
Backfill	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Installation of Metered Turnouts	Cranes	0	4.00	231	0.29
Installation of Metered Turnouts	Forklifts	0	6.00	89	0.20
Installation of Metered Turnouts	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pavement Repairs	Cement and Mortar Mixers	0	6.00	9	0.56
Pavement Repairs	Pavers	0	7.00	130	0.42
Pavement Repairs	Paving Equipment	1	8.00	132	0.36
Pavement Repairs	Rollers	1	8.00	80	0.38
Pavement Repairs	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Site Preparation	Forklifts	3	8.00	89	0.20
Site Preparation	Generator Sets	5	8.00	84	0.74
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rollers	1	8.00	80	0.38
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Loaders	1	8.00	203	0.36
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Trenchers	1	8.00	78	0.50
Pre-Construction Utility Locations & Potholing	Graders	0	8.00	187	0.41
Pre-Construction Utility Locations & Potholing	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Trenching	Pavers	1	8.00	130	0.42
Trenching	Rollers	1	8.00	80	0.38
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trenching	Trenchers	1	8.00	78	0.50
Plant Installation	Cranes	0	4.00	231	0.29
Plant Installation	Crushing/Proc. Equipment	1	8.00	85	0.78
Plant Installation	Forklifts	0	6.00	89	0.20
Plant Installation	Graders	3	8.00	187	0.41
Plant Installation	Pumps	1	8.00	84	0.74
Plant Installation	Rollers	3	8.00	80	0.38
Plant Installation	Rubber Tired Dozers	3	8.00	247	0.40
Plant Installation	Rubber Tired Loaders	2	8.00	203	0.36
Plant Installation	Scrapers	3	8.00	367	0.48
Plant Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Demobilization	Cranes	0	4.00	231	0.29
Demobilization	Forklifts	0	6.00	89	0.20
Demobilization	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

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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
Excavation of Bore/Receiving Pits	1	6.00	2.00	2.00	13.00	13.00	21.00	LD_Mix	HDT_Mix	HHDT
Installation of Pipe	1	6.00	4.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Backfill	2	6.00	4.00	4.00	13.00	13.00	21.00	LD_Mix	HDT_Mix	HHDT
Installation of Metered Turnouts	1	6.00	2.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Pavement Repairs	2	6.00	4.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	15	50.00	2.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Pre-Construction Utility Locations & Pot	0	4.00	0.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	4	10.00	2.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Plant Installation	17	50.00	4.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Demobilization	0	20.00	4.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2022

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					0.3350	0.0000	0.3350	0.1532	0.0000	0.1532	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2221	2.2267	1.8370	3.6600e-003		0.1060	0.1060		0.1001	0.1001	0.0000	318.7634	318.7634	0.0688	0.0000	320.4831
Total	**0.2221**	**2.2267**	**1.8370**	**3.6600e-003**	**0.3350**	**0.1060**	**0.4409**	**0.1532**	**0.1001**	**0.2533**	**0.0000**	**318.7634**	**318.7634**	**0.0688**	**0.0000**	**320.4831**

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	4.3000e-004	0.0128	3.5200e-003	4.0000e-005	1.0400e-003	5.0000e-005	1.0800e-003	3.0000e-004	5.0000e-005	3.4000e-004	0.0000	3.6938	3.6938	1.6000e-004	0.0000	3.6978
Worker	8.4200e-003	7.0300e-003	0.0628	1.8000e-004	0.0212	1.3000e-004	0.0213	5.6300e-003	1.2000e-004	5.7500e-003	0.0000	16.5033	16.5033	4.6000e-004	0.0000	16.5149
Total	**8.8500e-003**	**0.0198**	**0.0664**	**2.2000e-004**	**0.0222**	**1.8000e-004**	**0.0224**	**5.9300e-003**	**1.7000e-004**	**6.0900e-003**	**0.0000**	**20.1971**	**20.1971**	**6.2000e-004**	**0.0000**	**20.2128**

3.2 Site Preparation - 2022

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					0.1507	0.0000	0.1507	0.0689	0.0000	0.0689	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2221	2.2267	1.8370	3.6600e-003		0.1060	0.1060		0.1001	0.1001	0.0000	318.7630	318.7630	0.0688	0.0000	320.4827
Total	**0.2221**	**2.2267**	**1.8370**	**3.6600e-003**	**0.1507**	**0.1060**	**0.2567**	**0.0689**	**0.1001**	**0.1690**	**0.0000**	**318.7630**	**318.7630**	**0.0688**	**0.0000**	**320.4827**

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	4.3000e-004	0.0128	3.5200e-003	4.0000e-005	1.0400e-003	5.0000e-005	1.0800e-003	3.0000e-004	5.0000e-005	3.4000e-004	0.0000	3.6938	3.6938	1.6000e-004	0.0000	3.6978
Worker	8.4200e-003	7.0300e-003	0.0628	1.8000e-004	0.0212	1.3000e-004	0.0213	5.6300e-003	1.2000e-004	5.7500e-003	0.0000	16.5033	16.5033	4.6000e-004	0.0000	16.5149
Total	**8.8500e-003**	**0.0198**	**0.0664**	**2.2000e-004**	**0.0222**	**1.8000e-004**	**0.0224**	**5.9300e-003**	**1.7000e-004**	**6.0900e-003**	**0.0000**	**20.1971**	**20.1971**	**6.2000e-004**	**0.0000**	**20.2128**

3.3 Trenching - 2022

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	0.0298	0.2930	0.3162	4.6000e-004		0.0175	0.0175		0.0161	0.0161	0.0000	40.0424	40.0424	0.0130	0.0000	40.3661
Total	**0.0298**	**0.2930**	**0.3162**	**4.6000e-004**		**0.0175**	**0.0175**		**0.0161**	**0.0161**	**0.0000**	**40.0424**	**40.0424**	**0.0130**	**0.0000**	**40.3661**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.3000e-004	9.5800e-003	2.6400e-003	3.0000e-005	7.8000e-004	4.0000e-005	8.1000e-004	2.2000e-004	3.0000e-005	2.6000e-004	0.0000	2.7704	2.7704	1.2000e-004	0.0000	2.7734
Worker	1.2600e-003	1.0500e-003	9.4200e-003	3.0000e-005	3.1800e-003	2.0000e-005	3.2000e-003	8.4000e-004	2.0000e-005	8.6000e-004	0.0000	2.4755	2.4755	7.0000e-005	0.0000	2.4772
Total	**1.5900e-003**	**0.0106**	**0.0121**	**6.0000e-005**	**3.9600e-003**	**6.0000e-005**	**4.0100e-003**	**1.0600e-003**	**5.0000e-005**	**1.1200e-003**	**0.0000**	**5.2459**	**5.2459**	**1.9000e-004**	**0.0000**	**5.2506**

3.3 Trenching - 2022

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	0.0298	0.2930	0.3162	4.6000e-004		0.0175	0.0175		0.0161	0.0161	0.0000	40.0423	40.0423	0.0130	0.0000	40.3661
Total	**0.0298**	**0.2930**	**0.3162**	**4.6000e-004**		**0.0175**	**0.0175**		**0.0161**	**0.0161**	**0.0000**	**40.0423**	**40.0423**	**0.0130**	**0.0000**	**40.3661**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.3000e-004	9.5800e-003	2.6400e-003	3.0000e-005	7.8000e-004	4.0000e-005	8.1000e-004	2.2000e-004	3.0000e-005	2.6000e-004	0.0000	2.7704	2.7704	1.2000e-004	0.0000	2.7734
Worker	1.2600e-003	1.0500e-003	9.4200e-003	3.0000e-005	3.1800e-003	2.0000e-005	3.2000e-003	8.4000e-004	2.0000e-005	8.6000e-004	0.0000	2.4755	2.4755	7.0000e-005	0.0000	2.4772
Total	**1.5900e-003**	**0.0106**	**0.0121**	**6.0000e-005**	**3.9600e-003**	**6.0000e-005**	**4.0100e-003**	**1.0600e-003**	**5.0000e-005**	**1.1200e-003**	**0.0000**	**5.2459**	**5.2459**	**1.9000e-004**	**0.0000**	**5.2506**

3.4 Plant Installation - 2022

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	0.4146	4.4041	2.6992	6.4100e-003		0.1864	0.1864		0.1728	0.1728	0.0000	561.4688	561.4688	0.1661	0.0000	565.6215
Total	**0.4146**	**4.4041**	**2.6992**	**6.4100e-003**		**0.1864**	**0.1864**		**0.1728**	**0.1728**	**0.0000**	**561.4688**	**561.4688**	**0.1661**	**0.0000**	**565.6215**

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	9.9000e-004	0.0290	8.0000e-003	9.0000e-005	2.3500e-003	1.1000e-004	2.4600e-003	6.8000e-004	1.0000e-004	7.8000e-004	0.0000	8.3950	8.3950	3.7000e-004	0.0000	8.4042
Worker	9.5700e-003	7.9900e-003	0.0714	2.1000e-004	0.0241	1.5000e-004	0.0242	6.4000e-003	1.4000e-004	6.5300e-003	0.0000	18.7538	18.7538	5.3000e-004	0.0000	18.7670
Total	**0.0106**	**0.0370**	**0.0794**	**3.0000e-004**	**0.0264**	**2.6000e-004**	**0.0267**	**7.0800e-003**	**2.4000e-004**	**7.3100e-003**	**0.0000**	**27.1488**	**27.1488**	**9.0000e-004**	**0.0000**	**27.1711**

3.4 Plant Installation - 2022

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	0.4146	4.4041	2.6992	6.4100e-003		0.1864	0.1864		0.1728	0.1728	0.0000	561.4681	561.4681	0.1661	0.0000	565.6208
Total	**0.4146**	**4.4041**	**2.6992**	**6.4100e-003**		**0.1864**	**0.1864**		**0.1728**	**0.1728**	**0.0000**	**561.4681**	**561.4681**	**0.1661**	**0.0000**	**565.6208**

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	9.9000e-004	0.0290	8.0000e-003	9.0000e-005	2.3500e-003	1.1000e-004	2.4600e-003	6.8000e-004	1.0000e-004	7.8000e-004	0.0000	8.3950	8.3950	3.7000e-004	0.0000	8.4042
Worker	9.5700e-003	7.9900e-003	0.0714	2.1000e-004	0.0241	1.5000e-004	0.0242	6.4000e-003	1.4000e-004	6.5300e-003	0.0000	18.7538	18.7538	5.3000e-004	0.0000	18.7670
Total	**0.0106**	**0.0370**	**0.0794**	**3.0000e-004**	**0.0264**	**2.6000e-004**	**0.0267**	**7.0800e-003**	**2.4000e-004**	**7.3100e-003**	**0.0000**	**27.1488**	**27.1488**	**9.0000e-004**	**0.0000**	**27.1711**

3.5 Demobilization - 2022

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	0.0000	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**

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	5.0000e-005	1.4500e-003	4.0000e-004	0.0000	1.2000e-004	1.0000e-005	1.2000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.4198	0.4198	2.0000e-005	0.0000	0.4202
Worker	1.9000e-004	1.6000e-004	1.4300e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3751	0.3751	1.0000e-005	0.0000	0.3753
Total	**2.4000e-004**	**1.6100e-003**	**1.8300e-003**	**0.0000**	**6.0000e-004**	**1.0000e-005**	**6.0000e-004**	**1.6000e-004**	**1.0000e-005**	**1.7000e-004**	**0.0000**	**0.7948**	**0.7948**	**3.0000e-005**	**0.0000**	**0.7956**

3.5 Demobilization - 2022

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	0.0000	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 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	5.0000e-005	1.4500e-003	4.0000e-004	0.0000	1.2000e-004	1.0000e-005	1.2000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.4198	0.4198	2.0000e-005	0.0000	0.4202
Worker	1.9000e-004	1.6000e-004	1.4300e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3751	0.3751	1.0000e-005	0.0000	0.3753
Total	**2.4000e-004**	**1.6100e-003**	**1.8300e-003**	**0.0000**	**6.0000e-004**	**1.0000e-005**	**6.0000e-004**	**1.6000e-004**	**1.0000e-005**	**1.7000e-004**	**0.0000**	**0.7948**	**0.7948**	**3.0000e-005**	**0.0000**	**0.7956**

3.6 Pre-Construction Utility Locations & Potholing - 2023

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	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**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	8.0000e-005	7.3000e-004	0.0000	2.7000e-004	0.0000	2.7000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2022	0.2022	1.0000e-005	0.0000	0.2023
Total	**1.0000e-004**	**8.0000e-005**	**7.3000e-004**	**0.0000**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2022**	**0.2022**	**1.0000e-005**	**0.0000**	**0.2023**

3.6 Pre-Construction Utility Locations & Potholing - 2023

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	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**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	8.0000e-005	7.3000e-004	0.0000	2.7000e-004	0.0000	2.7000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2022	0.2022	1.0000e-005	0.0000	0.2023
Total	**1.0000e-004**	**8.0000e-005**	**7.3000e-004**	**0.0000**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2022**	**0.2022**	**1.0000e-005**	**0.0000**	**0.2023**

3.7 Excavation of Bore/Receiving Pits - 2023

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-004	6.1400e-003	8.9300e-003	1.0000e-005		3.0000e-004	3.0000e-004		2.8000e-004	2.8000e-004	0.0000	1.0943	1.0943	3.5000e-004	0.0000	1.1032
Total	**6.1000e-004**	**6.1400e-003**	**8.9300e-003**	**1.0000e-005**	**0.0000**	**3.0000e-004**	**3.0000e-004**	**0.0000**	**2.8000e-004**	**2.8000e-004**	**0.0000**	**1.0943**	**1.0943**	**3.5000e-004**	**0.0000**	**1.1032**

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	1.0000e-005	2.0000e-004	6.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0764	0.0764	0.0000	0.0000	0.0765
Vendor	3.0000e-005	8.9000e-004	2.8000e-004	0.0000	9.0000e-005	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.3294	0.3294	1.0000e-005	0.0000	0.3298
Worker	9.0000e-005	7.0000e-005	6.3000e-004	0.0000	2.3000e-004	0.0000	2.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1733	0.1733	0.0000	0.0000	0.1734
Total	**1.3000e-004**	**1.1600e-003**	**9.7000e-004**	**0.0000**	**3.4000e-004**	**0.0000**	**3.5000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.5791**	**0.5791**	**1.0000e-005**	**0.0000**	**0.5796**

3.7 Excavation of Bore/Receiving Pits - 2023

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-004	6.1400e-003	8.9300e-003	1.0000e-005		3.0000e-004	3.0000e-004		2.8000e-004	2.8000e-004	0.0000	1.0943	1.0943	3.5000e-004	0.0000	1.1032
Total	**6.1000e-004**	**6.1400e-003**	**8.9300e-003**	**1.0000e-005**	**0.0000**	**3.0000e-004**	**3.0000e-004**	**0.0000**	**2.8000e-004**	**2.8000e-004**	**0.0000**	**1.0943**	**1.0943**	**3.5000e-004**	**0.0000**	**1.1032**

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	1.0000e-005	2.0000e-004	6.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0764	0.0764	0.0000	0.0000	0.0765
Vendor	3.0000e-005	8.9000e-004	2.8000e-004	0.0000	9.0000e-005	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.3294	0.3294	1.0000e-005	0.0000	0.3298
Worker	9.0000e-005	7.0000e-005	6.3000e-004	0.0000	2.3000e-004	0.0000	2.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1733	0.1733	0.0000	0.0000	0.1734
Total	**1.3000e-004**	**1.1600e-003**	**9.7000e-004**	**0.0000**	**3.4000e-004**	**0.0000**	**3.5000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.5791**	**0.5791**	**1.0000e-005**	**0.0000**	**0.5796**

3.8 Installation of Pipe - 2023

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	5.7000e-003	0.0541	0.0539	2.5000e-004		1.7500e-003	1.7500e-003		1.6100e-003	1.6100e-003	0.0000	22.0067	22.0067	7.1200e-003	0.0000	22.1846
Total	**5.7000e-003**	**0.0541**	**0.0539**	**2.5000e-004**		**1.7500e-003**	**1.7500e-003**		**1.6100e-003**	**1.6100e-003**	**0.0000**	**22.0067**	**22.0067**	**7.1200e-003**	**0.0000**	**22.1846**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.9000e-004	0.0119	3.7400e-003	5.0000e-005	1.2500e-003	3.0000e-005	1.2800e-003	3.6000e-004	3.0000e-005	3.9000e-004	0.0000	4.3649	4.3649	1.8000e-004	0.0000	4.3694
Worker	5.7000e-004	4.6000e-004	4.1500e-003	1.0000e-005	1.5300e-003	1.0000e-005	1.5400e-003	4.1000e-004	1.0000e-005	4.2000e-004	0.0000	1.1480	1.1480	3.0000e-005	0.0000	1.1488
Total	**9.6000e-004**	**0.0123**	**7.8900e-003**	**6.0000e-005**	**2.7800e-003**	**4.0000e-005**	**2.8200e-003**	**7.7000e-004**	**4.0000e-005**	**8.1000e-004**	**0.0000**	**5.5129**	**5.5129**	**2.1000e-004**	**0.0000**	**5.5182**

3.8 Installation of Pipe - 2023

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	5.7000e-003	0.0541	0.0539	2.5000e-004		1.7500e-003	1.7500e-003		1.6100e-003	1.6100e-003	0.0000	22.0066	22.0066	7.1200e-003	0.0000	22.1846
Total	**5.7000e-003**	**0.0541**	**0.0539**	**2.5000e-004**		**1.7500e-003**	**1.7500e-003**		**1.6100e-003**	**1.6100e-003**	**0.0000**	**22.0066**	**22.0066**	**7.1200e-003**	**0.0000**	**22.1846**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.9000e-004	0.0119	3.7400e-003	5.0000e-005	1.2500e-003	3.0000e-005	1.2800e-003	3.6000e-004	3.0000e-005	3.9000e-004	0.0000	4.3649	4.3649	1.8000e-004	0.0000	4.3694
Worker	5.7000e-004	4.6000e-004	4.1500e-003	1.0000e-005	1.5300e-003	1.0000e-005	1.5400e-003	4.1000e-004	1.0000e-005	4.2000e-004	0.0000	1.1480	1.1480	3.0000e-005	0.0000	1.1488
Total	**9.6000e-004**	**0.0123**	**7.8900e-003**	**6.0000e-005**	**2.7800e-003**	**4.0000e-005**	**2.8200e-003**	**7.7000e-004**	**4.0000e-005**	**8.1000e-004**	**0.0000**	**5.5129**	**5.5129**	**2.1000e-004**	**0.0000**	**5.5182**

3.9 Backfill - 2023

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4100e-003	0.0181	0.0262	4.0000e-005		9.2000e-004	9.2000e-004		9.0000e-004	9.0000e-004	0.0000	3.5058	3.5058	5.0000e-004	0.0000	3.5182
Total	**2.4100e-003**	**0.0181**	**0.0262**	**4.0000e-005**	**0.0000**	**9.2000e-004**	**9.2000e-004**	**0.0000**	**9.0000e-004**	**9.0000e-004**	**0.0000**	**3.5058**	**3.5058**	**5.0000e-004**	**0.0000**	**3.5182**

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	1.0000e-005	4.0000e-004	1.2000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1527	0.1527	1.0000e-005	0.0000	0.1529
Vendor	6.0000e-005	1.7900e-003	5.6000e-004	1.0000e-005	1.9000e-004	0.0000	1.9000e-004	5.0000e-005	0.0000	6.0000e-005	0.0000	0.6589	0.6589	3.0000e-005	0.0000	0.6595
Worker	9.0000e-005	7.0000e-005	6.3000e-004	0.0000	2.3000e-004	0.0000	2.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1733	0.1733	0.0000	0.0000	0.1734
Total	**1.6000e-004**	**2.2600e-003**	**1.3100e-003**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**4.6000e-004**	**1.2000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.9848**	**0.9848**	**4.0000e-005**	**0.0000**	**0.9858**

3.9 Backfill - 2023

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4100e-003	0.0181	0.0262	4.0000e-005		9.2000e-004	9.2000e-004		9.0000e-004	9.0000e-004	0.0000	3.5057	3.5057	5.0000e-004	0.0000	3.5182
Total	**2.4100e-003**	**0.0181**	**0.0262**	**4.0000e-005**	**0.0000**	**9.2000e-004**	**9.2000e-004**	**0.0000**	**9.0000e-004**	**9.0000e-004**	**0.0000**	**3.5057**	**3.5057**	**5.0000e-004**	**0.0000**	**3.5182**

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	1.0000e-005	4.0000e-004	1.2000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1527	0.1527	1.0000e-005	0.0000	0.1529
Vendor	6.0000e-005	1.7900e-003	5.6000e-004	1.0000e-005	1.9000e-004	0.0000	1.9000e-004	5.0000e-005	0.0000	6.0000e-005	0.0000	0.6589	0.6589	3.0000e-005	0.0000	0.6595
Worker	9.0000e-005	7.0000e-005	6.3000e-004	0.0000	2.3000e-004	0.0000	2.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1733	0.1733	0.0000	0.0000	0.1734
Total	**1.6000e-004**	**2.2600e-003**	**1.3100e-003**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**4.6000e-004**	**1.2000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.9848**	**0.9848**	**4.0000e-005**	**0.0000**	**0.9858**

3.10 Installation of Metered Turnouts - 2023

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	1.6600e-003	0.0169	0.0245	3.0000e-005		8.3000e-004	8.3000e-004		7.7000e-004	7.7000e-004	0.0000	3.0094	3.0094	9.7000e-004	0.0000	3.0338
Total	**1.6600e-003**	**0.0169**	**0.0245**	**3.0000e-005**		**8.3000e-004**	**8.3000e-004**		**7.7000e-004**	**7.7000e-004**	**0.0000**	**3.0094**	**3.0094**	**9.7000e-004**	**0.0000**	**3.0338**

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	8.0000e-005	2.4600e-003	7.8000e-004	1.0000e-005	2.6000e-004	1.0000e-005	2.6000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.9059	0.9059	4.0000e-005	0.0000	0.9069
Worker	2.4000e-004	1.9000e-004	1.7200e-003	1.0000e-005	6.4000e-004	0.0000	6.4000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.4765	0.4765	1.0000e-005	0.0000	0.4768
Total	**3.2000e-004**	**2.6500e-003**	**2.5000e-003**	**2.0000e-005**	**9.0000e-004**	**1.0000e-005**	**9.0000e-004**	**2.4000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**1.3825**	**1.3825**	**5.0000e-005**	**0.0000**	**1.3837**

3.10 Installation of Metered Turnouts - 2023

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	1.6600e-003	0.0169	0.0245	3.0000e-005		8.3000e-004	8.3000e-004		7.7000e-004	7.7000e-004	0.0000	3.0094	3.0094	9.7000e-004	0.0000	3.0338
Total	**1.6600e-003**	**0.0169**	**0.0245**	**3.0000e-005**		**8.3000e-004**	**8.3000e-004**		**7.7000e-004**	**7.7000e-004**	**0.0000**	**3.0094**	**3.0094**	**9.7000e-004**	**0.0000**	**3.0338**

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	8.0000e-005	2.4600e-003	7.8000e-004	1.0000e-005	2.6000e-004	1.0000e-005	2.6000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.9059	0.9059	4.0000e-005	0.0000	0.9069
Worker	2.4000e-004	1.9000e-004	1.7200e-003	1.0000e-005	6.4000e-004	0.0000	6.4000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.4765	0.4765	1.0000e-005	0.0000	0.4768
Total	**3.2000e-004**	**2.6500e-003**	**2.5000e-003**	**2.0000e-005**	**9.0000e-004**	**1.0000e-005**	**9.0000e-004**	**2.4000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**1.3825**	**1.3825**	**5.0000e-005**	**0.0000**	**1.3837**

3.11 Pavement Repairs - 2023

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	9.7000e-004	9.6400e-003	0.0132	2.0000e-005		5.0000e-004	5.0000e-004		4.6000e-004	4.6000e-004	0.0000	1.7651	1.7651	5.7000e-004	0.0000	1.7794
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.7000e-004**	**9.6400e-003**	**0.0132**	**2.0000e-005**		**5.0000e-004**	**5.0000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**1.7651**	**1.7651**	**5.7000e-004**	**0.0000**	**1.7794**

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	4.0000e-005	1.3400e-003	4.2000e-004	1.0000e-005	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.4941	0.4941	2.0000e-005	0.0000	0.4947
Worker	6.0000e-005	5.0000e-005	4.7000e-004	0.0000	1.7000e-004	0.0000	1.7000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1300	0.1300	0.0000	0.0000	0.1301
Total	**1.0000e-004**	**1.3900e-003**	**8.9000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**3.1000e-004**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.6241**	**0.6241**	**2.0000e-005**	**0.0000**	**0.6247**

3.11 Pavement Repairs - 2023

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	9.7000e-004	9.6400e-003	0.0132	2.0000e-005		5.0000e-004	5.0000e-004		4.6000e-004	4.6000e-004	0.0000	1.7651	1.7651	5.7000e-004	0.0000	1.7794
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.7000e-004**	**9.6400e-003**	**0.0132**	**2.0000e-005**		**5.0000e-004**	**5.0000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**1.7651**	**1.7651**	**5.7000e-004**	**0.0000**	**1.7794**

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	4.0000e-005	1.3400e-003	4.2000e-004	1.0000e-005	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.4941	0.4941	2.0000e-005	0.0000	0.4947
Worker	6.0000e-005	5.0000e-005	4.7000e-004	0.0000	1.7000e-004	0.0000	1.7000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1300	0.1300	0.0000	0.0000	0.1301
Total	**1.0000e-004**	**1.3900e-003**	**8.9000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**3.1000e-004**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.6241**	**0.6241**	**2.0000e-005**	**0.0000**	**0.6247**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	1.3400e-003	6.1400e-003	0.0185	6.0000e-005	6.0900e-003	6.0000e-005	6.1500e-003	1.6300e-003	5.0000e-005	1.6800e-003	0.0000	5.7180	5.7180	2.0000e-004	0.0000	5.7229
Unmitigated	1.3400e-003	6.1400e-003	0.0185	6.0000e-005	6.0900e-003	6.0000e-005	6.1500e-003	1.6300e-003	5.0000e-005	1.6800e-003	0.0000	5.7180	5.7180	2.0000e-004	0.0000	5.7229

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Research & Development	4.00	4.00	4.00	16,235	16,235
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	4.00	4.00	4.00	16,235	16,235

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
Research & Development	13.00	13.00	13.00	33.00	48.00	19.00	82	15	3
Unrefrigerated Warehouse-No	13.00	13.00	13.00	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Research & Development	0.582546	0.028575	0.198242	0.117308	0.024121	0.006096	0.012865	0.019735	0.002341	0.001188	0.004913	0.000770	0.001299
Unrefrigerated Warehouse-No Rail	0.582546	0.028575	0.198242	0.117308	0.024121	0.006096	0.012865	0.019735	0.002341	0.001188	0.004913	0.000770	0.001299

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	43.3230	43.3230	6.1000e-003	1.2600e-003	43.8515
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	43.3230	43.3230	6.1000e-003	1.2600e-003	43.8515
NaturalGas Mitigated	2.0300e-003	0.0184	0.0155	1.1000e-004		1.4000e-003	1.4000e-003		1.4000e-003	1.4000e-003	0.0000	20.0765	20.0765	3.8000e-004	3.7000e-004	20.1958
NaturalGas Unmitigated	2.0300e-003	0.0184	0.0155	1.1000e-004		1.4000e-003	1.4000e-003		1.4000e-003	1.4000e-003	0.0000	20.0765	20.0765	3.8000e-004	3.7000e-004	20.1958

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					
Research & Development	41740	2.3000e-004	2.0500e-003	1.7200e-003	1.0000e-005		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	2.2274	2.2274	4.0000e-005	4.0000e-005	2.2406
Unrefrigerated Warehouse-No Rail	334480	1.8000e-003	0.0164	0.0138	1.0000e-004		1.2500e-003	1.2500e-003		1.2500e-003	1.2500e-003	0.0000	17.8491	17.8491	3.4000e-004	3.3000e-004	17.9552
Total		**2.0300e-003**	**0.0185**	**0.0155**	**1.1000e-004**		**1.4100e-003**	**1.4100e-003**		**1.4100e-003**	**1.4100e-003**	**0.0000**	**20.0765**	**20.0765**	**3.8000e-004**	**3.7000e-004**	**20.1958**

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					
Research & Development	41740	2.3000e-004	2.0500e-003	1.7200e-003	1.0000e-005		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	2.2274	2.2274	4.0000e-005	4.0000e-005	2.2406
Unrefrigerated Warehouse-No Rail	334480	1.8000e-003	0.0164	0.0138	1.0000e-004		1.2500e-003	1.2500e-003		1.2500e-003	1.2500e-003	0.0000	17.8491	17.8491	3.4000e-004	3.3000e-004	17.9552
Total		**2.0300e-003**	**0.0185**	**0.0155**	**1.1000e-004**		**1.4100e-003**	**1.4100e-003**		**1.4100e-003**	**1.4100e-003**	**0.0000**	**20.0765**	**20.0765**	**3.8000e-004**	**3.7000e-004**	**20.1958**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Research & Development	17640	1.6483	2.3000e-004	5.0000e-005	1.6684
Unrefrigerated Warehouse-No Rail	446005	41.6747	5.8700e-003	1.2100e-003	42.1831
Total		**43.3230**	**6.1000e-003**	**1.2600e-003**	**43.8515**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Research & Development	17640	1.6483	2.3000e-004	5.0000e-005	1.6684
Unrefrigerated Warehouse-No Rail	446005	41.6747	5.8700e-003	1.2100e-003	42.1831
Total		**43.3230**	**6.1000e-003**	**1.2600e-003**	**43.8515**

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	0.1039	0.0000	3.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.7000e-004	6.7000e-004	0.0000	0.0000	7.2000e-004
Unmitigated	0.1039	0.0000	3.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.7000e-004	6.7000e-004	0.0000	0.0000	7.2000e-004

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	0.0238					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0801					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	3.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.7000e-004	6.7000e-004	0.0000	0.0000	7.2000e-004
Total	**0.1038**	**0.0000**	**3.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**6.7000e-004**	**6.7000e-004**	**0.0000**	**0.0000**	**7.2000e-004**

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	0.0238					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0801					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	3.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.7000e-004	6.7000e-004	0.0000	0.0000	7.2000e-004
Total	**0.1038**	**0.0000**	**3.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**6.7000e-004**	**6.7000e-004**	**0.0000**	**0.0000**	**7.2000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.8092	0.0321	7.7000e-004	1.8418
Unmitigated	0.8092	0.0321	7.7000e-004	1.8418

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Research & Development	0.983388 / 0	0.8092	0.0321	7.7000e-004	1.8418
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.8092**	**0.0321**	**7.7000e-004**	**1.8418**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Research & Development	0.983388 / 0	0.8092	0.0321	7.7000e-004	1.8418
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.8092**	**0.0321**	**7.7000e-004**	**1.8418**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	3.5605	0.2104	0.0000	8.8209
Unmitigated	3.5605	0.2104	0.0000	8.8209

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Research & Development	0.15	0.0305	1.8000e-003	0.0000	0.0754
Unrefrigerated Warehouse-No Rail	17.39	3.5300	0.2086	0.0000	8.7455
Total		**3.5605**	**0.2104**	**0.0000**	**8.8209**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Research & Development	0.15	0.0305	1.8000e-003	0.0000	0.0754
Unrefrigerated Warehouse-No Rail	17.39	3.5300	0.2086	0.0000	8.7455
Total		**3.5605**	**0.2104**	**0.0000**	**8.8209**

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	1	100	500	0.73	CNG

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 - CNG (500 - 9999 HP)	0.2200	0.0169	0.5729	8.0000e-005		1.2100e-003	1.2100e-003		1.2100e-003	1.2100e-003	0.0000	12.7484	12.7484	0.0267	0.0000	13.4148
Total	**0.2200**	**0.0169**	**0.5729**	**8.0000e-005**		**1.2100e-003**	**1.2100e-003**		**1.2100e-003**	**1.2100e-003**	**0.0000**	**12.7484**	**12.7484**	**0.0267**	**0.0000**	**13.4148**

11.0 Vegetation

San Miguel WWTP Upgrade/Expansion Project

San Luis Obispo County APCD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	2.00	1000sqft	0.05	2,000.00	0
Unrefrigerated Warehouse-No Rail	18.50	1000sqft	0.42	18,500.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	3			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	206	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Based on project description. CO2 rate based on PGE 2020 Sustainability Report.

Land Use - Based on project description.

Construction Phase - Based on information from SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

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Off-road Equipment - Based on information provided by SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

Trips and VMT - Based on information provided by SMCSD.

On-road Fugitive Dust - CalEEMod defaults.

Grading - Based on information provided by SMCSD.

Vehicle Trips - 2 additional employees

Energy Use - CalEEMod defaults. Pump energy use added to warehouse.

Water And Wastewater - Based on information from SMCSD.

Solid Waste - CalEEMod defaults.

Construction Off-road Equipment Mitigation - In accordance with SLOCAPCD Rule 401.

Stationary Sources - Emergency Generators and Fire Pumps - Based on information provided by SMCSD.

Stationary Sources - Emergency Generators and Fire Pumps EF - CalEEMod defaults.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	100.00	5.00

tblConstructionPhase	NumDays	100.00	53.00
tblConstructionPhase	NumDays	100.00	22.00
tblConstructionPhase	NumDays	2.00	8.00
tblConstructionPhase	NumDays	2.00	8.00
tblConstructionPhase	NumDays	5.00	6.00
tblConstructionPhase	NumDays	1.00	88.00
tblConstructionPhase	NumDays	1.00	14.00
tblEnergyUse	LightingElect	3.22	0.00
tblEnergyUse	NT24E	5.13	0.00
tblEnergyUse	T24E	1.04	24.11
tblGrading	MaterialExported	0.00	11.00
tblGrading	MaterialImported	0.00	27.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	206
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	21.00
tblTripsAndVMT	HaulingTripLength	20.00	21.00
tblTripsAndVMT	HaulingTripNumber	1.00	2.00
tblTripsAndVMT	HaulingTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	3.00	2.00
tblTripsAndVMT	WorkerTripNumber	38.00	50.00

tblTripsAndVMT	WorkerTripNumber	5.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	50.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblTripsAndVMT	WorkerTripNumber	0.00	4.00
tblTripsAndVMT	WorkerTripNumber	3.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblTripsAndVMT	WorkerTripNumber	5.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblVehicleTrips	ST_TR	1.90	2.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.11	2.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	8.11	2.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	IndoorWaterUseRate	4,278,125.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2022	8.4979	88.7958	55.6160	0.1342	8.1312	3.7334	10.5436	3.6200	3.4617	5.8983	0.0000	12,994.7047	12,994.7047	3.6820	0.0000	13,086.7540
2023	0.6399	5.0750	6.8856	0.0127	0.1172	0.2318	0.3490	0.0322	0.2256	0.2578	0.0000	1,240.8269	1,240.8269	0.3047	0.0000	1,244.5359
Maximum	**8.4979**	**88.7958**	**55.6160**	**0.1342**	**8.1312**	**3.7334**	**10.5436**	**3.6200**	**3.4617**	**5.8983**	**0.0000**	**12,994.7047**	**12,994.7047**	**3.6820**	**0.0000**	**13,086.7540**

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	lb/day										lb/day					
2022	8.4979	88.7958	55.6160	0.1342	3.9442	3.7334	6.3566	1.7049	3.4617	3.9832	0.0000	12,994.7047	12,994.7047	3.6820	0.0000	13,086.7540
2023	0.6399	5.0750	6.8856	0.0127	0.1169	0.2318	0.3487	0.0321	0.2256	0.2578	0.0000	1,240.8269	1,240.8269	0.3047	0.0000	1,244.5359
Maximum	**8.4979**	**88.7958**	**55.6160**	**0.1342**	**3.9442**	**3.7334**	**6.3566**	**1.7049**	**3.4617**	**3.9832**	**0.0000**	**12,994.7047**	**12,994.7047**	**3.6820**	**0.0000**	**13,086.7540**

	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**	**50.77**	**0.00**	**38.44**	**52.44**	**0.00**	**31.11**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
Area	0.5691	2.0000e-005	2.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Energy	0.0111	0.1011	0.0849	6.1000e-004		7.6800e-003	7.6800e-003		7.6800e-003	7.6800e-003		121.2635	121.2635	2.3200e-003	2.2200e-003	121.9841
Mobile	7.7300e-003	0.0323	0.1036	3.5000e-004	0.0344	3.1000e-004	0.0347	9.1800e-003	2.9000e-004	9.4700e-003		35.7822	35.7822	1.2100e-003		35.8124
Stationary	4.3990	0.3388	11.4571	1.5300e-003		0.0243	0.0243		0.0243	0.0243		281.0547	281.0547	0.5877		295.7462
Total	**4.9869**	**0.4722**	**11.6477**	**2.4900e-003**	**0.0344**	**0.0323**	**0.0666**	**9.1800e-003**	**0.0323**	**0.0414**		**438.1049**	**438.1049**	**0.5912**	**2.2200e-003**	**453.5475**

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	lb/day										lb/day					
Area	0.5691	2.0000e-005	2.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Energy	0.0111	0.1011	0.0849	6.1000e-004		7.6800e-003	7.6800e-003		7.6800e-003	7.6800e-003		121.2635	121.2635	2.3200e-003	2.2200e-003	121.9841
Mobile	7.7300e-003	0.0323	0.1036	3.5000e-004	0.0344	3.1000e-004	0.0347	9.1800e-003	2.9000e-004	9.4700e-003		35.7822	35.7822	1.2100e-003		35.8124
Stationary	4.3990	0.3388	11.4571	1.5300e-003		0.0243	0.0243		0.0243	0.0243		281.0547	281.0547	0.5877		295.7462
Total	**4.9869**	**0.4722**	**11.6477**	**2.4900e-003**	**0.0344**	**0.0323**	**0.0666**	**9.1800e-003**	**0.0323**	**0.0414**		**438.1049**	**438.1049**	**0.5912**	**2.2200e-003**	**453.5475**

	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	1/3/2022	5/4/2022	5	88	
2	Trenching	Trenching	5/5/2022	8/4/2022	5	66	
3	Plant Installation	Building Construction	8/5/2022	12/22/2022	5	100	
4	Demobilization	Building Construction	12/23/2022	12/29/2022	5	5	
5	Pre-Construction Utility Locations & Potholing	Site Preparation	1/2/2023	1/19/2023	5	14	
6	Excavation of Bore/Receiving Pits	Grading	1/20/2023	1/31/2023	5	8	
7	Installation of Pipe	Building Construction	2/1/2023	4/14/2023	5	53	
8	Backfill	Grading	4/15/2023	4/26/2023	5	8	
9	Installation of Metered Turnouts	Building Construction	4/27/2023	5/26/2023	5	22	
10	Pavement Repairs	Paving	5/27/2023	6/5/2023	5	6	

Acres of Grading (Site Preparation Phase): 132

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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
Excavation of Bore/Receiving Pits	Concrete/Industrial Saws	0	8.00	81	0.73
Excavation of Bore/Receiving Pits	Rubber Tired Dozers	0	1.00	247	0.40
Excavation of Bore/Receiving Pits	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Installation of Pipe	Bore/Drill Rigs	1	8.00	221	0.50
Installation of Pipe	Cranes	0	4.00	231	0.29
Installation of Pipe	Forklifts	0	6.00	89	0.20

Installation of Pipe	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Backfill	Concrete/Industrial Saws	0	8.00	81	0.73
Backfill	Crushing/Proc. Equipment	1	8.00	85	0.78
Backfill	Rubber Tired Dozers	0	1.00	247	0.40
Backfill	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Installation of Metered Turnouts	Cranes	0	4.00	231	0.29
Installation of Metered Turnouts	Forklifts	0	6.00	89	0.20
Installation of Metered Turnouts	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pavement Repairs	Cement and Mortar Mixers	0	6.00	9	0.56
Pavement Repairs	Pavers	0	7.00	130	0.42
Pavement Repairs	Paving Equipment	1	8.00	132	0.36
Pavement Repairs	Rollers	1	8.00	80	0.38
Pavement Repairs	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Site Preparation	Forklifts	3	8.00	89	0.20
Site Preparation	Generator Sets	5	8.00	84	0.74
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rollers	1	8.00	80	0.38
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Loaders	1	8.00	203	0.36
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Trenchers	1	8.00	78	0.50
Pre-Construction Utility Locations & Potholing	Graders	0	8.00	187	0.41
Pre-Construction Utility Locations & Potholing	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Trenching	Pavers	1	8.00	130	0.42
Trenching	Rollers	1	8.00	80	0.38
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trenching	Trenchers	1	8.00	78	0.50
Plant Installation	Cranes	0	4.00	231	0.29
Plant Installation	Crushing/Proc. Equipment	1	8.00	85	0.78
Plant Installation	Forklifts	0	6.00	89	0.20
Plant Installation	Graders	3	8.00	187	0.41
Plant Installation	Pumps	1	8.00	84	0.74
Plant Installation	Rollers	3	8.00	80	0.38
Plant Installation	Rubber Tired Dozers	3	8.00	247	0.40
Plant Installation	Rubber Tired Loaders	2	8.00	203	0.36
Plant Installation	Scrapers	3	8.00	367	0.48
Plant Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Demobilization	Cranes	0	4.00	231	0.29
Demobilization	Forklifts	0	6.00	89	0.20
Demobilization	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

San Miguel WWTP Upgrade/Expansion Project - San Luis Obispo County APCD Air District, Summer

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
Excavation of Bore/Receiving Pits	1	6.00	2.00	2.00	13.00	13.00	21.00	LD_Mix	HDT_Mix	HHDT
Installation of Pipe	1	6.00	4.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Backfill	2	6.00	4.00	4.00	13.00	13.00	21.00	LD_Mix	HDT_Mix	HHDT
Installation of Metered Turnouts	1	6.00	2.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Pavement Repairs	2	6.00	4.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	15	50.00	2.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Pre-Construction Utility Locations & Pot	0	4.00	0.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	4	10.00	2.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Plant Installation	17	50.00	4.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Demobilization	0	20.00	4.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2022

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	lb/day										lb/day					
Fugitive Dust					7.6128	0.0000	7.6128	3.4820	0.0000	3.4820			0.0000			0.0000
Off-Road	5.0483	50.6069	41.7490	0.0832		2.4084	2.4084		2.2745	2.2745		7,985.8300	7,985.8300	1.7233		8,028.9118
Total	**5.0483**	**50.6069**	**41.7490**	**0.0832**	**7.6128**	**2.4084**	**10.0212**	**3.4820**	**2.2745**	**5.7565**		**7,985.8300**	**7,985.8300**	**1.7233**		**8,028.9118**

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	lb/day										lb/day					
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
Vendor	9.6900e-003	0.2855	0.0769	8.7000e-004	0.0241	1.0800e-003	0.0251	6.9200e-003	1.0300e-003	7.9500e-003		93.0948	93.0948	3.9700e-003		93.1940
Worker	0.1868	0.1435	1.4790	4.3200e-003	0.4943	2.9700e-003	0.4973	0.1311	2.7400e-003	0.1338		430.2467	430.2467	0.0120		430.5473
Total	**0.1965**	**0.4290**	**1.5559**	**5.1900e-003**	**0.5184**	**4.0500e-003**	**0.5224**	**0.1380**	**3.7700e-003**	**0.1418**		**523.3416**	**523.3416**	**0.0160**		**523.7413**

3.2 Site Preparation - 2022

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	lb/day										lb/day					
Fugitive Dust					3.4258	0.0000	3.4258	1.5669	0.0000	1.5669			0.0000			0.0000
Off-Road	5.0483	50.6069	41.7490	0.0832		2.4084	2.4084		2.2745	2.2745	0.0000	7,985.8300	7,985.8300	1.7233		8,028.9118
Total	**5.0483**	**50.6069**	**41.7490**	**0.0832**	**3.4258**	**2.4084**	**5.8342**	**1.5669**	**2.2745**	**3.8414**	**0.0000**	**7,985.8300**	**7,985.8300**	**1.7233**		**8,028.9118**

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	lb/day										lb/day					
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
Vendor	9.6900e-003	0.2855	0.0769	8.7000e-004	0.0241	1.0800e-003	0.0251	6.9200e-003	1.0300e-003	7.9500e-003		93.0948	93.0948	3.9700e-003		93.1940
Worker	0.1868	0.1435	1.4790	4.3200e-003	0.4943	2.9700e-003	0.4973	0.1311	2.7400e-003	0.1338		430.2467	430.2467	0.0120		430.5473
Total	**0.1965**	**0.4290**	**1.5559**	**5.1900e-003**	**0.5184**	**4.0500e-003**	**0.5224**	**0.1380**	**3.7700e-003**	**0.1418**		**523.3416**	**523.3416**	**0.0160**		**523.7413**

3.3 Trenching - 2022

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	lb/day										lb/day					
Off-Road	0.9017	8.8801	9.5812	0.0138		0.5288	0.5288		0.4865	0.4865		1,337.5501	1,337.5501	0.4326		1,348.3649
Total	**0.9017**	**8.8801**	**9.5812**	**0.0138**		**0.5288**	**0.5288**		**0.4865**	**0.4865**		**1,337.5501**	**1,337.5501**	**0.4326**		**1,348.3649**

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	lb/day										lb/day					
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
Vendor	9.6900e-003	0.2855	0.0769	8.7000e-004	0.0241	1.0800e-003	0.0251	6.9200e-003	1.0300e-003	7.9500e-003		93.0948	93.0948	3.9700e-003		93.1940
Worker	0.0374	0.0287	0.2958	8.6000e-004	0.0989	5.9000e-004	0.0995	0.0262	5.5000e-004	0.0268		86.0494	86.0494	2.4000e-003		86.1095
Total	**0.0471**	**0.3142**	**0.3727**	**1.7300e-003**	**0.1229**	**1.6700e-003**	**0.1246**	**0.0331**	**1.5800e-003**	**0.0347**		**179.1442**	**179.1442**	**6.3700e-003**		**179.3035**

3.3 Trenching - 2022

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	lb/day										lb/day					
Off-Road	0.9017	8.8801	9.5812	0.0138		0.5288	0.5288		0.4865	0.4865	0.0000	1,337.5501	1,337.5501	0.4326		1,348.3649
Total	**0.9017**	**8.8801**	**9.5812**	**0.0138**		**0.5288**	**0.5288**		**0.4865**	**0.4865**	**0.0000**	**1,337.5501**	**1,337.5501**	**0.4326**		**1,348.3649**

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	lb/day										lb/day					
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
Vendor	9.6900e-003	0.2855	0.0769	8.7000e-004	0.0241	1.0800e-003	0.0251	6.9200e-003	1.0300e-003	7.9500e-003		93.0948	93.0948	3.9700e-003		93.1940
Worker	0.0374	0.0287	0.2958	8.6000e-004	0.0989	5.9000e-004	0.0995	0.0262	5.5000e-004	0.0268		86.0494	86.0494	2.4000e-003		86.1095
Total	**0.0471**	**0.3142**	**0.3727**	**1.7300e-003**	**0.1229**	**1.6700e-003**	**0.1246**	**0.0331**	**1.5800e-003**	**0.0347**		**179.1442**	**179.1442**	**6.3700e-003**		**179.3035**

3.4 Plant Installation - 2022

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	lb/day										lb/day					
Off-Road	8.2917	88.0814	53.9831	0.1281		3.7283	3.7283		3.4569	3.4569		12,378.2683	12,378.2683	3.6620		12,469.8187
Total	**8.2917**	**88.0814**	**53.9831**	**0.1281**		**3.7283**	**3.7283**		**3.4569**	**3.4569**		**12,378.2683**	**12,378.2683**	**3.6620**		**12,469.8187**

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	lb/day										lb/day					
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
Vendor	0.0194	0.5710	0.1539	1.7500e-003	0.0481	2.1500e-003	0.0503	0.0138	2.0600e-003	0.0159		186.1897	186.1897	7.9300e-003		186.3880
Worker	0.1868	0.1435	1.4790	4.3200e-003	0.4943	2.9700e-003	0.4973	0.1311	2.7400e-003	0.1338		430.2467	430.2467	0.0120		430.5473
Total	**0.2062**	**0.7145**	**1.6329**	**6.0700e-003**	**0.5424**	**5.1200e-003**	**0.5476**	**0.1449**	**4.8000e-003**	**0.1498**		**616.4364**	**616.4364**	**0.0200**		**616.9353**

3.4 Plant Installation - 2022

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	lb/day										lb/day					
Off-Road	8.2917	88.0814	53.9831	0.1281		3.7283	3.7283		3.4569	3.4569	0.0000	12,378.2683	12,378.2683	3.6620		12,469.8187
Total	**8.2917**	**88.0814**	**53.9831**	**0.1281**		**3.7283**	**3.7283**		**3.4569**	**3.4569**	**0.0000**	**12,378.2683**	**12,378.2683**	**3.6620**		**12,469.8187**

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	lb/day										lb/day					
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
Vendor	0.0194	0.5710	0.1539	1.7500e-003	0.0481	2.1500e-003	0.0503	0.0138	2.0600e-003	0.0159		186.1897	186.1897	7.9300e-003		186.3880
Worker	0.1868	0.1435	1.4790	4.3200e-003	0.4943	2.9700e-003	0.4973	0.1311	2.7400e-003	0.1338		430.2467	430.2467	0.0120		430.5473
Total	**0.2062**	**0.7145**	**1.6329**	**6.0700e-003**	**0.5424**	**5.1200e-003**	**0.5476**	**0.1449**	**4.8000e-003**	**0.1498**		**616.4364**	**616.4364**	**0.0200**		**616.9353**

3.5 Demobilization - 2022

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	lb/day										lb/day					
Off-Road	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**

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	lb/day										lb/day					
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
Vendor	0.0194	0.5710	0.1539	1.7500e-003	0.0481	2.1500e-003	0.0503	0.0138	2.0600e-003	0.0159		186.1897	186.1897	7.9300e-003		186.3880
Worker	0.0747	0.0574	0.5916	1.7300e-003	0.1977	1.1900e-003	0.1989	0.0524	1.1000e-003	0.0535		172.0987	172.0987	4.8100e-003		172.2189
Total	**0.0941**	**0.6284**	**0.7455**	**3.4800e-003**	**0.2459**	**3.3400e-003**	**0.2492**	**0.0663**	**3.1600e-003**	**0.0695**		**358.2884**	**358.2884**	**0.0127**		**358.6069**

3.5 Demobilization - 2022

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	lb/day										lb/day					
Off-Road	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**

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	lb/day										lb/day					
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
Vendor	0.0194	0.5710	0.1539	1.7500e-003	0.0481	2.1500e-003	0.0503	0.0138	2.0600e-003	0.0159		186.1897	186.1897	7.9300e-003		186.3880
Worker	0.0747	0.0574	0.5916	1.7300e-003	0.1977	1.1900e-003	0.1989	0.0524	1.1000e-003	0.0535		172.0987	172.0987	4.8100e-003		172.2189
Total	**0.0941**	**0.6284**	**0.7455**	**3.4800e-003**	**0.2459**	**3.3400e-003**	**0.2492**	**0.0663**	**3.1600e-003**	**0.0695**		**358.2884**	**358.2884**	**0.0127**		**358.6069**

3.6 Pre-Construction Utility Locations & Potholing - 2023

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	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	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**

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	lb/day										lb/day					
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
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
Worker	0.0140	0.0103	0.1083	3.3000e-004	0.0395	2.3000e-004	0.0398	0.0105	2.1000e-004	0.0107		33.1284	33.1284	8.6000e-004		33.1499
Total	**0.0140**	**0.0103**	**0.1083**	**3.3000e-004**	**0.0395**	**2.3000e-004**	**0.0398**	**0.0105**	**2.1000e-004**	**0.0107**		**33.1284**	**33.1284**	**8.6000e-004**		**33.1499**

3.6 Pre-Construction Utility Locations & Potholing - 2023

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	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	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**		**0.0000**

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	lb/day										lb/day					
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
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
Worker	0.0140	0.0103	0.1083	3.3000e-004	0.0395	2.3000e-004	0.0398	0.0105	2.1000e-004	0.0107		33.1284	33.1284	8.6000e-004		33.1499
Total	**0.0140**	**0.0103**	**0.1083**	**3.3000e-004**	**0.0395**	**2.3000e-004**	**0.0398**	**0.0105**	**2.1000e-004**	**0.0107**		**33.1284**	**33.1284**	**8.6000e-004**		**33.1499**

3.7 Excavation of Bore/Receiving Pits - 2023

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	lb/day										lb/day					
Fugitive Dust					2.5000e-004	0.0000	2.5000e-004	4.0000e-005	0.0000	4.0000e-005			0.0000			0.0000
Off-Road	0.1514	1.5357	2.2313	3.1200e-003		0.0758	0.0758		0.0698	0.0698		301.5765	301.5765	0.0975		304.0149
Total	**0.1514**	**1.5357**	**2.2313**	**3.1200e-003**	**2.5000e-004**	**0.0758**	**0.0761**	**4.0000e-005**	**0.0698**	**0.0698**		**301.5765**	**301.5765**	**0.0975**		**304.0149**

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	lb/day										lb/day					
Hauling	1.3800e-003	0.0493	0.0147	2.0000e-004	4.5900e-003	1.3000e-004	4.7200e-003	1.2600e-003	1.2000e-004	1.3800e-003		21.1738	21.1738	1.2100e-003		21.2040
Vendor	7.2900e-003	0.2205	0.0680	8.6000e-004	0.0241	5.1000e-004	0.0246	6.9200e-003	4.9000e-004	7.4100e-003		91.3400	91.3400	3.6800e-003		91.4321
Worker	0.0210	0.0155	0.1624	5.0000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		49.6926	49.6926	1.2900e-003		49.7249
Total	**0.0297**	**0.2853**	**0.2451**	**1.5600e-003**	**0.0880**	**9.9000e-004**	**0.0890**	**0.0239**	**9.3000e-004**	**0.0248**		**162.2065**	**162.2065**	**6.1800e-003**		**162.3609**

3.7 Excavation of Bore/Receiving Pits - 2023

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	lb/day										lb/day					
Fugitive Dust					1.1000e-004	0.0000	1.1000e-004	2.0000e-005	0.0000	2.0000e-005			0.0000			0.0000
Off-Road	0.1514	1.5357	2.2313	3.1200e-003		0.0758	0.0758		0.0698	0.0698	0.0000	301.5765	301.5765	0.0975		304.0149
Total	**0.1514**	**1.5357**	**2.2313**	**3.1200e-003**	**1.1000e-004**	**0.0758**	**0.0759**	**2.0000e-005**	**0.0698**	**0.0698**	**0.0000**	**301.5765**	**301.5765**	**0.0975**		**304.0149**

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	lb/day										lb/day					
Hauling	1.3800e-003	0.0493	0.0147	2.0000e-004	4.5900e-003	1.3000e-004	4.7200e-003	1.2600e-003	1.2000e-004	1.3800e-003		21.1738	21.1738	1.2100e-003		21.2040
Vendor	7.2900e-003	0.2205	0.0680	8.6000e-004	0.0241	5.1000e-004	0.0246	6.9200e-003	4.9000e-004	7.4100e-003		91.3400	91.3400	3.6800e-003		91.4321
Worker	0.0210	0.0155	0.1624	5.0000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		49.6926	49.6926	1.2900e-003		49.7249
Total	**0.0297**	**0.2853**	**0.2451**	**1.5600e-003**	**0.0880**	**9.9000e-004**	**0.0890**	**0.0239**	**9.3000e-004**	**0.0248**		**162.2065**	**162.2065**	**6.1800e-003**		**162.3609**

3.8 Installation of Pipe - 2023

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	lb/day										lb/day					
Off-Road	0.2151	2.0396	2.0329	9.4600e-003		0.0660	0.0660		0.0608	0.0608		915.4033	915.4033	0.2961		922.8048
Total	**0.2151**	**2.0396**	**2.0329**	**9.4600e-003**		**0.0660**	**0.0660**		**0.0608**	**0.0608**		**915.4033**	**915.4033**	**0.2961**		**922.8048**

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	lb/day										lb/day					
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
Vendor	0.0146	0.4410	0.1360	1.7100e-003	0.0481	1.0200e-003	0.0492	0.0139	9.7000e-004	0.0148		182.6801	182.6801	7.3600e-003		182.8642
Worker	0.0210	0.0155	0.1624	5.0000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		49.6926	49.6926	1.2900e-003		49.7249
Total	**0.0356**	**0.4565**	**0.2984**	**2.2100e-003**	**0.1075**	**1.3700e-003**	**0.1088**	**0.0296**	**1.2900e-003**	**0.0309**		**232.3727**	**232.3727**	**8.6500e-003**		**232.5890**

3.8 Installation of Pipe - 2023

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	lb/day										lb/day					
Off-Road	0.2151	2.0396	2.0329	9.4600e-003		0.0660	0.0660		0.0608	0.0608	0.0000	915.4033	915.4033	0.2961		922.8048
Total	**0.2151**	**2.0396**	**2.0329**	**9.4600e-003**		**0.0660**	**0.0660**		**0.0608**	**0.0608**	**0.0000**	**915.4033**	**915.4033**	**0.2961**		**922.8048**

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	lb/day										lb/day					
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
Vendor	0.0146	0.4410	0.1360	1.7100e-003	0.0481	1.0200e-003	0.0492	0.0139	9.7000e-004	0.0148		182.6801	182.6801	7.3600e-003		182.8642
Worker	0.0210	0.0155	0.1624	5.0000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		49.6926	49.6926	1.2900e-003		49.7249
Total	**0.0356**	**0.4565**	**0.2984**	**2.2100e-003**	**0.1075**	**1.3700e-003**	**0.1088**	**0.0296**	**1.2900e-003**	**0.0309**		**232.3727**	**232.3727**	**8.6500e-003**		**232.5890**

3.9 Backfill - 2023

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	lb/day										lb/day					
Fugitive Dust					6.2000e-004	0.0000	6.2000e-004	9.0000e-005	0.0000	9.0000e-005			0.0000			0.0000
Off-Road	0.6016	4.5198	6.5579	0.0101		0.2302	0.2302		0.2241	0.2241		966.1066	966.1066	0.1373		969.5389
Total	**0.6016**	**4.5198**	**6.5579**	**0.0101**	**6.2000e-004**	**0.2302**	**0.2308**	**9.0000e-005**	**0.2241**	**0.2242**		**966.1066**	**966.1066**	**0.1373**		**969.5389**

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	lb/day										lb/day					
Hauling	2.7600e-003	0.0987	0.0293	3.9000e-004	9.1700e-003	2.6000e-004	9.4300e-003	2.5100e-003	2.5000e-004	2.7600e-003		42.3476	42.3476	2.4100e-003		42.4079
Vendor	0.0146	0.4410	0.1360	1.7100e-003	0.0481	1.0200e-003	0.0492	0.0139	9.7000e-004	0.0148		182.6801	182.6801	7.3600e-003		182.8642
Worker	0.0210	0.0155	0.1624	5.0000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		49.6926	49.6926	1.2900e-003		49.7249
Total	**0.0384**	**0.5551**	**0.3277**	**2.6000e-003**	**0.1166**	**1.6300e-003**	**0.1182**	**0.0321**	**1.5400e-003**	**0.0336**		**274.7203**	**274.7203**	**0.0111**		**274.9969**

3.9 Backfill - 2023

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	lb/day										lb/day					
Fugitive Dust					2.8000e-004	0.0000	2.8000e-004	4.0000e-005	0.0000	4.0000e-005			0.0000			0.0000
Off-Road	0.6016	4.5198	6.5579	0.0101		0.2302	0.2302		0.2241	0.2241	0.0000	966.1066	966.1066	0.1373		969.5389
Total	**0.6016**	**4.5198**	**6.5579**	**0.0101**	**2.8000e-004**	**0.2302**	**0.2304**	**4.0000e-005**	**0.2241**	**0.2241**	**0.0000**	**966.1066**	**966.1066**	**0.1373**		**969.5389**

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	lb/day										lb/day					
Hauling	2.7600e-003	0.0987	0.0293	3.9000e-004	9.1700e-003	2.6000e-004	9.4300e-003	2.5100e-003	2.5000e-004	2.7600e-003		42.3476	42.3476	2.4100e-003		42.4079
Vendor	0.0146	0.4410	0.1360	1.7100e-003	0.0481	1.0200e-003	0.0492	0.0139	9.7000e-004	0.0148		182.6801	182.6801	7.3600e-003		182.8642
Worker	0.0210	0.0155	0.1624	5.0000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		49.6926	49.6926	1.2900e-003		49.7249
Total	**0.0384**	**0.5551**	**0.3277**	**2.6000e-003**	**0.1166**	**1.6300e-003**	**0.1182**	**0.0321**	**1.5400e-003**	**0.0336**		**274.7203**	**274.7203**	**0.0111**		**274.9969**

3.10 Installation of Metered Turnouts - 2023

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	lb/day										lb/day					
Off-Road	0.1514	1.5357	2.2313	3.1200e-003		0.0758	0.0758		0.0698	0.0698		301.5765	301.5765	0.0975		304.0149
Total	**0.1514**	**1.5357**	**2.2313**	**3.1200e-003**		**0.0758**	**0.0758**		**0.0698**	**0.0698**		**301.5765**	**301.5765**	**0.0975**		**304.0149**

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	lb/day										lb/day					
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
Vendor	7.2900e-003	0.2205	0.0680	8.6000e-004	0.0241	5.1000e-004	0.0246	6.9200e-003	4.9000e-004	7.4100e-003		91.3400	91.3400	3.6800e-003		91.4321
Worker	0.0210	0.0155	0.1624	5.0000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		49.6926	49.6926	1.2900e-003		49.7249
Total	**0.0283**	**0.2360**	**0.2304**	**1.3600e-003**	**0.0834**	**8.6000e-004**	**0.0842**	**0.0227**	**8.1000e-004**	**0.0235**		**141.0327**	**141.0327**	**4.9700e-003**		**141.1569**

3.10 Installation of Metered Turnouts - 2023

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	lb/day										lb/day					
Off-Road	0.1514	1.5357	2.2313	3.1200e-003		0.0758	0.0758		0.0698	0.0698	0.0000	301.5765	301.5765	0.0975		304.0149
Total	**0.1514**	**1.5357**	**2.2313**	**3.1200e-003**		**0.0758**	**0.0758**		**0.0698**	**0.0698**	**0.0000**	**301.5765**	**301.5765**	**0.0975**		**304.0149**

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	lb/day										lb/day					
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
Vendor	7.2900e-003	0.2205	0.0680	8.6000e-004	0.0241	5.1000e-004	0.0246	6.9200e-003	4.9000e-004	7.4100e-003		91.3400	91.3400	3.6800e-003		91.4321
Worker	0.0210	0.0155	0.1624	5.0000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		49.6926	49.6926	1.2900e-003		49.7249
Total	**0.0283**	**0.2360**	**0.2304**	**1.3600e-003**	**0.0834**	**8.6000e-004**	**0.0842**	**0.0227**	**8.1000e-004**	**0.0235**		**141.0327**	**141.0327**	**4.9700e-003**		**141.1569**

3.11 Pavement Repairs - 2023

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	lb/day										lb/day					
Off-Road	0.3244	3.2130	4.4090	6.7000e-003		0.1665	0.1665		0.1532	0.1532		648.5747	648.5747	0.2098		653.8188
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3244**	**3.2130**	**4.4090**	**6.7000e-003**		**0.1665**	**0.1665**		**0.1532**	**0.1532**		**648.5747**	**648.5747**	**0.2098**		**653.8188**

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	lb/day										lb/day					
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
Vendor	0.0146	0.4410	0.1360	1.7100e-003	0.0481	1.0200e-003	0.0492	0.0139	9.7000e-004	0.0148		182.6801	182.6801	7.3600e-003		182.8642
Worker	0.0210	0.0155	0.1624	5.0000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		49.6926	49.6926	1.2900e-003		49.7249
Total	**0.0356**	**0.4565**	**0.2984**	**2.2100e-003**	**0.1075**	**1.3700e-003**	**0.1088**	**0.0296**	**1.2900e-003**	**0.0309**		**232.3727**	**232.3727**	**8.6500e-003**		**232.5890**

3.11 Pavement Repairs - 2023

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	lb/day										lb/day					
Off-Road	0.3244	3.2130	4.4090	6.7000e-003		0.1665	0.1665		0.1532	0.1532	0.0000	648.5747	648.5747	0.2098		653.8188
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3244**	**3.2130**	**4.4090**	**6.7000e-003**		**0.1665**	**0.1665**		**0.1532**	**0.1532**	**0.0000**	**648.5747**	**648.5747**	**0.2098**		**653.8188**

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	lb/day										lb/day					
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
Vendor	0.0146	0.4410	0.1360	1.7100e-003	0.0481	1.0200e-003	0.0492	0.0139	9.7000e-004	0.0148		182.6801	182.6801	7.3600e-003		182.8642
Worker	0.0210	0.0155	0.1624	5.0000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		49.6926	49.6926	1.2900e-003		49.7249
Total	**0.0356**	**0.4565**	**0.2984**	**2.2100e-003**	**0.1075**	**1.3700e-003**	**0.1088**	**0.0296**	**1.2900e-003**	**0.0309**		**232.3727**	**232.3727**	**8.6500e-003**		**232.5890**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	lb/day										lb/day					
Mitigated	7.7300e-003	0.0323	0.1036	3.5000e-004	0.0344	3.1000e-004	0.0347	9.1800e-003	2.9000e-004	9.4700e-003		35.7822	35.7822	1.2100e-003		35.8124
Unmitigated	7.7300e-003	0.0323	0.1036	3.5000e-004	0.0344	3.1000e-004	0.0347	9.1800e-003	2.9000e-004	9.4700e-003		35.7822	35.7822	1.2100e-003		35.8124

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Research & Development	4.00	4.00	4.00	16,235	16,235
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	4.00	4.00	4.00	16,235	16,235

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
Research & Development	13.00	13.00	13.00	33.00	48.00	19.00	82	15	3
Unrefrigerated Warehouse-No	13.00	13.00	13.00	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Research & Development	0.582546	0.028575	0.198242	0.117308	0.024121	0.006096	0.012865	0.019735	0.002341	0.001188	0.004913	0.000770	0.001299
Unrefrigerated Warehouse-No Rail	0.582546	0.028575	0.198242	0.117308	0.024121	0.006096	0.012865	0.019735	0.002341	0.001188	0.004913	0.000770	0.001299

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	lb/day										lb/day					
NaturalGas Mitigated	0.0111	0.1011	0.0849	6.1000e-004		7.6800e-003	7.6800e-003		7.6800e-003	7.6800e-003		121.2635	121.2635	2.3200e-003	2.2200e-003	121.9841
NaturalGas Unmitigated	0.0111	0.1011	0.0849	6.1000e-004		7.6800e-003	7.6800e-003		7.6800e-003	7.6800e-003		121.2635	121.2635	2.3200e-003	2.2200e-003	121.9841

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	lb/day										lb/day					
Research & Development	114.356	1.2300e-003	0.0112	9.4200e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004		13.4537	13.4537	2.6000e-004	2.5000e-004	13.5336
Unrefrigerated Warehouse-No Rail	916.384	9.8800e-003	0.0898	0.0755	5.4000e-004		6.8300e-003	6.8300e-003		6.8300e-003	6.8300e-003		107.8098	107.8098	2.0700e-003	1.9800e-003	108.4505
Total		**0.0111**	**0.1011**	**0.0849**	**6.1000e-004**		**7.6800e-003**	**7.6800e-003**		**7.6800e-003**	**7.6800e-003**		**121.2635**	**121.2635**	**2.3300e-003**	**2.2300e-003**	**121.9841**

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	lb/day										lb/day					
Research & Development	0.114356	1.2300e-003	0.0112	9.4200e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004		13.4537	13.4537	2.6000e-004	2.5000e-004	13.5336
Unrefrigerated Warehouse-No Rail	0.916384	9.8800e-003	0.0898	0.0755	5.4000e-004		6.8300e-003	6.8300e-003		6.8300e-003	6.8300e-003		107.8098	107.8098	2.0700e-003	1.9800e-003	108.4505
Total		**0.0111**	**0.1011**	**0.0849**	**6.1000e-004**		**7.6800e-003**	**7.6800e-003**		**7.6800e-003**	**7.6800e-003**		**121.2635**	**121.2635**	**2.3300e-003**	**2.2300e-003**	**121.9841**

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	lb/day										lb/day					
Mitigated	0.5691	2.0000e-005	2.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Unmitigated	0.5691	2.0000e-005	2.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1302					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4387					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.9000e-004	2.0000e-005	2.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Total	**0.5691**	**2.0000e-005**	**2.0900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.4900e-003**	**4.4900e-003**	**1.0000e-005**		**4.7800e-003**

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	lb/day										lb/day					
Architectural Coating	0.1302					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4387					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.9000e-004	2.0000e-005	2.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Total	**0.5691**	**2.0000e-005**	**2.0900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.4900e-003**	**4.4900e-003**	**1.0000e-005**		**4.7800e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

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	1	100	500	0.73	CNG

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	lb/day										lb/day					
Emergency Generator - CNG (500 - 9999 HP)	4.3990	0.3388	11.4571	1.5300e-003		0.0243	0.0243		0.0243	0.0243		281.0547	281.0547	0.5877		295.7462
Total	**4.3990**	**0.3388**	**11.4571**	**1.5300e-003**		**0.0243**	**0.0243**		**0.0243**	**0.0243**		**281.0547**	**281.0547**	**0.5877**		**295.7462**

11.0 Vegetation

San Miguel WWTP Upgrade/Expansion Project

San Luis Obispo County APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	2.00	1000sqft	0.05	2,000.00	0
Unrefrigerated Warehouse-No Rail	18.50	1000sqft	0.42	18,500.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	3			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	206	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Based on project description. CO2 rate based on PGE 2020 Sustainability Report.

Land Use - Based on project description.

Construction Phase - Based on information from SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

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Off-road Equipment - Based on information provided by SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

Trips and VMT - Based on information provided by SMCSD.

On-road Fugitive Dust - CalEEMod defaults.

Grading - Based on information provided by SMCSD.

Vehicle Trips - 2 additional employees

Energy Use - CalEEMod defaults. Pump energy use added to warehouse.

Water And Wastewater - Based on information from SMCSD.

Solid Waste - CalEEMod defaults.

Construction Off-road Equipment Mitigation - In accordance with SLOCAPCD Rule 401.

Stationary Sources - Emergency Generators and Fire Pumps - Based on information provided by SMCSD.

Stationary Sources - Emergency Generators and Fire Pumps EF - CalEEMod defaults.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	100.00	5.00

tblConstructionPhase	NumDays	100.00	53.00
tblConstructionPhase	NumDays	100.00	22.00
tblConstructionPhase	NumDays	2.00	8.00
tblConstructionPhase	NumDays	2.00	8.00
tblConstructionPhase	NumDays	5.00	6.00
tblConstructionPhase	NumDays	1.00	88.00
tblConstructionPhase	NumDays	1.00	14.00
tblEnergyUse	LightingElect	3.22	0.00
tblEnergyUse	NT24E	5.13	0.00
tblEnergyUse	T24E	1.04	24.11
tblGrading	MaterialExported	0.00	11.00
tblGrading	MaterialImported	0.00	27.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	206
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	21.00
tblTripsAndVMT	HaulingTripLength	20.00	21.00
tblTripsAndVMT	HaulingTripNumber	1.00	2.00
tblTripsAndVMT	HaulingTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	3.00	2.00
tblTripsAndVMT	WorkerTripNumber	38.00	50.00

tblTripsAndVMT	WorkerTripNumber	5.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	50.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblTripsAndVMT	WorkerTripNumber	0.00	4.00
tblTripsAndVMT	WorkerTripNumber	3.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblTripsAndVMT	WorkerTripNumber	5.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblVehicleTrips	ST_TR	1.90	2.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.11	2.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	8.11	2.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	IndoorWaterUseRate	4,278,125.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2022	8.5258	88.8179	55.5807	0.1340	8.1312	3.7335	10.5437	3.6200	3.4617	5.8983	0.0000	12,971.9197	12,971.9197	3.6819	0.0000	13,063.9660
2023	0.6438	5.0789	6.8908	0.0127	0.1172	0.2318	0.3491	0.0322	0.2257	0.2579	0.0000	1,235.2107	1,235.2107	0.3049	0.0000	1,238.9267
Maximum	**8.5258**	**88.8179**	**55.5807**	**0.1340**	**8.1312**	**3.7335**	**10.5437**	**3.6200**	**3.4617**	**5.8983**	**0.0000**	**12,971.9197**	**12,971.9197**	**3.6819**	**0.0000**	**13,063.9660**

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	lb/day										lb/day					
2022	8.5258	88.8179	55.5807	0.1340	3.9442	3.7335	6.3566	1.7049	3.4617	3.9832	0.0000	12,971.9196	12,971.9196	3.6819	0.0000	13,063.9660
2023	0.6438	5.0789	6.8908	0.0127	0.1169	0.2318	0.3487	0.0321	0.2257	0.2578	0.0000	1,235.2107	1,235.2107	0.3049	0.0000	1,238.9267
Maximum	**8.5258**	**88.8179**	**55.5807**	**0.1340**	**3.9442**	**3.7335**	**6.3566**	**1.7049**	**3.4617**	**3.9832**	**0.0000**	**12,971.9196**	**12,971.9196**	**3.6819**	**0.0000**	**13,063.9660**

	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**	**50.77**	**0.00**	**38.44**	**52.44**	**0.00**	**31.11**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
Area	0.5691	2.0000e-005	2.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Energy	0.0111	0.1011	0.0849	6.1000e-004		7.6800e-003	7.6800e-003		7.6800e-003	7.6800e-003		121.2635	121.2635	2.3200e-003	2.2200e-003	121.9841
Mobile	7.4800e-003	0.0338	0.1027	3.4000e-004	0.0344	3.1000e-004	0.0347	9.1800e-003	2.9000e-004	9.4700e-003		34.4002	34.4002	1.2100e-003		34.4303
Stationary	4.3990	0.3388	11.4571	1.5300e-003		0.0243	0.0243		0.0243	0.0243		281.0547	281.0547	0.5877		295.7462
Total	**4.9867**	**0.4736**	**11.6468**	**2.4800e-003**	**0.0344**	**0.0323**	**0.0666**	**9.1800e-003**	**0.0323**	**0.0414**		**436.7229**	**436.7229**	**0.5912**	**2.2200e-003**	**452.1654**

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	lb/day										lb/day					
Area	0.5691	2.0000e-005	2.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Energy	0.0111	0.1011	0.0849	6.1000e-004		7.6800e-003	7.6800e-003		7.6800e-003	7.6800e-003		121.2635	121.2635	2.3200e-003	2.2200e-003	121.9841
Mobile	7.4800e-003	0.0338	0.1027	3.4000e-004	0.0344	3.1000e-004	0.0347	9.1800e-003	2.9000e-004	9.4700e-003		34.4002	34.4002	1.2100e-003		34.4303
Stationary	4.3990	0.3388	11.4571	1.5300e-003		0.0243	0.0243		0.0243	0.0243		281.0547	281.0547	0.5877		295.7462
Total	**4.9867**	**0.4736**	**11.6468**	**2.4800e-003**	**0.0344**	**0.0323**	**0.0666**	**9.1800e-003**	**0.0323**	**0.0414**		**436.7229**	**436.7229**	**0.5912**	**2.2200e-003**	**452.1654**

	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

San Miguel WWTP Upgrade/Expansion Project - San Luis Obispo County APCD Air District, Winter

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/3/2022	5/4/2022	5	88	
2	Trenching	Trenching	5/5/2022	8/4/2022	5	66	
3	Plant Installation	Building Construction	8/5/2022	12/22/2022	5	100	
4	Demobilization	Building Construction	12/23/2022	12/29/2022	5	5	
5	Pre-Construction Utility Locations & Potholing	Site Preparation	1/2/2023	1/19/2023	5	14	
6	Excavation of Bore/Receiving Pits	Grading	1/20/2023	1/31/2023	5	8	
7	Installation of Pipe	Building Construction	2/1/2023	4/14/2023	5	53	
8	Backfill	Grading	4/15/2023	4/26/2023	5	8	
9	Installation of Metered Turnouts	Building Construction	4/27/2023	5/26/2023	5	22	
10	Pavement Repairs	Paving	5/27/2023	6/5/2023	5	6	

Acres of Grading (Site Preparation Phase): 132

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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
Excavation of Bore/Receiving Pits	Concrete/Industrial Saws	0	8.00	81	0.73
Excavation of Bore/Receiving Pits	Rubber Tired Dozers	0	1.00	247	0.40
Excavation of Bore/Receiving Pits	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Installation of Pipe	Bore/Drill Rigs	1	8.00	221	0.50
Installation of Pipe	Cranes	0	4.00	231	0.29
Installation of Pipe	Forklifts	0	6.00	89	0.20

Installation of Pipe	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Backfill	Concrete/Industrial Saws	0	8.00	81	0.73
Backfill	Crushing/Proc. Equipment	1	8.00	85	0.78
Backfill	Rubber Tired Dozers	0	1.00	247	0.40
Backfill	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Installation of Metered Turnouts	Cranes	0	4.00	231	0.29
Installation of Metered Turnouts	Forklifts	0	6.00	89	0.20
Installation of Metered Turnouts	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pavement Repairs	Cement and Mortar Mixers	0	6.00	9	0.56
Pavement Repairs	Pavers	0	7.00	130	0.42
Pavement Repairs	Paving Equipment	1	8.00	132	0.36
Pavement Repairs	Rollers	1	8.00	80	0.38
Pavement Repairs	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Site Preparation	Forklifts	3	8.00	89	0.20
Site Preparation	Generator Sets	5	8.00	84	0.74
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rollers	1	8.00	80	0.38
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Loaders	1	8.00	203	0.36
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Trenchers	1	8.00	78	0.50
Pre-Construction Utility Locations & Potholing	Graders	0	8.00	187	0.41
Pre-Construction Utility Locations & Potholing	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Trenching	Pavers	1	8.00	130	0.42
Trenching	Rollers	1	8.00	80	0.38
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trenching	Trenchers	1	8.00	78	0.50
Plant Installation	Cranes	0	4.00	231	0.29
Plant Installation	Crushing/Proc. Equipment	1	8.00	85	0.78
Plant Installation	Forklifts	0	6.00	89	0.20
Plant Installation	Graders	3	8.00	187	0.41
Plant Installation	Pumps	1	8.00	84	0.74
Plant Installation	Rollers	3	8.00	80	0.38
Plant Installation	Rubber Tired Dozers	3	8.00	247	0.40
Plant Installation	Rubber Tired Loaders	2	8.00	203	0.36
Plant Installation	Scrapers	3	8.00	367	0.48
Plant Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Demobilization	Cranes	0	4.00	231	0.29
Demobilization	Forklifts	0	6.00	89	0.20
Demobilization	Tractors/Loaders/Backhoes	0	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
Excavation of Bore/Receiving Pits	1	6.00	2.00	2.00	13.00	13.00	21.00	LD_Mix	HDT_Mix	HHDT
Installation of Pipe	1	6.00	4.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Backfill	2	6.00	4.00	4.00	13.00	13.00	21.00	LD_Mix	HDT_Mix	HHDT
Installation of Metered Turnouts	1	6.00	2.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Pavement Repairs	2	6.00	4.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	15	50.00	2.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Pre-Construction Utility Locations & Pot	0	4.00	0.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	4	10.00	2.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Plant Installation	17	50.00	4.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Demobilization	0	20.00	4.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2022

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	lb/day										lb/day					
Fugitive Dust					7.6128	0.0000	7.6128	3.4820	0.0000	3.4820			0.0000			0.0000
Off-Road	5.0483	50.6069	41.7490	0.0832		2.4084	2.4084		2.2745	2.2745		7,985.8300	7,985.8300	1.7233		8,028.9118
Total	**5.0483**	**50.6069**	**41.7490**	**0.0832**	**7.6128**	**2.4084**	**10.0212**	**3.4820**	**2.2745**	**5.7565**		**7,985.8300**	**7,985.8300**	**1.7233**		**8,028.9118**

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	lb/day										lb/day					
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
Vendor	0.0101	0.2869	0.0830	8.6000e-004	0.0241	1.1100e-003	0.0252	6.9200e-003	1.0600e-003	7.9800e-003		91.7728	91.7728	4.1300e-003		91.8761
Worker	0.2139	0.1628	1.4316	4.1200e-003	0.4943	2.9700e-003	0.4973	0.1311	2.7400e-003	0.1338		410.1057	410.1057	0.0116		410.3951
Total	**0.2241**	**0.4497**	**1.5145**	**4.9800e-003**	**0.5184**	**4.0800e-003**	**0.5225**	**0.1380**	**3.8000e-003**	**0.1418**		**501.8786**	**501.8786**	**0.0157**		**502.2712**

3.2 Site Preparation - 2022

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	lb/day										lb/day					
Fugitive Dust					3.4258	0.0000	3.4258	1.5669	0.0000	1.5669			0.0000			0.0000
Off-Road	5.0483	50.6069	41.7490	0.0832		2.4084	2.4084		2.2745	2.2745	0.0000	7,985.8300	7,985.8300	1.7233		8,028.9118
Total	**5.0483**	**50.6069**	**41.7490**	**0.0832**	**3.4258**	**2.4084**	**5.8342**	**1.5669**	**2.2745**	**3.8414**	**0.0000**	**7,985.8300**	**7,985.8300**	**1.7233**		**8,028.9118**

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	lb/day										lb/day					
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
Vendor	0.0101	0.2869	0.0830	8.6000e-004	0.0241	1.1100e-003	0.0252	6.9200e-003	1.0600e-003	7.9800e-003		91.7728	91.7728	4.1300e-003		91.8761
Worker	0.2139	0.1628	1.4316	4.1200e-003	0.4943	2.9700e-003	0.4973	0.1311	2.7400e-003	0.1338		410.1057	410.1057	0.0116		410.3951
Total	**0.2241**	**0.4497**	**1.5145**	**4.9800e-003**	**0.5184**	**4.0800e-003**	**0.5225**	**0.1380**	**3.8000e-003**	**0.1418**		**501.8786**	**501.8786**	**0.0157**		**502.2712**

3.3 Trenching - 2022

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	lb/day										lb/day					
Off-Road	0.9017	8.8801	9.5812	0.0138		0.5288	0.5288		0.4865	0.4865		1,337.5501	1,337.5501	0.4326		1,348.3649
Total	**0.9017**	**8.8801**	**9.5812**	**0.0138**		**0.5288**	**0.5288**		**0.4865**	**0.4865**		**1,337.5501**	**1,337.5501**	**0.4326**		**1,348.3649**

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	lb/day										lb/day					
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
Vendor	0.0101	0.2869	0.0830	8.6000e-004	0.0241	1.1100e-003	0.0252	6.9200e-003	1.0600e-003	7.9800e-003		91.7728	91.7728	4.1300e-003		91.8761
Worker	0.0428	0.0326	0.2863	8.2000e-004	0.0989	5.9000e-004	0.0995	0.0262	5.5000e-004	0.0268		82.0212	82.0212	2.3200e-003		82.0790
Total	**0.0529**	**0.3195**	**0.3693**	**1.6800e-003**	**0.1229**	**1.7000e-003**	**0.1246**	**0.0331**	**1.6100e-003**	**0.0348**		**173.7940**	**173.7940**	**6.4500e-003**		**173.9551**

3.3 Trenching - 2022

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	lb/day										lb/day					
Off-Road	0.9017	8.8801	9.5812	0.0138		0.5288	0.5288		0.4865	0.4865	0.0000	1,337.5501	1,337.5501	0.4326		1,348.3649
Total	**0.9017**	**8.8801**	**9.5812**	**0.0138**		**0.5288**	**0.5288**		**0.4865**	**0.4865**	**0.0000**	**1,337.5501**	**1,337.5501**	**0.4326**		**1,348.3649**

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	lb/day										lb/day					
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
Vendor	0.0101	0.2869	0.0830	8.6000e-004	0.0241	1.1100e-003	0.0252	6.9200e-003	1.0600e-003	7.9800e-003		91.7728	91.7728	4.1300e-003		91.8761
Worker	0.0428	0.0326	0.2863	8.2000e-004	0.0989	5.9000e-004	0.0995	0.0262	5.5000e-004	0.0268		82.0212	82.0212	2.3200e-003		82.0790
Total	**0.0529**	**0.3195**	**0.3693**	**1.6800e-003**	**0.1229**	**1.7000e-003**	**0.1246**	**0.0331**	**1.6100e-003**	**0.0348**		**173.7940**	**173.7940**	**6.4500e-003**		**173.9551**

3.4 Plant Installation - 2022

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	lb/day										lb/day					
Off-Road	8.2917	88.0814	53.9831	0.1281		3.7283	3.7283		3.4569	3.4569		12,378.2683	12,378.2683	3.6620		12,469.8187
Total	**8.2917**	**88.0814**	**53.9831**	**0.1281**		**3.7283**	**3.7283**		**3.4569**	**3.4569**		**12,378.2683**	**12,378.2683**	**3.6620**		**12,469.8187**

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	lb/day										lb/day					
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
Vendor	0.0203	0.5738	0.1660	1.7200e-003	0.0481	2.2100e-003	0.0503	0.0138	2.1200e-003	0.0160		183.5456	183.5456	8.2600e-003		183.7522
Worker	0.2139	0.1628	1.4316	4.1200e-003	0.4943	2.9700e-003	0.4973	0.1311	2.7400e-003	0.1338		410.1057	410.1057	0.0116		410.3951
Total	**0.2342**	**0.7366**	**1.5975**	**5.8400e-003**	**0.5424**	**5.1800e-003**	**0.5476**	**0.1449**	**4.8600e-003**	**0.1498**		**593.6514**	**593.6514**	**0.0198**		**594.1473**

3.4 Plant Installation - 2022

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	lb/day										lb/day					
Off-Road	8.2917	88.0814	53.9831	0.1281		3.7283	3.7283		3.4569	3.4569	0.0000	12,378.2683	12,378.2683	3.6620		12,469.8187
Total	**8.2917**	**88.0814**	**53.9831**	**0.1281**		**3.7283**	**3.7283**		**3.4569**	**3.4569**	**0.0000**	**12,378.2683**	**12,378.2683**	**3.6620**		**12,469.8187**

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	lb/day										lb/day					
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
Vendor	0.0203	0.5738	0.1660	1.7200e-003	0.0481	2.2100e-003	0.0503	0.0138	2.1200e-003	0.0160		183.5456	183.5456	8.2600e-003		183.7522
Worker	0.2139	0.1628	1.4316	4.1200e-003	0.4943	2.9700e-003	0.4973	0.1311	2.7400e-003	0.1338		410.1057	410.1057	0.0116		410.3951
Total	**0.2342**	**0.7366**	**1.5975**	**5.8400e-003**	**0.5424**	**5.1800e-003**	**0.5476**	**0.1449**	**4.8600e-003**	**0.1498**		**593.6514**	**593.6514**	**0.0198**		**594.1473**

3.5 Demobilization - 2022

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	lb/day										lb/day					
Off-Road	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**

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	lb/day										lb/day					
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
Vendor	0.0203	0.5738	0.1660	1.7200e-003	0.0481	2.2100e-003	0.0503	0.0138	2.1200e-003	0.0160		183.5456	183.5456	8.2600e-003		183.7522
Worker	0.0856	0.0651	0.5726	1.6500e-003	0.1977	1.1900e-003	0.1989	0.0524	1.1000e-003	0.0535		164.0423	164.0423	4.6300e-003		164.1581
Total	**0.1058**	**0.6389**	**0.7386**	**3.3700e-003**	**0.2459**	**3.4000e-003**	**0.2493**	**0.0663**	**3.2200e-003**	**0.0695**		**347.5879**	**347.5879**	**0.0129**		**347.9103**

3.5 Demobilization - 2022

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	lb/day										lb/day					
Off-Road	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**

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	lb/day										lb/day					
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
Vendor	0.0203	0.5738	0.1660	1.7200e-003	0.0481	2.2100e-003	0.0503	0.0138	2.1200e-003	0.0160		183.5456	183.5456	8.2600e-003		183.7522
Worker	0.0856	0.0651	0.5726	1.6500e-003	0.1977	1.1900e-003	0.1989	0.0524	1.1000e-003	0.0535		164.0423	164.0423	4.6300e-003		164.1581
Total	**0.1058**	**0.6389**	**0.7386**	**3.3700e-003**	**0.2459**	**3.4000e-003**	**0.2493**	**0.0663**	**3.2200e-003**	**0.0695**		**347.5879**	**347.5879**	**0.0129**		**347.9103**

3.6 Pre-Construction Utility Locations & Potholing - 2023

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	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	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**

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	lb/day										lb/day					
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
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
Worker	0.0161	0.0117	0.1045	3.2000e-004	0.0395	2.3000e-004	0.0398	0.0105	2.1000e-004	0.0107		31.5781	31.5781	8.3000e-004		31.5987
Total	**0.0161**	**0.0117**	**0.1045**	**3.2000e-004**	**0.0395**	**2.3000e-004**	**0.0398**	**0.0105**	**2.1000e-004**	**0.0107**		**31.5781**	**31.5781**	**8.3000e-004**		**31.5987**

3.6 Pre-Construction Utility Locations & Potholing - 2023

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	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	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**		**0.0000**

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	lb/day										lb/day					
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
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
Worker	0.0161	0.0117	0.1045	3.2000e-004	0.0395	2.3000e-004	0.0398	0.0105	2.1000e-004	0.0107		31.5781	31.5781	8.3000e-004		31.5987
Total	**0.0161**	**0.0117**	**0.1045**	**3.2000e-004**	**0.0395**	**2.3000e-004**	**0.0398**	**0.0105**	**2.1000e-004**	**0.0107**		**31.5781**	**31.5781**	**8.3000e-004**		**31.5987**

3.7 Excavation of Bore/Receiving Pits - 2023

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	lb/day										lb/day					
Fugitive Dust					2.5000e-004	0.0000	2.5000e-004	4.0000e-005	0.0000	4.0000e-005			0.0000			0.0000
Off-Road	0.1514	1.5357	2.2313	3.1200e-003		0.0758	0.0758		0.0698	0.0698		301.5765	301.5765	0.0975		304.0149
Total	**0.1514**	**1.5357**	**2.2313**	**3.1200e-003**	**2.5000e-004**	**0.0758**	**0.0761**	**4.0000e-005**	**0.0698**	**0.0698**		**301.5765**	**301.5765**	**0.0975**		**304.0149**

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	lb/day										lb/day					
Hauling	1.4200e-003	0.0495	0.0153	1.9000e-004	4.5900e-003	1.3000e-004	4.7200e-003	1.2600e-003	1.3000e-004	1.3800e-003		20.8536	20.8536	1.2400e-003		20.8845
Vendor	7.6500e-003	0.2213	0.0728	8.4000e-004	0.0241	5.2000e-004	0.0246	6.9200e-003	5.0000e-004	7.4200e-003		90.0149	90.0149	3.8200e-003		90.1103
Worker	0.0242	0.0176	0.1567	4.8000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		47.3671	47.3671	1.2400e-003		47.3981
Total	**0.0332**	**0.2883**	**0.2449**	**1.5100e-003**	**0.0880**	**1.0000e-003**	**0.0890**	**0.0239**	**9.5000e-004**	**0.0249**		**158.2356**	**158.2356**	**6.3000e-003**		**158.3929**

3.7 Excavation of Bore/Receiving Pits - 2023

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	lb/day										lb/day					
Fugitive Dust					1.1000e-004	0.0000	1.1000e-004	2.0000e-005	0.0000	2.0000e-005			0.0000			0.0000
Off-Road	0.1514	1.5357	2.2313	3.1200e-003		0.0758	0.0758		0.0698	0.0698	0.0000	301.5765	301.5765	0.0975		304.0149
Total	**0.1514**	**1.5357**	**2.2313**	**3.1200e-003**	**1.1000e-004**	**0.0758**	**0.0759**	**2.0000e-005**	**0.0698**	**0.0698**	**0.0000**	**301.5765**	**301.5765**	**0.0975**		**304.0149**

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	lb/day										lb/day					
Hauling	1.4200e-003	0.0495	0.0153	1.9000e-004	4.5900e-003	1.3000e-004	4.7200e-003	1.2600e-003	1.3000e-004	1.3800e-003		20.8536	20.8536	1.2400e-003		20.8845
Vendor	7.6500e-003	0.2213	0.0728	8.4000e-004	0.0241	5.2000e-004	0.0246	6.9200e-003	5.0000e-004	7.4200e-003		90.0149	90.0149	3.8200e-003		90.1103
Worker	0.0242	0.0176	0.1567	4.8000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		47.3671	47.3671	1.2400e-003		47.3981
Total	**0.0332**	**0.2883**	**0.2449**	**1.5100e-003**	**0.0880**	**1.0000e-003**	**0.0890**	**0.0239**	**9.5000e-004**	**0.0249**		**158.2356**	**158.2356**	**6.3000e-003**		**158.3929**

3.8 Installation of Pipe - 2023

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	lb/day										lb/day					
Off-Road	0.2151	2.0396	2.0329	9.4600e-003		0.0660	0.0660		0.0608	0.0608		915.4033	915.4033	0.2961		922.8048
Total	**0.2151**	**2.0396**	**2.0329**	**9.4600e-003**		**0.0660**	**0.0660**		**0.0608**	**0.0608**		**915.4033**	**915.4033**	**0.2961**		**922.8048**

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	lb/day										lb/day					
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
Vendor	0.0153	0.4425	0.1456	1.6900e-003	0.0481	1.0400e-003	0.0492	0.0139	1.0000e-003	0.0148		180.0298	180.0298	7.6300e-003		180.2206
Worker	0.0242	0.0176	0.1567	4.8000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		47.3671	47.3671	1.2400e-003		47.3981
Total	**0.0395**	**0.4601**	**0.3023**	**2.1700e-003**	**0.1075**	**1.3900e-003**	**0.1088**	**0.0296**	**1.3200e-003**	**0.0309**		**227.3968**	**227.3968**	**8.8700e-003**		**227.6187**

3.8 Installation of Pipe - 2023

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	lb/day										lb/day					
Off-Road	0.2151	2.0396	2.0329	9.4600e-003		0.0660	0.0660		0.0608	0.0608	0.0000	915.4033	915.4033	0.2961		922.8048
Total	**0.2151**	**2.0396**	**2.0329**	**9.4600e-003**		**0.0660**	**0.0660**		**0.0608**	**0.0608**	**0.0000**	**915.4033**	**915.4033**	**0.2961**		**922.8048**

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	lb/day										lb/day					
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
Vendor	0.0153	0.4425	0.1456	1.6900e-003	0.0481	1.0400e-003	0.0492	0.0139	1.0000e-003	0.0148		180.0298	180.0298	7.6300e-003		180.2206
Worker	0.0242	0.0176	0.1567	4.8000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		47.3671	47.3671	1.2400e-003		47.3981
Total	**0.0395**	**0.4601**	**0.3023**	**2.1700e-003**	**0.1075**	**1.3900e-003**	**0.1088**	**0.0296**	**1.3200e-003**	**0.0309**		**227.3968**	**227.3968**	**8.8700e-003**		**227.6187**

3.9 Backfill - 2023

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	lb/day										lb/day					
Fugitive Dust					6.2000e-004	0.0000	6.2000e-004	9.0000e-005	0.0000	9.0000e-005			0.0000			0.0000
Off-Road	0.6016	4.5198	6.5579	0.0101		0.2302	0.2302		0.2241	0.2241		966.1066	966.1066	0.1373		969.5389
Total	**0.6016**	**4.5198**	**6.5579**	**0.0101**	**6.2000e-004**	**0.2302**	**0.2308**	**9.0000e-005**	**0.2241**	**0.2242**		**966.1066**	**966.1066**	**0.1373**		**969.5389**

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	lb/day										lb/day					
Hauling	2.8300e-003	0.0990	0.0307	3.8000e-004	9.1700e-003	2.7000e-004	9.4400e-003	2.5100e-003	2.6000e-004	2.7700e-003		41.7072	41.7072	2.4700e-003		41.7691
Vendor	0.0153	0.4425	0.1456	1.6900e-003	0.0481	1.0400e-003	0.0492	0.0139	1.0000e-003	0.0148		180.0298	180.0298	7.6300e-003		180.2206
Worker	0.0242	0.0176	0.1567	4.8000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		47.3671	47.3671	1.2400e-003		47.3981
Total	**0.0423**	**0.5590**	**0.3330**	**2.5500e-003**	**0.1166**	**1.6600e-003**	**0.1183**	**0.0321**	**1.5800e-003**	**0.0337**		**269.1041**	**269.1041**	**0.0113**		**269.3877**

3.9 Backfill - 2023

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	lb/day										lb/day					
Fugitive Dust					2.8000e-004	0.0000	2.8000e-004	4.0000e-005	0.0000	4.0000e-005			0.0000			0.0000
Off-Road	0.6016	4.5198	6.5579	0.0101		0.2302	0.2302		0.2241	0.2241	0.0000	966.1066	966.1066	0.1373		969.5389
Total	**0.6016**	**4.5198**	**6.5579**	**0.0101**	**2.8000e-004**	**0.2302**	**0.2304**	**4.0000e-005**	**0.2241**	**0.2241**	**0.0000**	**966.1066**	**966.1066**	**0.1373**		**969.5389**

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	lb/day										lb/day					
Hauling	2.8300e-003	0.0990	0.0307	3.8000e-004	9.1700e-003	2.7000e-004	9.4400e-003	2.5100e-003	2.6000e-004	2.7700e-003		41.7072	41.7072	2.4700e-003		41.7691
Vendor	0.0153	0.4425	0.1456	1.6900e-003	0.0481	1.0400e-003	0.0492	0.0139	1.0000e-003	0.0148		180.0298	180.0298	7.6300e-003		180.2206
Worker	0.0242	0.0176	0.1567	4.8000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		47.3671	47.3671	1.2400e-003		47.3981
Total	**0.0423**	**0.5590**	**0.3330**	**2.5500e-003**	**0.1166**	**1.6600e-003**	**0.1183**	**0.0321**	**1.5800e-003**	**0.0337**		**269.1041**	**269.1041**	**0.0113**		**269.3877**

3.10 Installation of Metered Turnouts - 2023

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	lb/day										lb/day					
Off-Road	0.1514	1.5357	2.2313	3.1200e-003		0.0758	0.0758		0.0698	0.0698		301.5765	301.5765	0.0975		304.0149
Total	**0.1514**	**1.5357**	**2.2313**	**3.1200e-003**		**0.0758**	**0.0758**		**0.0698**	**0.0698**		**301.5765**	**301.5765**	**0.0975**		**304.0149**

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	lb/day										lb/day					
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
Vendor	7.6500e-003	0.2213	0.0728	8.4000e-004	0.0241	5.2000e-004	0.0246	6.9200e-003	5.0000e-004	7.4200e-003		90.0149	90.0149	3.8200e-003		90.1103
Worker	0.0242	0.0176	0.1567	4.8000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		47.3671	47.3671	1.2400e-003		47.3981
Total	**0.0318**	**0.2388**	**0.2295**	**1.3200e-003**	**0.0834**	**8.7000e-004**	**0.0843**	**0.0227**	**8.2000e-004**	**0.0235**		**137.3820**	**137.3820**	**5.0600e-003**		**137.5084**

3.10 Installation of Metered Turnouts - 2023

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	lb/day										lb/day					
Off-Road	0.1514	1.5357	2.2313	3.1200e-003		0.0758	0.0758		0.0698	0.0698	0.0000	301.5765	301.5765	0.0975		304.0149
Total	**0.1514**	**1.5357**	**2.2313**	**3.1200e-003**		**0.0758**	**0.0758**		**0.0698**	**0.0698**	**0.0000**	**301.5765**	**301.5765**	**0.0975**		**304.0149**

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	lb/day										lb/day					
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
Vendor	7.6500e-003	0.2213	0.0728	8.4000e-004	0.0241	5.2000e-004	0.0246	6.9200e-003	5.0000e-004	7.4200e-003		90.0149	90.0149	3.8200e-003		90.1103
Worker	0.0242	0.0176	0.1567	4.8000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		47.3671	47.3671	1.2400e-003		47.3981
Total	**0.0318**	**0.2388**	**0.2295**	**1.3200e-003**	**0.0834**	**8.7000e-004**	**0.0843**	**0.0227**	**8.2000e-004**	**0.0235**		**137.3820**	**137.3820**	**5.0600e-003**		**137.5084**

3.11 Pavement Repairs - 2023

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	lb/day										lb/day					
Off-Road	0.3244	3.2130	4.4090	6.7000e-003		0.1665	0.1665		0.1532	0.1532		648.5747	648.5747	0.2098		653.8188
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3244**	**3.2130**	**4.4090**	**6.7000e-003**		**0.1665**	**0.1665**		**0.1532**	**0.1532**		**648.5747**	**648.5747**	**0.2098**		**653.8188**

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	lb/day										lb/day					
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
Vendor	0.0153	0.4425	0.1456	1.6900e-003	0.0481	1.0400e-003	0.0492	0.0139	1.0000e-003	0.0148		180.0298	180.0298	7.6300e-003		180.2206
Worker	0.0242	0.0176	0.1567	4.8000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		47.3671	47.3671	1.2400e-003		47.3981
Total	**0.0395**	**0.4601**	**0.3023**	**2.1700e-003**	**0.1075**	**1.3900e-003**	**0.1088**	**0.0296**	**1.3200e-003**	**0.0309**		**227.3968**	**227.3968**	**8.8700e-003**		**227.6187**

3.11 Pavement Repairs - 2023

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	lb/day										lb/day					
Off-Road	0.3244	3.2130	4.4090	6.7000e-003		0.1665	0.1665		0.1532	0.1532	0.0000	648.5747	648.5747	0.2098		653.8188
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3244**	**3.2130**	**4.4090**	**6.7000e-003**		**0.1665**	**0.1665**		**0.1532**	**0.1532**	**0.0000**	**648.5747**	**648.5747**	**0.2098**		**653.8188**

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	lb/day										lb/day					
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
Vendor	0.0153	0.4425	0.1456	1.6900e-003	0.0481	1.0400e-003	0.0492	0.0139	1.0000e-003	0.0148		180.0298	180.0298	7.6300e-003		180.2206
Worker	0.0242	0.0176	0.1567	4.8000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		47.3671	47.3671	1.2400e-003		47.3981
Total	**0.0395**	**0.4601**	**0.3023**	**2.1700e-003**	**0.1075**	**1.3900e-003**	**0.1088**	**0.0296**	**1.3200e-003**	**0.0309**		**227.3968**	**227.3968**	**8.8700e-003**		**227.6187**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	lb/day										lb/day					
Mitigated	7.4800e-003	0.0338	0.1027	3.4000e-004	0.0344	3.1000e-004	0.0347	9.1800e-003	2.9000e-004	9.4700e-003		34.4002	34.4002	1.2100e-003		34.4303
Unmitigated	7.4800e-003	0.0338	0.1027	3.4000e-004	0.0344	3.1000e-004	0.0347	9.1800e-003	2.9000e-004	9.4700e-003		34.4002	34.4002	1.2100e-003		34.4303

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Research & Development	4.00	4.00	4.00	16,235	16,235
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	4.00	4.00	4.00	16,235	16,235

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
Research & Development	13.00	13.00	13.00	33.00	48.00	19.00	82	15	3
Unrefrigerated Warehouse-No	13.00	13.00	13.00	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Research & Development	0.582546	0.028575	0.198242	0.117308	0.024121	0.006096	0.012865	0.019735	0.002341	0.001188	0.004913	0.000770	0.001299
Unrefrigerated Warehouse-No Rail	0.582546	0.028575	0.198242	0.117308	0.024121	0.006096	0.012865	0.019735	0.002341	0.001188	0.004913	0.000770	0.001299

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	lb/day										lb/day					
NaturalGas Mitigated	0.0111	0.1011	0.0849	6.1000e-004		7.6800e-003	7.6800e-003		7.6800e-003	7.6800e-003		121.2635	121.2635	2.3200e-003	2.2200e-003	121.9841
NaturalGas Unmitigated	0.0111	0.1011	0.0849	6.1000e-004		7.6800e-003	7.6800e-003		7.6800e-003	7.6800e-003		121.2635	121.2635	2.3200e-003	2.2200e-003	121.9841

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	lb/day										lb/day					
Research & Development	114.356	1.2300e-003	0.0112	9.4200e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004		13.4537	13.4537	2.6000e-004	2.5000e-004	13.5336
Unrefrigerated Warehouse-No Rail	916.384	9.8800e-003	0.0898	0.0755	5.4000e-004		6.8300e-003	6.8300e-003		6.8300e-003	6.8300e-003		107.8098	107.8098	2.0700e-003	1.9800e-003	108.4505
Total		**0.0111**	**0.1011**	**0.0849**	**6.1000e-004**		**7.6800e-003**	**7.6800e-003**		**7.6800e-003**	**7.6800e-003**		**121.2635**	**121.2635**	**2.3300e-003**	**2.2300e-003**	**121.9841**

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	lb/day										lb/day					
Research & Development	0.114356	1.2300e-003	0.0112	9.4200e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004		13.4537	13.4537	2.6000e-004	2.5000e-004	13.5336
Unrefrigerated Warehouse-No Rail	0.916384	9.8800e-003	0.0898	0.0755	5.4000e-004		6.8300e-003	6.8300e-003		6.8300e-003	6.8300e-003		107.8098	107.8098	2.0700e-003	1.9800e-003	108.4505
Total		**0.0111**	**0.1011**	**0.0849**	**6.1000e-004**		**7.6800e-003**	**7.6800e-003**		**7.6800e-003**	**7.6800e-003**		**121.2635**	**121.2635**	**2.3300e-003**	**2.2300e-003**	**121.9841**

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	lb/day										lb/day					
Mitigated	0.5691	2.0000e-005	2.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Unmitigated	0.5691	2.0000e-005	2.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1302					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4387					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.9000e-004	2.0000e-005	2.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Total	**0.5691**	**2.0000e-005**	**2.0900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.4900e-003**	**4.4900e-003**	**1.0000e-005**		**4.7800e-003**

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	lb/day										lb/day					
Architectural Coating	0.1302					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4387					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.9000e-004	2.0000e-005	2.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Total	**0.5691**	**2.0000e-005**	**2.0900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.4900e-003**	**4.4900e-003**	**1.0000e-005**		**4.7800e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

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	1	100	500	0.73	CNG

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	lb/day										lb/day					
Emergency Generator - CNG (500 - 9999 HP)	4.3990	0.3388	11.4571	1.5300e-003		0.0243	0.0243		0.0243	0.0243		281.0547	281.0547	0.5877		295.7462
Total	**4.3990**	**0.3388**	**11.4571**	**1.5300e-003**		**0.0243**	**0.0243**		**0.0243**	**0.0243**		**281.0547**	**281.0547**	**0.5877**		**295.7462**

11.0 Vegetation

San Miguel WWTP Upgrade/Expansion Project BACT

San Luis Obispo County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	2.00	1000sqft	0.05	2,000.00	0
Unrefrigerated Warehouse-No Rail	18.50	1000sqft	0.42	18,500.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	3			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	206	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Based on project description. CO2 rate based on PGE 2020 Sustainability Report.

Land Use - Based on project description.

Construction Phase - Based on information from SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

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Off-road Equipment - Based on information provided by SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

Trips and VMT - Based on information provided by SMCSD.

On-road Fugitive Dust - CalEEMod defaults.

Grading - Based on information provided by SMCSD.

Vehicle Trips - 2 additional employees

Energy Use - CalEEMod defaults. Pump energy use added to warehouse.

Water And Wastewater - Based on information from SMCSD.

Solid Waste - CalEEMod defaults.

Construction Off-road Equipment Mitigation - In accordance with SLOCAPCD Rule 401.

Stationary Sources - Emergency Generators and Fire Pumps - Based on information provided by SMCSD.

Stationary Sources - Emergency Generators and Fire Pumps EF - CalEEMod defaults.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 3
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tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
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tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3

San Miguel WWTP Upgrade/Expansion Project BACT - San Luis Obispo County APCD Air District, Annual

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
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tblConstructionPhase	NumDays	100.00	53.00
tblConstructionPhase	NumDays	100.00	22.00
tblConstructionPhase	NumDays	2.00	8.00
tblConstructionPhase	NumDays	2.00	8.00
tblConstructionPhase	NumDays	5.00	6.00
tblConstructionPhase	NumDays	1.00	88.00
tblConstructionPhase	NumDays	1.00	14.00
tblEnergyUse	LightingElect	3.22	0.00
tblEnergyUse	NT24E	5.13	0.00
tblEnergyUse	T24E	1.04	24.11
tblGrading	MaterialExported	0.00	11.00
tblGrading	MaterialImported	0.00	27.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
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tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	206
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	21.00
tblTripsAndVMT	HaulingTripLength	20.00	21.00
tblTripsAndVMT	HaulingTripNumber	1.00	2.00
tblTripsAndVMT	HaulingTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00

tblTripsAndVMT	VendorTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	3.00	2.00
tblTripsAndVMT	WorkerTripNumber	38.00	50.00
tblTripsAndVMT	WorkerTripNumber	5.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	50.00
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tblTripsAndVMT	WorkerTripNumber	0.00	4.00
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tblTripsAndVMT	WorkerTripNumber	5.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblVehicleTrips	ST_TR	1.90	2.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.11	2.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	8.11	2.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	IndoorWaterUseRate	4,278,125.00	0.00

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					
2022	0.6877	6.9929	5.0119	0.0111	0.3882	0.3103	0.6985	0.1674	0.2894	0.4569	0.0000	973.6612	973.6612	0.2496	0.0000	979.9007
2023	0.0131	0.1247	0.1411	4.6000e-004	5.0600e-003	4.3700e-003	9.4300e-003	1.3900e-003	4.0700e-003	5.4600e-003	0.0000	40.6669	40.6669	9.8700e-003	0.0000	40.9135
Maximum	**0.6877**	**6.9929**	**5.0119**	**0.0111**	**0.3882**	**0.3103**	**0.6985**	**0.1674**	**0.2894**	**0.4569**	**0.0000**	**973.6612**	**973.6612**	**0.2496**	**0.0000**	**979.9007**

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					
2022	0.2698	5.1483	6.2965	0.0111	0.2039	0.2513	0.4552	0.0832	0.2512	0.3344	0.0000	973.6601	973.6601	0.2496	0.0000	979.8996
2023	0.0105	0.1957	0.2256	4.6000e-004	5.0600e-003	8.4000e-003	0.0135	1.3900e-003	8.4000e-003	9.7900e-003	0.0000	40.6668	40.6668	9.8700e-003	0.0000	40.9135
Maximum	**0.2698**	**5.1483**	**6.2965**	**0.0111**	**0.2039**	**0.2513**	**0.4552**	**0.0832**	**0.2512**	**0.3344**	**0.0000**	**973.6601**	**973.6601**	**0.2496**	**0.0000**	**979.8996**

	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	**60.01**	**24.92**	**-26.57**	**0.00**	**46.85**	**17.49**	**33.80**	**49.91**	**11.55**	**25.55**	**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	1-3-2022	4-2-2022	1.8105	1.3703
2	4-3-2022	7-2-2022	0.8569	0.6557
3	7-3-2022	10-2-2022	2.1697	1.4747
4	10-3-2022	1-2-2023	2.8179	1.8981
5	1-3-2023	4-2-2023	0.0688	0.1238
6	4-3-2023	7-2-2023	0.0716	0.0839
		Highest	2.8179	1.8981

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	0.1039	0.0000	3.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.7000e-004	6.7000e-004	0.0000	0.0000	7.2000e-004
Energy	2.0300e-003	0.0184	0.0155	1.1000e-004		1.4000e-003	1.4000e-003		1.4000e-003	1.4000e-003	0.0000	63.4023	63.4023	6.4800e-003	1.6300e-003	64.0502
Mobile	1.3400e-003	6.1400e-003	0.0185	6.0000e-005	6.0900e-003	6.0000e-005	6.1500e-003	1.6300e-003	5.0000e-005	1.6800e-003	0.0000	5.7180	5.7180	2.0000e-004	0.0000	5.7229
Stationary	0.2200	0.0169	0.5729	8.0000e-005		1.2100e-003	1.2100e-003		1.2100e-003	1.2100e-003	0.0000	12.7484	12.7484	0.0267	0.0000	13.4148
Waste						0.0000	0.0000		0.0000	0.0000	3.5605	0.0000	3.5605	0.2104	0.0000	8.8209
Water						0.0000	0.0000		0.0000	0.0000	0.3120	0.4972	0.8092	0.0321	7.7000e-004	1.8418
Total	**0.3272**	**0.0415**	**0.6072**	**2.5000e-004**	**6.0900e-003**	**2.6700e-003**	**8.7600e-003**	**1.6300e-003**	**2.6600e-003**	**4.2900e-003**	**3.8724**	**82.3666**	**86.2390**	**0.2759**	**2.4000e-003**	**93.8513**

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	0.1039	0.0000	3.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.7000e-004	6.7000e-004	0.0000	0.0000	7.2000e-004
Energy	2.0300e-003	0.0184	0.0155	1.1000e-004		1.4000e-003	1.4000e-003		1.4000e-003	1.4000e-003	0.0000	63.4023	63.4023	6.4800e-003	1.6300e-003	64.0502
Mobile	1.3400e-003	6.1400e-003	0.0185	6.0000e-005	6.0900e-003	6.0000e-005	6.1500e-003	1.6300e-003	5.0000e-005	1.6800e-003	0.0000	5.7180	5.7180	2.0000e-004	0.0000	5.7229
Stationary	0.2200	0.0169	0.5729	8.0000e-005		1.2100e-003	1.2100e-003		1.2100e-003	1.2100e-003	0.0000	12.7484	12.7484	0.0267	0.0000	13.4148
Waste						0.0000	0.0000		0.0000	0.0000	3.5605	0.0000	3.5605	0.2104	0.0000	8.8209
Water						0.0000	0.0000		0.0000	0.0000	0.3120	0.4972	0.8092	0.0321	7.7000e-004	1.8418
Total	**0.3272**	**0.0415**	**0.6072**	**2.5000e-004**	**6.0900e-003**	**2.6700e-003**	**8.7600e-003**	**1.6300e-003**	**2.6600e-003**	**4.2900e-003**	**3.8724**	**82.3666**	**86.2390**	**0.2759**	**2.4000e-003**	**93.8513**

	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

San Miguel WWTP Upgrade/Expansion Project BACT - San Luis Obispo County APCD Air District, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/3/2022	5/4/2022	5	88	
2	Trenching	Trenching	5/5/2022	8/4/2022	5	66	
3	Plant Installation	Building Construction	8/5/2022	12/22/2022	5	100	
4	Demobilization	Building Construction	12/23/2022	12/29/2022	5	5	
5	Pre-Construction Utility Locations & Potholing	Site Preparation	1/2/2023	1/19/2023	5	14	
6	Excavation of Bore/Receiving Pits	Grading	1/20/2023	1/31/2023	5	8	
7	Installation of Pipe	Building Construction	2/1/2023	4/14/2023	5	53	
8	Backfill	Grading	4/15/2023	4/26/2023	5	8	
9	Installation of Metered Turnouts	Building Construction	4/27/2023	5/26/2023	5	22	
10	Pavement Repairs	Paving	5/27/2023	6/5/2023	5	6	

Acres of Grading (Site Preparation Phase): 132

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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
Excavation of Bore/Receiving Pits	Concrete/Industrial Saws	0	8.00	81	0.73
Excavation of Bore/Receiving Pits	Rubber Tired Dozers	0	1.00	247	0.40
Excavation of Bore/Receiving Pits	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Installation of Pipe	Bore/Drill Rigs	1	8.00	221	0.50
Installation of Pipe	Cranes	0	4.00	231	0.29
Installation of Pipe	Forklifts	0	6.00	89	0.20

Installation of Pipe	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Backfill	Concrete/Industrial Saws	0	8.00	81	0.73
Backfill	Crushing/Proc. Equipment	1	8.00	85	0.78
Backfill	Rubber Tired Dozers	0	1.00	247	0.40
Backfill	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Installation of Metered Turnouts	Cranes	0	4.00	231	0.29
Installation of Metered Turnouts	Forklifts	0	6.00	89	0.20
Installation of Metered Turnouts	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pavement Repairs	Cement and Mortar Mixers	0	6.00	9	0.56
Pavement Repairs	Pavers	0	7.00	130	0.42
Pavement Repairs	Paving Equipment	1	8.00	132	0.36
Pavement Repairs	Rollers	1	8.00	80	0.38
Pavement Repairs	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Site Preparation	Forklifts	3	8.00	89	0.20
Site Preparation	Generator Sets	5	8.00	84	0.74
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rollers	1	8.00	80	0.38
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Loaders	1	8.00	203	0.36
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Trenchers	1	8.00	78	0.50
Pre-Construction Utility Locations & Potholing	Graders	0	8.00	187	0.41
Pre-Construction Utility Locations & Potholing	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Trenching	Pavers	1	8.00	130	0.42
Trenching	Rollers	1	8.00	80	0.38
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trenching	Trenchers	1	8.00	78	0.50
Plant Installation	Cranes	0	4.00	231	0.29
Plant Installation	Crushing/Proc. Equipment	1	8.00	85	0.78
Plant Installation	Forklifts	0	6.00	89	0.20
Plant Installation	Graders	3	8.00	187	0.41
Plant Installation	Pumps	1	8.00	84	0.74
Plant Installation	Rollers	3	8.00	80	0.38
Plant Installation	Rubber Tired Dozers	3	8.00	247	0.40
Plant Installation	Rubber Tired Loaders	2	8.00	203	0.36
Plant Installation	Scrapers	3	8.00	367	0.48
Plant Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Demobilization	Cranes	0	4.00	231	0.29
Demobilization	Forklifts	0	6.00	89	0.20
Demobilization	Tractors/Loaders/Backhoes	0	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
Excavation of Bore/Receiving Pits	1	6.00	2.00	2.00	13.00	13.00	21.00	LD_Mix	HDT_Mix	HHDT
Installation of Pipe	1	6.00	4.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Backfill	2	6.00	4.00	4.00	13.00	13.00	21.00	LD_Mix	HDT_Mix	HHDT
Installation of Metered Turnouts	1	6.00	2.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Pavement Repairs	2	6.00	4.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	15	50.00	2.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Pre-Construction Utility Locations & Pot	0	4.00	0.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	4	10.00	2.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Plant Installation	17	50.00	4.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Demobilization	0	20.00	4.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2022

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					0.3350	0.0000	0.3350	0.1532	0.0000	0.1532	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2221	2.2267	1.8370	3.6600e-003		0.1060	0.1060		0.1001	0.1001	0.0000	318.7634	318.7634	0.0688	0.0000	320.4831
Total	**0.2221**	**2.2267**	**1.8370**	**3.6600e-003**	**0.3350**	**0.1060**	**0.4409**	**0.1532**	**0.1001**	**0.2533**	**0.0000**	**318.7634**	**318.7634**	**0.0688**	**0.0000**	**320.4831**

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	4.3000e-004	0.0128	3.5200e-003	4.0000e-005	1.0400e-003	5.0000e-005	1.0800e-003	3.0000e-004	5.0000e-005	3.4000e-004	0.0000	3.6938	3.6938	1.6000e-004	0.0000	3.6978
Worker	8.4200e-003	7.0300e-003	0.0628	1.8000e-004	0.0212	1.3000e-004	0.0213	5.6300e-003	1.2000e-004	5.7500e-003	0.0000	16.5033	16.5033	4.6000e-004	0.0000	16.5149
Total	**8.8500e-003**	**0.0198**	**0.0664**	**2.2000e-004**	**0.0222**	**1.8000e-004**	**0.0224**	**5.9300e-003**	**1.7000e-004**	**6.0900e-003**	**0.0000**	**20.1971**	**20.1971**	**6.2000e-004**	**0.0000**	**20.2128**

3.2 Site Preparation - 2022

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					0.1507	0.0000	0.1507	0.0689	0.0000	0.0689	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0833	1.7629	2.2050	3.6600e-003		0.0990	0.0990		0.0990	0.0990	0.0000	318.7630	318.7630	0.0688	0.0000	320.4827
Total	**0.0833**	**1.7629**	**2.2050**	**3.6600e-003**	**0.1507**	**0.0990**	**0.2497**	**0.0689**	**0.0990**	**0.1679**	**0.0000**	**318.7630**	**318.7630**	**0.0688**	**0.0000**	**320.4827**

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	4.3000e-004	0.0128	3.5200e-003	4.0000e-005	1.0400e-003	5.0000e-005	1.0800e-003	3.0000e-004	5.0000e-005	3.4000e-004	0.0000	3.6938	3.6938	1.6000e-004	0.0000	3.6978
Worker	8.4200e-003	7.0300e-003	0.0628	1.8000e-004	0.0212	1.3000e-004	0.0213	5.6300e-003	1.2000e-004	5.7500e-003	0.0000	16.5033	16.5033	4.6000e-004	0.0000	16.5149
Total	**8.8500e-003**	**0.0198**	**0.0664**	**2.2000e-004**	**0.0222**	**1.8000e-004**	**0.0224**	**5.9300e-003**	**1.7000e-004**	**6.0900e-003**	**0.0000**	**20.1971**	**20.1971**	**6.2000e-004**	**0.0000**	**20.2128**

3.3 Trenching - 2022

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	0.0298	0.2930	0.3162	4.6000e-004		0.0175	0.0175		0.0161	0.0161	0.0000	40.0424	40.0424	0.0130	0.0000	40.3661
Total	**0.0298**	**0.2930**	**0.3162**	**4.6000e-004**		**0.0175**	**0.0175**		**0.0161**	**0.0161**	**0.0000**	**40.0424**	**40.0424**	**0.0130**	**0.0000**	**40.3661**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.3000e-004	9.5800e-003	2.6400e-003	3.0000e-005	7.8000e-004	4.0000e-005	8.1000e-004	2.2000e-004	3.0000e-005	2.6000e-004	0.0000	2.7704	2.7704	1.2000e-004	0.0000	2.7734
Worker	1.2600e-003	1.0500e-003	9.4200e-003	3.0000e-005	3.1800e-003	2.0000e-005	3.2000e-003	8.4000e-004	2.0000e-005	8.6000e-004	0.0000	2.4755	2.4755	7.0000e-005	0.0000	2.4772
Total	**1.5900e-003**	**0.0106**	**0.0121**	**6.0000e-005**	**3.9600e-003**	**6.0000e-005**	**4.0100e-003**	**1.0600e-003**	**5.0000e-005**	**1.1200e-003**	**0.0000**	**5.2459**	**5.2459**	**1.9000e-004**	**0.0000**	**5.2506**

3.3 Trenching - 2022

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	0.0112	0.2416	0.3443	4.6000e-004		0.0153	0.0153		0.0153	0.0153	0.0000	40.0423	40.0423	0.0130	0.0000	40.3661
Total	**0.0112**	**0.2416**	**0.3443**	**4.6000e-004**		**0.0153**	**0.0153**		**0.0153**	**0.0153**	**0.0000**	**40.0423**	**40.0423**	**0.0130**	**0.0000**	**40.3661**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.3000e-004	9.5800e-003	2.6400e-003	3.0000e-005	7.8000e-004	4.0000e-005	8.1000e-004	2.2000e-004	3.0000e-005	2.6000e-004	0.0000	2.7704	2.7704	1.2000e-004	0.0000	2.7734
Worker	1.2600e-003	1.0500e-003	9.4200e-003	3.0000e-005	3.1800e-003	2.0000e-005	3.2000e-003	8.4000e-004	2.0000e-005	8.6000e-004	0.0000	2.4755	2.4755	7.0000e-005	0.0000	2.4772
Total	**1.5900e-003**	**0.0106**	**0.0121**	**6.0000e-005**	**3.9600e-003**	**6.0000e-005**	**4.0100e-003**	**1.0600e-003**	**5.0000e-005**	**1.1200e-003**	**0.0000**	**5.2459**	**5.2459**	**1.9000e-004**	**0.0000**	**5.2506**

3.4 Plant Installation - 2022

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	0.4146	4.4041	2.6992	6.4100e-003		0.1864	0.1864		0.1728	0.1728	0.0000	561.4688	561.4688	0.1661	0.0000	565.6215
Total	**0.4146**	**4.4041**	**2.6992**	**6.4100e-003**		**0.1864**	**0.1864**		**0.1728**	**0.1728**	**0.0000**	**561.4688**	**561.4688**	**0.1661**	**0.0000**	**565.6215**

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	9.9000e-004	0.0290	8.0000e-003	9.0000e-005	2.3500e-003	1.1000e-004	2.4600e-003	6.8000e-004	1.0000e-004	7.8000e-004	0.0000	8.3950	8.3950	3.7000e-004	0.0000	8.4042
Worker	9.5700e-003	7.9900e-003	0.0714	2.1000e-004	0.0241	1.5000e-004	0.0242	6.4000e-003	1.4000e-004	6.5300e-003	0.0000	18.7538	18.7538	5.3000e-004	0.0000	18.7670
Total	**0.0106**	**0.0370**	**0.0794**	**3.0000e-004**	**0.0264**	**2.6000e-004**	**0.0267**	**7.0800e-003**	**2.4000e-004**	**7.3100e-003**	**0.0000**	**27.1488**	**27.1488**	**9.0000e-004**	**0.0000**	**27.1711**

3.4 Plant Installation - 2022

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	0.1541	3.0747	3.5876	6.4100e-003		0.1365	0.1365		0.1365	0.1365	0.0000	561.4681	561.4681	0.1661	0.0000	565.6208
Total	**0.1541**	**3.0747**	**3.5876**	**6.4100e-003**		**0.1365**	**0.1365**		**0.1365**	**0.1365**	**0.0000**	**561.4681**	**561.4681**	**0.1661**	**0.0000**	**565.6208**

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	9.9000e-004	0.0290	8.0000e-003	9.0000e-005	2.3500e-003	1.1000e-004	2.4600e-003	6.8000e-004	1.0000e-004	7.8000e-004	0.0000	8.3950	8.3950	3.7000e-004	0.0000	8.4042
Worker	9.5700e-003	7.9900e-003	0.0714	2.1000e-004	0.0241	1.5000e-004	0.0242	6.4000e-003	1.4000e-004	6.5300e-003	0.0000	18.7538	18.7538	5.3000e-004	0.0000	18.7670
Total	**0.0106**	**0.0370**	**0.0794**	**3.0000e-004**	**0.0264**	**2.6000e-004**	**0.0267**	**7.0800e-003**	**2.4000e-004**	**7.3100e-003**	**0.0000**	**27.1488**	**27.1488**	**9.0000e-004**	**0.0000**	**27.1711**

3.5 Demobilization - 2022

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	0.0000	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**

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	5.0000e-005	1.4500e-003	4.0000e-004	0.0000	1.2000e-004	1.0000e-005	1.2000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.4198	0.4198	2.0000e-005	0.0000	0.4202
Worker	1.9000e-004	1.6000e-004	1.4300e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3751	0.3751	1.0000e-005	0.0000	0.3753
Total	**2.4000e-004**	**1.6100e-003**	**1.8300e-003**	**0.0000**	**6.0000e-004**	**1.0000e-005**	**6.0000e-004**	**1.6000e-004**	**1.0000e-005**	**1.7000e-004**	**0.0000**	**0.7948**	**0.7948**	**3.0000e-005**	**0.0000**	**0.7956**

3.5 Demobilization - 2022

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	0.0000	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 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	5.0000e-005	1.4500e-003	4.0000e-004	0.0000	1.2000e-004	1.0000e-005	1.2000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.4198	0.4198	2.0000e-005	0.0000	0.4202
Worker	1.9000e-004	1.6000e-004	1.4300e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3751	0.3751	1.0000e-005	0.0000	0.3753
Total	**2.4000e-004**	**1.6100e-003**	**1.8300e-003**	**0.0000**	**6.0000e-004**	**1.0000e-005**	**6.0000e-004**	**1.6000e-004**	**1.0000e-005**	**1.7000e-004**	**0.0000**	**0.7948**	**0.7948**	**3.0000e-005**	**0.0000**	**0.7956**

3.6 Pre-Construction Utility Locations & Potholing - 2023

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	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**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	8.0000e-005	7.3000e-004	0.0000	2.7000e-004	0.0000	2.7000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2022	0.2022	1.0000e-005	0.0000	0.2023
Total	**1.0000e-004**	**8.0000e-005**	**7.3000e-004**	**0.0000**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2022**	**0.2022**	**1.0000e-005**	**0.0000**	**0.2023**

3.6 Pre-Construction Utility Locations & Potholing - 2023

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	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**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	8.0000e-005	7.3000e-004	0.0000	2.7000e-004	0.0000	2.7000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2022	0.2022	1.0000e-005	0.0000	0.2023
Total	**1.0000e-004**	**8.0000e-005**	**7.3000e-004**	**0.0000**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2022**	**0.2022**	**1.0000e-005**	**0.0000**	**0.2023**

3.7 Excavation of Bore/Receiving Pits - 2023

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-004	6.1400e-003	8.9300e-003	1.0000e-005		3.0000e-004	3.0000e-004		2.8000e-004	2.8000e-004	0.0000	1.0943	1.0943	3.5000e-004	0.0000	1.1032
Total	**6.1000e-004**	**6.1400e-003**	**8.9300e-003**	**1.0000e-005**	**0.0000**	**3.0000e-004**	**3.0000e-004**	**0.0000**	**2.8000e-004**	**2.8000e-004**	**0.0000**	**1.0943**	**1.0943**	**3.5000e-004**	**0.0000**	**1.1032**

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	1.0000e-005	2.0000e-004	6.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0764	0.0764	0.0000	0.0000	0.0765
Vendor	3.0000e-005	8.9000e-004	2.8000e-004	0.0000	9.0000e-005	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.3294	0.3294	1.0000e-005	0.0000	0.3298
Worker	9.0000e-005	7.0000e-005	6.3000e-004	0.0000	2.3000e-004	0.0000	2.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1733	0.1733	0.0000	0.0000	0.1734
Total	**1.3000e-004**	**1.1600e-003**	**9.7000e-004**	**0.0000**	**3.4000e-004**	**0.0000**	**3.5000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.5791**	**0.5791**	**1.0000e-005**	**0.0000**	**0.5796**

3.7 Excavation of Bore/Receiving Pits - 2023

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0000e-004	6.9400e-003	9.3700e-003	1.0000e-005		4.9000e-004	4.9000e-004		4.9000e-004	4.9000e-004	0.0000	1.0943	1.0943	3.5000e-004	0.0000	1.1032
Total	**3.0000e-004**	**6.9400e-003**	**9.3700e-003**	**1.0000e-005**	**0.0000**	**4.9000e-004**	**4.9000e-004**	**0.0000**	**4.9000e-004**	**4.9000e-004**	**0.0000**	**1.0943**	**1.0943**	**3.5000e-004**	**0.0000**	**1.1032**

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	1.0000e-005	2.0000e-004	6.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0764	0.0764	0.0000	0.0000	0.0765
Vendor	3.0000e-005	8.9000e-004	2.8000e-004	0.0000	9.0000e-005	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.3294	0.3294	1.0000e-005	0.0000	0.3298
Worker	9.0000e-005	7.0000e-005	6.3000e-004	0.0000	2.3000e-004	0.0000	2.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1733	0.1733	0.0000	0.0000	0.1734
Total	**1.3000e-004**	**1.1600e-003**	**9.7000e-004**	**0.0000**	**3.4000e-004**	**0.0000**	**3.5000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.5791**	**0.5791**	**1.0000e-005**	**0.0000**	**0.5796**

3.8 Installation of Pipe - 2023

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	5.7000e-003	0.0541	0.0539	2.5000e-004		1.7500e-003	1.7500e-003		1.6100e-003	1.6100e-003	0.0000	22.0067	22.0067	7.1200e-003	0.0000	22.1846
Total	**5.7000e-003**	**0.0541**	**0.0539**	**2.5000e-004**		**1.7500e-003**	**1.7500e-003**		**1.6100e-003**	**1.6100e-003**	**0.0000**	**22.0067**	**22.0067**	**7.1200e-003**	**0.0000**	**22.1846**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.9000e-004	0.0119	3.7400e-003	5.0000e-005	1.2500e-003	3.0000e-005	1.2800e-003	3.6000e-004	3.0000e-005	3.9000e-004	0.0000	4.3649	4.3649	1.8000e-004	0.0000	4.3694
Worker	5.7000e-004	4.6000e-004	4.1500e-003	1.0000e-005	1.5300e-003	1.0000e-005	1.5400e-003	4.1000e-004	1.0000e-005	4.2000e-004	0.0000	1.1480	1.1480	3.0000e-005	0.0000	1.1488
Total	**9.6000e-004**	**0.0123**	**7.8900e-003**	**6.0000e-005**	**2.7800e-003**	**4.0000e-005**	**2.8200e-003**	**7.7000e-004**	**4.0000e-005**	**8.1000e-004**	**0.0000**	**5.5129**	**5.5129**	**2.1000e-004**	**0.0000**	**5.5182**

3.8 Installation of Pipe - 2023

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	6.2000e-003	0.1198	0.1343	2.5000e-004		4.5400e-003	4.5400e-003		4.5400e-003	4.5400e-003	0.0000	22.0066	22.0066	7.1200e-003	0.0000	22.1846
Total	**6.2000e-003**	**0.1198**	**0.1343**	**2.5000e-004**		**4.5400e-003**	**4.5400e-003**		**4.5400e-003**	**4.5400e-003**	**0.0000**	**22.0066**	**22.0066**	**7.1200e-003**	**0.0000**	**22.1846**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.9000e-004	0.0119	3.7400e-003	5.0000e-005	1.2500e-003	3.0000e-005	1.2800e-003	3.6000e-004	3.0000e-005	3.9000e-004	0.0000	4.3649	4.3649	1.8000e-004	0.0000	4.3694
Worker	5.7000e-004	4.6000e-004	4.1500e-003	1.0000e-005	1.5300e-003	1.0000e-005	1.5400e-003	4.1000e-004	1.0000e-005	4.2000e-004	0.0000	1.1480	1.1480	3.0000e-005	0.0000	1.1488
Total	**9.6000e-004**	**0.0123**	**7.8900e-003**	**6.0000e-005**	**2.7800e-003**	**4.0000e-005**	**2.8200e-003**	**7.7000e-004**	**4.0000e-005**	**8.1000e-004**	**0.0000**	**5.5129**	**5.5129**	**2.1000e-004**	**0.0000**	**5.5182**

3.9 Backfill - 2023

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4100e-003	0.0181	0.0262	4.0000e-005		9.2000e-004	9.2000e-004		9.0000e-004	9.0000e-004	0.0000	3.5058	3.5058	5.0000e-004	0.0000	3.5182
Total	**2.4100e-003**	**0.0181**	**0.0262**	**4.0000e-005**	**0.0000**	**9.2000e-004**	**9.2000e-004**	**0.0000**	**9.0000e-004**	**9.0000e-004**	**0.0000**	**3.5058**	**3.5058**	**5.0000e-004**	**0.0000**	**3.5182**

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	1.0000e-005	4.0000e-004	1.2000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1527	0.1527	1.0000e-005	0.0000	0.1529
Vendor	6.0000e-005	1.7900e-003	5.6000e-004	1.0000e-005	1.9000e-004	0.0000	1.9000e-004	5.0000e-005	0.0000	6.0000e-005	0.0000	0.6589	0.6589	3.0000e-005	0.0000	0.6595
Worker	9.0000e-005	7.0000e-005	6.3000e-004	0.0000	2.3000e-004	0.0000	2.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1733	0.1733	0.0000	0.0000	0.1734
Total	**1.6000e-004**	**2.2600e-003**	**1.3100e-003**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**4.6000e-004**	**1.2000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.9848**	**0.9848**	**4.0000e-005**	**0.0000**	**0.9858**

3.9 Backfill - 2023

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.7000e-004	0.0198	0.0267	4.0000e-005		1.3800e-003	1.3800e-003		1.3800e-003	1.3800e-003	0.0000	3.5057	3.5057	5.0000e-004	0.0000	3.5182
Total	**8.7000e-004**	**0.0198**	**0.0267**	**4.0000e-005**	**0.0000**	**1.3800e-003**	**1.3800e-003**	**0.0000**	**1.3800e-003**	**1.3800e-003**	**0.0000**	**3.5057**	**3.5057**	**5.0000e-004**	**0.0000**	**3.5182**

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	1.0000e-005	4.0000e-004	1.2000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1527	0.1527	1.0000e-005	0.0000	0.1529
Vendor	6.0000e-005	1.7900e-003	5.6000e-004	1.0000e-005	1.9000e-004	0.0000	1.9000e-004	5.0000e-005	0.0000	6.0000e-005	0.0000	0.6589	0.6589	3.0000e-005	0.0000	0.6595
Worker	9.0000e-005	7.0000e-005	6.3000e-004	0.0000	2.3000e-004	0.0000	2.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1733	0.1733	0.0000	0.0000	0.1734
Total	**1.6000e-004**	**2.2600e-003**	**1.3100e-003**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**4.6000e-004**	**1.2000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.9848**	**0.9848**	**4.0000e-005**	**0.0000**	**0.9858**

3.10 Installation of Metered Turnouts - 2023

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	1.6600e-003	0.0169	0.0245	3.0000e-005		8.3000e-004	8.3000e-004		7.7000e-004	7.7000e-004	0.0000	3.0094	3.0094	9.7000e-004	0.0000	3.0338
Total	**1.6600e-003**	**0.0169**	**0.0245**	**3.0000e-005**		**8.3000e-004**	**8.3000e-004**		**7.7000e-004**	**7.7000e-004**	**0.0000**	**3.0094**	**3.0094**	**9.7000e-004**	**0.0000**	**3.0338**

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	8.0000e-005	2.4600e-003	7.8000e-004	1.0000e-005	2.6000e-004	1.0000e-005	2.6000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.9059	0.9059	4.0000e-005	0.0000	0.9069
Worker	2.4000e-004	1.9000e-004	1.7200e-003	1.0000e-005	6.4000e-004	0.0000	6.4000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.4765	0.4765	1.0000e-005	0.0000	0.4768
Total	**3.2000e-004**	**2.6500e-003**	**2.5000e-003**	**2.0000e-005**	**9.0000e-004**	**1.0000e-005**	**9.0000e-004**	**2.4000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**1.3825**	**1.3825**	**5.0000e-005**	**0.0000**	**1.3837**

3.10 Installation of Metered Turnouts - 2023

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	8.4000e-004	0.0191	0.0258	3.0000e-005		1.3400e-003	1.3400e-003		1.3400e-003	1.3400e-003	0.0000	3.0094	3.0094	9.7000e-004	0.0000	3.0338
Total	**8.4000e-004**	**0.0191**	**0.0258**	**3.0000e-005**		**1.3400e-003**	**1.3400e-003**		**1.3400e-003**	**1.3400e-003**	**0.0000**	**3.0094**	**3.0094**	**9.7000e-004**	**0.0000**	**3.0338**

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	8.0000e-005	2.4600e-003	7.8000e-004	1.0000e-005	2.6000e-004	1.0000e-005	2.6000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.9059	0.9059	4.0000e-005	0.0000	0.9069
Worker	2.4000e-004	1.9000e-004	1.7200e-003	1.0000e-005	6.4000e-004	0.0000	6.4000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.4765	0.4765	1.0000e-005	0.0000	0.4768
Total	**3.2000e-004**	**2.6500e-003**	**2.5000e-003**	**2.0000e-005**	**9.0000e-004**	**1.0000e-005**	**9.0000e-004**	**2.4000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**1.3825**	**1.3825**	**5.0000e-005**	**0.0000**	**1.3837**

3.11 Pavement Repairs - 2023

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	9.7000e-004	9.6400e-003	0.0132	2.0000e-005		5.0000e-004	5.0000e-004		4.6000e-004	4.6000e-004	0.0000	1.7651	1.7651	5.7000e-004	0.0000	1.7794
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.7000e-004**	**9.6400e-003**	**0.0132**	**2.0000e-005**		**5.0000e-004**	**5.0000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**1.7651**	**1.7651**	**5.7000e-004**	**0.0000**	**1.7794**

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	4.0000e-005	1.3400e-003	4.2000e-004	1.0000e-005	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.4941	0.4941	2.0000e-005	0.0000	0.4947
Worker	6.0000e-005	5.0000e-005	4.7000e-004	0.0000	1.7000e-004	0.0000	1.7000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1300	0.1300	0.0000	0.0000	0.1301
Total	**1.0000e-004**	**1.3900e-003**	**8.9000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**3.1000e-004**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.6241**	**0.6241**	**2.0000e-005**	**0.0000**	**0.6247**

3.11 Pavement Repairs - 2023

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	4.9000e-004	0.0102	0.0153	2.0000e-005		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	1.7651	1.7651	5.7000e-004	0.0000	1.7794
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.9000e-004**	**0.0102**	**0.0153**	**2.0000e-005**		**5.9000e-004**	**5.9000e-004**		**5.9000e-004**	**5.9000e-004**	**0.0000**	**1.7651**	**1.7651**	**5.7000e-004**	**0.0000**	**1.7794**

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	4.0000e-005	1.3400e-003	4.2000e-004	1.0000e-005	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.4941	0.4941	2.0000e-005	0.0000	0.4947
Worker	6.0000e-005	5.0000e-005	4.7000e-004	0.0000	1.7000e-004	0.0000	1.7000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1300	0.1300	0.0000	0.0000	0.1301
Total	**1.0000e-004**	**1.3900e-003**	**8.9000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**3.1000e-004**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.6241**	**0.6241**	**2.0000e-005**	**0.0000**	**0.6247**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	1.3400e-003	6.1400e-003	0.0185	6.0000e-005	6.0900e-003	6.0000e-005	6.1500e-003	1.6300e-003	5.0000e-005	1.6800e-003	0.0000	5.7180	5.7180	2.0000e-004	0.0000	5.7229
Unmitigated	1.3400e-003	6.1400e-003	0.0185	6.0000e-005	6.0900e-003	6.0000e-005	6.1500e-003	1.6300e-003	5.0000e-005	1.6800e-003	0.0000	5.7180	5.7180	2.0000e-004	0.0000	5.7229

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Research & Development	4.00	4.00	4.00	16,235	16,235
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	4.00	4.00	4.00	16,235	16,235

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
Research & Development	13.00	13.00	13.00	33.00	48.00	19.00	82	15	3
Unrefrigerated Warehouse-No	13.00	13.00	13.00	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Research & Development	0.582546	0.028575	0.198242	0.117308	0.024121	0.006096	0.012865	0.019735	0.002341	0.001188	0.004913	0.000770	0.001299
Unrefrigerated Warehouse-No Rail	0.582546	0.028575	0.198242	0.117308	0.024121	0.006096	0.012865	0.019735	0.002341	0.001188	0.004913	0.000770	0.001299

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	43.3258	43.3258	6.1000e-003	1.2600e-003	43.8543
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	43.3258	43.3258	6.1000e-003	1.2600e-003	43.8543
NaturalGas Mitigated	2.0300e-003	0.0184	0.0155	1.1000e-004		1.4000e-003	1.4000e-003		1.4000e-003	1.4000e-003	0.0000	20.0765	20.0765	3.8000e-004	3.7000e-004	20.1958
NaturalGas Unmitigated	2.0300e-003	0.0184	0.0155	1.1000e-004		1.4000e-003	1.4000e-003		1.4000e-003	1.4000e-003	0.0000	20.0765	20.0765	3.8000e-004	3.7000e-004	20.1958

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					
Research & Development	41740	2.3000e-004	2.0500e-003	1.7200e-003	1.0000e-005		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	2.2274	2.2274	4.0000e-005	4.0000e-005	2.2406
Unrefrigerated Warehouse-No Rail	334480	1.8000e-003	0.0164	0.0138	1.0000e-004		1.2500e-003	1.2500e-003		1.2500e-003	1.2500e-003	0.0000	17.8491	17.8491	3.4000e-004	3.3000e-004	17.9552
Total		**2.0300e-003**	**0.0185**	**0.0155**	**1.1000e-004**		**1.4100e-003**	**1.4100e-003**		**1.4100e-003**	**1.4100e-003**	**0.0000**	**20.0765**	**20.0765**	**3.8000e-004**	**3.7000e-004**	**20.1958**

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					
Research & Development	41740	2.3000e-004	2.0500e-003	1.7200e-003	1.0000e-005		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	2.2274	2.2274	4.0000e-005	4.0000e-005	2.2406
Unrefrigerated Warehouse-No Rail	334480	1.8000e-003	0.0164	0.0138	1.0000e-004		1.2500e-003	1.2500e-003		1.2500e-003	1.2500e-003	0.0000	17.8491	17.8491	3.4000e-004	3.3000e-004	17.9552
Total		**2.0300e-003**	**0.0185**	**0.0155**	**1.1000e-004**		**1.4100e-003**	**1.4100e-003**		**1.4100e-003**	**1.4100e-003**	**0.0000**	**20.0765**	**20.0765**	**3.8000e-004**	**3.7000e-004**	**20.1958**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Research & Development	17640	1.6483	2.3000e-004	5.0000e-005	1.6684
Unrefrigerated Warehouse-No Rail	446035	41.6775	5.8700e-003	1.2100e-003	42.1860
Total		**43.3258**	**6.1000e-003**	**1.2600e-003**	**43.8543**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Research & Development	17640	1.6483	2.3000e-004	5.0000e-005	1.6684
Unrefrigerated Warehouse-No Rail	446035	41.6775	5.8700e-003	1.2100e-003	42.1860
Total		**43.3258**	**6.1000e-003**	**1.2600e-003**	**43.8543**

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	0.1039	0.0000	3.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.7000e-004	6.7000e-004	0.0000	0.0000	7.2000e-004
Unmitigated	0.1039	0.0000	3.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.7000e-004	6.7000e-004	0.0000	0.0000	7.2000e-004

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	0.0238					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0801					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	3.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.7000e-004	6.7000e-004	0.0000	0.0000	7.2000e-004
Total	**0.1038**	**0.0000**	**3.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**6.7000e-004**	**6.7000e-004**	**0.0000**	**0.0000**	**7.2000e-004**

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	0.0238					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0801					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	3.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.7000e-004	6.7000e-004	0.0000	0.0000	7.2000e-004
Total	**0.1038**	**0.0000**	**3.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**6.7000e-004**	**6.7000e-004**	**0.0000**	**0.0000**	**7.2000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.8092	0.0321	7.7000e-004	1.8418
Unmitigated	0.8092	0.0321	7.7000e-004	1.8418

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Research & Development	0.983388 / 0	0.8092	0.0321	7.7000e-004	1.8418
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.8092**	**0.0321**	**7.7000e-004**	**1.8418**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Research & Development	0.983388 / 0	0.8092	0.0321	7.7000e-004	1.8418
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.8092**	**0.0321**	**7.7000e-004**	**1.8418**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	3.5605	0.2104	0.0000	8.8209
Unmitigated	3.5605	0.2104	0.0000	8.8209

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Research & Development	0.15	0.0305	1.8000e-003	0.0000	0.0754
Unrefrigerated Warehouse-No Rail	17.39	3.5300	0.2086	0.0000	8.7455
Total		**3.5605**	**0.2104**	**0.0000**	**8.8209**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Research & Development	0.15	0.0305	1.8000e-003	0.0000	0.0754
Unrefrigerated Warehouse-No Rail	17.39	3.5300	0.2086	0.0000	8.7455
Total		**3.5605**	**0.2104**	**0.0000**	**8.8209**

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	1	100	500	0.73	CNG

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 - CNG (500 - 9999 HP)	0.2200	0.0169	0.5729	8.0000e-005		1.2100e-003	1.2100e-003		1.2100e-003	1.2100e-003	0.0000	12.7484	12.7484	0.0267	0.0000	13.4148
Total	**0.2200**	**0.0169**	**0.5729**	**8.0000e-005**		**1.2100e-003**	**1.2100e-003**		**1.2100e-003**	**1.2100e-003**	**0.0000**	**12.7484**	**12.7484**	**0.0267**	**0.0000**	**13.4148**

11.0 Vegetation

San Miguel WWTP Upgrade/Expansion Project BACT

San Luis Obispo County APCD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	2.00	1000sqft	0.05	2,000.00	0
Unrefrigerated Warehouse-No Rail	18.50	1000sqft	0.42	18,500.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	3			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	206	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Based on project description. CO2 rate based on PGE 2020 Sustainability Report.

Land Use - Based on project description.

Construction Phase - Based on information from SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

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Off-road Equipment - Based on information provided by SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

Trips and VMT - Based on information provided by SMCSD.

On-road Fugitive Dust - CalEEMod defaults.

Grading - Based on information provided by SMCSD.

Vehicle Trips - 2 additional employees

Energy Use - CalEEMod defaults. Pump energy use added to warehouse.

Water And Wastewater - Based on information from SMCSD.

Solid Waste - CalEEMod defaults.

Construction Off-road Equipment Mitigation - In accordance with SLOCAPCD Rule 401.

Stationary Sources - Emergency Generators and Fire Pumps - Based on information provided by SMCSD.

Stationary Sources - Emergency Generators and Fire Pumps EF - CalEEMod defaults.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	100.00	5.00
tblConstructionPhase	NumDays	100.00	53.00
tblConstructionPhase	NumDays	100.00	22.00
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tblConstructionPhase	NumDays	2.00	8.00
tblConstructionPhase	NumDays	5.00	6.00
tblConstructionPhase	NumDays	1.00	88.00
tblConstructionPhase	NumDays	1.00	14.00
tblEnergyUse	LightingElect	3.22	0.00
tblEnergyUse	NT24E	5.13	0.00
tblEnergyUse	T24E	1.04	24.11
tblGrading	MaterialExported	0.00	11.00
tblGrading	MaterialImported	0.00	27.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	206
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	21.00
tblTripsAndVMT	HaulingTripLength	20.00	21.00
tblTripsAndVMT	HaulingTripNumber	1.00	2.00
tblTripsAndVMT	HaulingTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00

tblTripsAndVMT	VendorTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	3.00	2.00
tblTripsAndVMT	WorkerTripNumber	38.00	50.00
tblTripsAndVMT	WorkerTripNumber	5.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	50.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblTripsAndVMT	WorkerTripNumber	0.00	4.00
tblTripsAndVMT	WorkerTripNumber	3.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblTripsAndVMT	WorkerTripNumber	5.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblVehicleTrips	ST_TR	1.90	2.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.11	2.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	8.11	2.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	IndoorWaterUseRate	4,278,125.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2022	8.4979	88.7958	55.6160	0.1342	8.1312	3.7334	10.5436	3.6200	3.4617	5.8983	0.0000	12,994.7047	12,994.7047	3.6820	0.0000	13,086.7540
2023	0.6399	5.0750	6.8856	0.0127	0.1172	0.2318	0.3490	0.0322	0.2256	0.2578	0.0000	1,240.8269	1,240.8269	0.3047	0.0000	1,244.5359
Maximum	**8.4979**	**88.7958**	**55.6160**	**0.1342**	**8.1312**	**3.7334**	**10.5436**	**3.6200**	**3.4617**	**5.8983**	**0.0000**	**12,994.7047**	**12,994.7047**	**3.6820**	**0.0000**	**13,086.7540**

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	lb/day										lb/day					
2022	3.2890	62.2083	73.3848	0.1342	3.9442	2.7346	6.1972	1.7049	2.7343	3.9577	0.0000	12,994.7047	12,994.7047	3.6820	0.0000	13,086.7540
2023	0.2695	5.4935	6.9963	0.0127	0.1169	0.3477	0.4646	0.0321	0.3476	0.3797	0.0000	1,240.8269	1,240.8269	0.3047	0.0000	1,244.5359
Maximum	**3.2890**	**62.2083**	**73.3848**	**0.1342**	**3.9442**	**2.7346**	**6.1972**	**1.7049**	**2.7343**	**3.9577**	**0.0000**	**12,994.7047**	**12,994.7047**	**3.6820**	**0.0000**	**13,086.7540**

	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	**61.06**	**27.88**	**-28.61**	**0.00**	**50.77**	**22.27**	**38.84**	**52.44**	**16.42**	**29.54**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
Area	0.5691	2.0000e-005	2.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Energy	0.0111	0.1011	0.0849	6.1000e-004		7.6800e-003	7.6800e-003		7.6800e-003	7.6800e-003		121.2635	121.2635	2.3200e-003	2.2200e-003	121.9841
Mobile	7.7300e-003	0.0323	0.1036	3.5000e-004	0.0344	3.1000e-004	0.0347	9.1800e-003	2.9000e-004	9.4700e-003		35.7822	35.7822	1.2100e-003		35.8124
Stationary	4.3990	0.3388	11.4571	1.5300e-003		0.0243	0.0243		0.0243	0.0243		281.0547	281.0547	0.5877		295.7462
Total	**4.9869**	**0.4722**	**11.6477**	**2.4900e-003**	**0.0344**	**0.0323**	**0.0666**	**9.1800e-003**	**0.0323**	**0.0414**		**438.1049**	**438.1049**	**0.5912**	**2.2200e-003**	**453.5475**

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	lb/day										lb/day					
Area	0.5691	2.0000e-005	2.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Energy	0.0111	0.1011	0.0849	6.1000e-004		7.6800e-003	7.6800e-003		7.6800e-003	7.6800e-003		121.2635	121.2635	2.3200e-003	2.2200e-003	121.9841
Mobile	7.7300e-003	0.0323	0.1036	3.5000e-004	0.0344	3.1000e-004	0.0347	9.1800e-003	2.9000e-004	9.4700e-003		35.7822	35.7822	1.2100e-003		35.8124
Stationary	4.3990	0.3388	11.4571	1.5300e-003		0.0243	0.0243		0.0243	0.0243		281.0547	281.0547	0.5877		295.7462
Total	**4.9869**	**0.4722**	**11.6477**	**2.4900e-003**	**0.0344**	**0.0323**	**0.0666**	**9.1800e-003**	**0.0323**	**0.0414**		**438.1049**	**438.1049**	**0.5912**	**2.2200e-003**	**453.5475**

	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

San Miguel WWTP Upgrade/Expansion Project BACT - San Luis Obispo County APCD Air District, Summer

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/3/2022	5/4/2022	5	88	
2	Trenching	Trenching	5/5/2022	8/4/2022	5	66	
3	Plant Installation	Building Construction	8/5/2022	12/22/2022	5	100	
4	Demobilization	Building Construction	12/23/2022	12/29/2022	5	5	
5	Pre-Construction Utility Locations & Potholing	Site Preparation	1/2/2023	1/19/2023	5	14	
6	Excavation of Bore/Receiving Pits	Grading	1/20/2023	1/31/2023	5	8	
7	Installation of Pipe	Building Construction	2/1/2023	4/14/2023	5	53	
8	Backfill	Grading	4/15/2023	4/26/2023	5	8	
9	Installation of Metered Turnouts	Building Construction	4/27/2023	5/26/2023	5	22	
10	Pavement Repairs	Paving	5/27/2023	6/5/2023	5	6	

Acres of Grading (Site Preparation Phase): 132

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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
Excavation of Bore/Receiving Pits	Concrete/Industrial Saws	0	8.00	81	0.73
Excavation of Bore/Receiving Pits	Rubber Tired Dozers	0	1.00	247	0.40
Excavation of Bore/Receiving Pits	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Installation of Pipe	Bore/Drill Rigs	1	8.00	221	0.50
Installation of Pipe	Cranes	0	4.00	231	0.29
Installation of Pipe	Forklifts	0	6.00	89	0.20

Installation of Pipe	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Backfill	Concrete/Industrial Saws	0	8.00	81	0.73
Backfill	Crushing/Proc. Equipment	1	8.00	85	0.78
Backfill	Rubber Tired Dozers	0	1.00	247	0.40
Backfill	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Installation of Metered Turnouts	Cranes	0	4.00	231	0.29
Installation of Metered Turnouts	Forklifts	0	6.00	89	0.20
Installation of Metered Turnouts	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pavement Repairs	Cement and Mortar Mixers	0	6.00	9	0.56
Pavement Repairs	Pavers	0	7.00	130	0.42
Pavement Repairs	Paving Equipment	1	8.00	132	0.36
Pavement Repairs	Rollers	1	8.00	80	0.38
Pavement Repairs	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Site Preparation	Forklifts	3	8.00	89	0.20
Site Preparation	Generator Sets	5	8.00	84	0.74
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rollers	1	8.00	80	0.38
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Loaders	1	8.00	203	0.36
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Trenchers	1	8.00	78	0.50
Pre-Construction Utility Locations & Potholing	Graders	0	8.00	187	0.41
Pre-Construction Utility Locations & Potholing	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Trenching	Pavers	1	8.00	130	0.42
Trenching	Rollers	1	8.00	80	0.38
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trenching	Trenchers	1	8.00	78	0.50
Plant Installation	Cranes	0	4.00	231	0.29
Plant Installation	Crushing/Proc. Equipment	1	8.00	85	0.78
Plant Installation	Forklifts	0	6.00	89	0.20
Plant Installation	Graders	3	8.00	187	0.41
Plant Installation	Pumps	1	8.00	84	0.74
Plant Installation	Rollers	3	8.00	80	0.38
Plant Installation	Rubber Tired Dozers	3	8.00	247	0.40
Plant Installation	Rubber Tired Loaders	2	8.00	203	0.36
Plant Installation	Scrapers	3	8.00	367	0.48
Plant Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Demobilization	Cranes	0	4.00	231	0.29
Demobilization	Forklifts	0	6.00	89	0.20
Demobilization	Tractors/Loaders/Backhoes	0	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
Excavation of Bore/Receiving Pits	1	6.00	2.00	2.00	13.00	13.00	21.00	LD_Mix	HDT_Mix	HHDT
Installation of Pipe	1	6.00	4.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Backfill	2	6.00	4.00	4.00	13.00	13.00	21.00	LD_Mix	HDT_Mix	HHDT
Installation of Metered Turnouts	1	6.00	2.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Pavement Repairs	2	6.00	4.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	15	50.00	2.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Pre-Construction Utility Locations & Pot	0	4.00	0.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	4	10.00	2.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Plant Installation	17	50.00	4.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Demobilization	0	20.00	4.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2022

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	lb/day										lb/day					
Fugitive Dust					7.6128	0.0000	7.6128	3.4820	0.0000	3.4820			0.0000			0.0000
Off-Road	5.0483	50.6069	41.7490	0.0832		2.4084	2.4084		2.2745	2.2745		7,985.8300	7,985.8300	1.7233		8,028.9118
Total	**5.0483**	**50.6069**	**41.7490**	**0.0832**	**7.6128**	**2.4084**	**10.0212**	**3.4820**	**2.2745**	**5.7565**		**7,985.8300**	**7,985.8300**	**1.7233**		**8,028.9118**

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	lb/day										lb/day					
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
Vendor	9.6900e-003	0.2855	0.0769	8.7000e-004	0.0241	1.0800e-003	0.0251	6.9200e-003	1.0300e-003	7.9500e-003		93.0948	93.0948	3.9700e-003		93.1940
Worker	0.1868	0.1435	1.4790	4.3200e-003	0.4943	2.9700e-003	0.4973	0.1311	2.7400e-003	0.1338		430.2467	430.2467	0.0120		430.5473
Total	**0.1965**	**0.4290**	**1.5559**	**5.1900e-003**	**0.5184**	**4.0500e-003**	**0.5224**	**0.1380**	**3.7700e-003**	**0.1418**		**523.3416**	**523.3416**	**0.0160**		**523.7413**

3.2 Site Preparation - 2022

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	lb/day										lb/day					
Fugitive Dust					3.4258	0.0000	3.4258	1.5669	0.0000	1.5669			0.0000			0.0000
Off-Road	1.8925	40.0665	50.1130	0.0832		2.2490	2.2490		2.2490	2.2490	0.0000	7,985.8300	7,985.8300	1.7233		8,028.9118
Total	**1.8925**	**40.0665**	**50.1130**	**0.0832**	**3.4258**	**2.2490**	**5.6748**	**1.5669**	**2.2490**	**3.8159**	**0.0000**	**7,985.8300**	**7,985.8300**	**1.7233**		**8,028.9118**

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	lb/day										lb/day					
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
Vendor	9.6900e-003	0.2855	0.0769	8.7000e-004	0.0241	1.0800e-003	0.0251	6.9200e-003	1.0300e-003	7.9500e-003		93.0948	93.0948	3.9700e-003		93.1940
Worker	0.1868	0.1435	1.4790	4.3200e-003	0.4943	2.9700e-003	0.4973	0.1311	2.7400e-003	0.1338		430.2467	430.2467	0.0120		430.5473
Total	**0.1965**	**0.4290**	**1.5559**	**5.1900e-003**	**0.5184**	**4.0500e-003**	**0.5224**	**0.1380**	**3.7700e-003**	**0.1418**		**523.3416**	**523.3416**	**0.0160**		**523.7413**

3.3 Trenching - 2022

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	lb/day										lb/day					
Off-Road	0.9017	8.8801	9.5812	0.0138		0.5288	0.5288		0.4865	0.4865		1,337.5501	1,337.5501	0.4326		1,348.3649
Total	**0.9017**	**8.8801**	**9.5812**	**0.0138**		**0.5288**	**0.5288**		**0.4865**	**0.4865**		**1,337.5501**	**1,337.5501**	**0.4326**		**1,348.3649**

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	lb/day										lb/day					
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
Vendor	9.6900e-003	0.2855	0.0769	8.7000e-004	0.0241	1.0800e-003	0.0251	6.9200e-003	1.0300e-003	7.9500e-003		93.0948	93.0948	3.9700e-003		93.1940
Worker	0.0374	0.0287	0.2958	8.6000e-004	0.0989	5.9000e-004	0.0995	0.0262	5.5000e-004	0.0268		86.0494	86.0494	2.4000e-003		86.1095
Total	**0.0471**	**0.3142**	**0.3727**	**1.7300e-003**	**0.1229**	**1.6700e-003**	**0.1246**	**0.0331**	**1.5800e-003**	**0.0347**		**179.1442**	**179.1442**	**6.3700e-003**		**179.3035**

3.3 Trenching - 2022

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	lb/day										lb/day					
Off-Road	0.3384	7.3223	10.4339	0.0138		0.4644	0.4644		0.4644	0.4644	0.0000	1,337.5501	1,337.5501	0.4326		1,348.3649
Total	**0.3384**	**7.3223**	**10.4339**	**0.0138**		**0.4644**	**0.4644**		**0.4644**	**0.4644**	**0.0000**	**1,337.5501**	**1,337.5501**	**0.4326**		**1,348.3649**

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	lb/day										lb/day					
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
Vendor	9.6900e-003	0.2855	0.0769	8.7000e-004	0.0241	1.0800e-003	0.0251	6.9200e-003	1.0300e-003	7.9500e-003		93.0948	93.0948	3.9700e-003		93.1940
Worker	0.0374	0.0287	0.2958	8.6000e-004	0.0989	5.9000e-004	0.0995	0.0262	5.5000e-004	0.0268		86.0494	86.0494	2.4000e-003		86.1095
Total	**0.0471**	**0.3142**	**0.3727**	**1.7300e-003**	**0.1229**	**1.6700e-003**	**0.1246**	**0.0331**	**1.5800e-003**	**0.0347**		**179.1442**	**179.1442**	**6.3700e-003**		**179.3035**

3.4 Plant Installation - 2022

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	lb/day										lb/day					
Off-Road	8.2917	88.0814	53.9831	0.1281		3.7283	3.7283		3.4569	3.4569		12,378.2683	12,378.2683	3.6620		12,469.8187
Total	**8.2917**	**88.0814**	**53.9831**	**0.1281**		**3.7283**	**3.7283**		**3.4569**	**3.4569**		**12,378.2683**	**12,378.2683**	**3.6620**		**12,469.8187**

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	lb/day										lb/day					
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
Vendor	0.0194	0.5710	0.1539	1.7500e-003	0.0481	2.1500e-003	0.0503	0.0138	2.0600e-003	0.0159		186.1897	186.1897	7.9300e-003		186.3880
Worker	0.1868	0.1435	1.4790	4.3200e-003	0.4943	2.9700e-003	0.4973	0.1311	2.7400e-003	0.1338		430.2467	430.2467	0.0120		430.5473
Total	**0.2062**	**0.7145**	**1.6329**	**6.0700e-003**	**0.5424**	**5.1200e-003**	**0.5476**	**0.1449**	**4.8000e-003**	**0.1498**		**616.4364**	**616.4364**	**0.0200**		**616.9353**

3.4 Plant Installation - 2022

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	lb/day										lb/day					
Off-Road	3.0828	61.4939	71.7519	0.1281		2.7295	2.7295		2.7295	2.7295	0.0000	12,378.2683	12,378.2683	3.6620		12,469.8187
Total	**3.0828**	**61.4939**	**71.7519**	**0.1281**		**2.7295**	**2.7295**		**2.7295**	**2.7295**	**0.0000**	**12,378.2683**	**12,378.2683**	**3.6620**		**12,469.8187**

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	lb/day										lb/day					
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
Vendor	0.0194	0.5710	0.1539	1.7500e-003	0.0481	2.1500e-003	0.0503	0.0138	2.0600e-003	0.0159		186.1897	186.1897	7.9300e-003		186.3880
Worker	0.1868	0.1435	1.4790	4.3200e-003	0.4943	2.9700e-003	0.4973	0.1311	2.7400e-003	0.1338		430.2467	430.2467	0.0120		430.5473
Total	**0.2062**	**0.7145**	**1.6329**	**6.0700e-003**	**0.5424**	**5.1200e-003**	**0.5476**	**0.1449**	**4.8000e-003**	**0.1498**		**616.4364**	**616.4364**	**0.0200**		**616.9353**

3.5 Demobilization - 2022

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	lb/day										lb/day					
Off-Road	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**

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	lb/day										lb/day					
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
Vendor	0.0194	0.5710	0.1539	1.7500e-003	0.0481	2.1500e-003	0.0503	0.0138	2.0600e-003	0.0159		186.1897	186.1897	7.9300e-003		186.3880
Worker	0.0747	0.0574	0.5916	1.7300e-003	0.1977	1.1900e-003	0.1989	0.0524	1.1000e-003	0.0535		172.0987	172.0987	4.8100e-003		172.2189
Total	**0.0941**	**0.6284**	**0.7455**	**3.4800e-003**	**0.2459**	**3.3400e-003**	**0.2492**	**0.0663**	**3.1600e-003**	**0.0695**		**358.2884**	**358.2884**	**0.0127**		**358.6069**

3.5 Demobilization - 2022

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	lb/day										lb/day					
Off-Road	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**

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	lb/day										lb/day					
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
Vendor	0.0194	0.5710	0.1539	1.7500e-003	0.0481	2.1500e-003	0.0503	0.0138	2.0600e-003	0.0159		186.1897	186.1897	7.9300e-003		186.3880
Worker	0.0747	0.0574	0.5916	1.7300e-003	0.1977	1.1900e-003	0.1989	0.0524	1.1000e-003	0.0535		172.0987	172.0987	4.8100e-003		172.2189
Total	**0.0941**	**0.6284**	**0.7455**	**3.4800e-003**	**0.2459**	**3.3400e-003**	**0.2492**	**0.0663**	**3.1600e-003**	**0.0695**		**358.2884**	**358.2884**	**0.0127**		**358.6069**

3.6 Pre-Construction Utility Locations & Potholing - 2023

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	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	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**

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	lb/day										lb/day					
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
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
Worker	0.0140	0.0103	0.1083	3.3000e-004	0.0395	2.3000e-004	0.0398	0.0105	2.1000e-004	0.0107		33.1284	33.1284	8.6000e-004		33.1499
Total	**0.0140**	**0.0103**	**0.1083**	**3.3000e-004**	**0.0395**	**2.3000e-004**	**0.0398**	**0.0105**	**2.1000e-004**	**0.0107**		**33.1284**	**33.1284**	**8.6000e-004**		**33.1499**

3.6 Pre-Construction Utility Locations & Potholing - 2023

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	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	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**		**0.0000**

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	lb/day										lb/day					
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
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
Worker	0.0140	0.0103	0.1083	3.3000e-004	0.0395	2.3000e-004	0.0398	0.0105	2.1000e-004	0.0107		33.1284	33.1284	8.6000e-004		33.1499
Total	**0.0140**	**0.0103**	**0.1083**	**3.3000e-004**	**0.0395**	**2.3000e-004**	**0.0398**	**0.0105**	**2.1000e-004**	**0.0107**		**33.1284**	**33.1284**	**8.6000e-004**		**33.1499**

3.7 Excavation of Bore/Receiving Pits - 2023

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	lb/day										lb/day					
Fugitive Dust					2.5000e-004	0.0000	2.5000e-004	4.0000e-005	0.0000	4.0000e-005			0.0000			0.0000
Off-Road	0.1514	1.5357	2.2313	3.1200e-003		0.0758	0.0758		0.0698	0.0698		301.5765	301.5765	0.0975		304.0149
Total	**0.1514**	**1.5357**	**2.2313**	**3.1200e-003**	**2.5000e-004**	**0.0758**	**0.0761**	**4.0000e-005**	**0.0698**	**0.0698**		**301.5765**	**301.5765**	**0.0975**		**304.0149**

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	lb/day										lb/day					
Hauling	1.3800e-003	0.0493	0.0147	2.0000e-004	4.5900e-003	1.3000e-004	4.7200e-003	1.2600e-003	1.2000e-004	1.3800e-003		21.1738	21.1738	1.2100e-003		21.2040
Vendor	7.2900e-003	0.2205	0.0680	8.6000e-004	0.0241	5.1000e-004	0.0246	6.9200e-003	4.9000e-004	7.4100e-003		91.3400	91.3400	3.6800e-003		91.4321
Worker	0.0210	0.0155	0.1624	5.0000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		49.6926	49.6926	1.2900e-003		49.7249
Total	**0.0297**	**0.2853**	**0.2451**	**1.5600e-003**	**0.0880**	**9.9000e-004**	**0.0890**	**0.0239**	**9.3000e-004**	**0.0248**		**162.2065**	**162.2065**	**6.1800e-003**		**162.3609**

3.7 Excavation of Bore/Receiving Pits - 2023

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	lb/day										lb/day					
Fugitive Dust					1.1000e-004	0.0000	1.1000e-004	2.0000e-005	0.0000	2.0000e-005			0.0000			0.0000
Off-Road	0.0760	1.7344	2.3421	3.1200e-003		0.1215	0.1215		0.1215	0.1215	0.0000	301.5765	301.5765	0.0975		304.0149
Total	**0.0760**	**1.7344**	**2.3421**	**3.1200e-003**	**1.1000e-004**	**0.1215**	**0.1216**	**2.0000e-005**	**0.1215**	**0.1216**	**0.0000**	**301.5765**	**301.5765**	**0.0975**		**304.0149**

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	lb/day										lb/day					
Hauling	1.3800e-003	0.0493	0.0147	2.0000e-004	4.5900e-003	1.3000e-004	4.7200e-003	1.2600e-003	1.2000e-004	1.3800e-003		21.1738	21.1738	1.2100e-003		21.2040
Vendor	7.2900e-003	0.2205	0.0680	8.6000e-004	0.0241	5.1000e-004	0.0246	6.9200e-003	4.9000e-004	7.4100e-003		91.3400	91.3400	3.6800e-003		91.4321
Worker	0.0210	0.0155	0.1624	5.0000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		49.6926	49.6926	1.2900e-003		49.7249
Total	**0.0297**	**0.2853**	**0.2451**	**1.5600e-003**	**0.0880**	**9.9000e-004**	**0.0890**	**0.0239**	**9.3000e-004**	**0.0248**		**162.2065**	**162.2065**	**6.1800e-003**		**162.3609**

3.8 Installation of Pipe - 2023

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	lb/day										lb/day					
Off-Road	0.2151	2.0396	2.0329	9.4600e-003		0.0660	0.0660		0.0608	0.0608		915.4033	915.4033	0.2961		922.8048
Total	**0.2151**	**2.0396**	**2.0329**	**9.4600e-003**		**0.0660**	**0.0660**		**0.0608**	**0.0608**		**915.4033**	**915.4033**	**0.2961**		**922.8048**

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	lb/day										lb/day					
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
Vendor	0.0146	0.4410	0.1360	1.7100e-003	0.0481	1.0200e-003	0.0492	0.0139	9.7000e-004	0.0148		182.6801	182.6801	7.3600e-003		182.8642
Worker	0.0210	0.0155	0.1624	5.0000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		49.6926	49.6926	1.2900e-003		49.7249
Total	**0.0356**	**0.4565**	**0.2984**	**2.2100e-003**	**0.1075**	**1.3700e-003**	**0.1088**	**0.0296**	**1.2900e-003**	**0.0309**		**232.3727**	**232.3727**	**8.6500e-003**		**232.5890**

3.8 Installation of Pipe - 2023

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	lb/day										lb/day					
Off-Road	0.2339	4.5214	5.0671	9.4600e-003		0.1715	0.1715		0.1715	0.1715	0.0000	915.4033	915.4033	0.2961		922.8048
Total	**0.2339**	**4.5214**	**5.0671**	**9.4600e-003**		**0.1715**	**0.1715**		**0.1715**	**0.1715**	**0.0000**	**915.4033**	**915.4033**	**0.2961**		**922.8048**

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	lb/day										lb/day					
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
Vendor	0.0146	0.4410	0.1360	1.7100e-003	0.0481	1.0200e-003	0.0492	0.0139	9.7000e-004	0.0148		182.6801	182.6801	7.3600e-003		182.8642
Worker	0.0210	0.0155	0.1624	5.0000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		49.6926	49.6926	1.2900e-003		49.7249
Total	**0.0356**	**0.4565**	**0.2984**	**2.2100e-003**	**0.1075**	**1.3700e-003**	**0.1088**	**0.0296**	**1.2900e-003**	**0.0309**		**232.3727**	**232.3727**	**8.6500e-003**		**232.5890**

3.9 Backfill - 2023

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	lb/day										lb/day					
Fugitive Dust					6.2000e-004	0.0000	6.2000e-004	9.0000e-005	0.0000	9.0000e-005			0.0000			0.0000
Off-Road	0.6016	4.5198	6.5579	0.0101		0.2302	0.2302		0.2241	0.2241		966.1066	966.1066	0.1373		969.5389
Total	**0.6016**	**4.5198**	**6.5579**	**0.0101**	**6.2000e-004**	**0.2302**	**0.2308**	**9.0000e-005**	**0.2241**	**0.2242**		**966.1066**	**966.1066**	**0.1373**		**969.5389**

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	lb/day										lb/day					
Hauling	2.7600e-003	0.0987	0.0293	3.9000e-004	9.1700e-003	2.6000e-004	9.4300e-003	2.5100e-003	2.5000e-004	2.7600e-003		42.3476	42.3476	2.4100e-003		42.4079
Vendor	0.0146	0.4410	0.1360	1.7100e-003	0.0481	1.0200e-003	0.0492	0.0139	9.7000e-004	0.0148		182.6801	182.6801	7.3600e-003		182.8642
Worker	0.0210	0.0155	0.1624	5.0000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		49.6926	49.6926	1.2900e-003		49.7249
Total	**0.0384**	**0.5551**	**0.3277**	**2.6000e-003**	**0.1166**	**1.6300e-003**	**0.1182**	**0.0321**	**1.5400e-003**	**0.0336**		**274.7203**	**274.7203**	**0.0111**		**274.9969**

3.9 Backfill - 2023

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	lb/day										lb/day					
Fugitive Dust					2.8000e-004	0.0000	2.8000e-004	4.0000e-005	0.0000	4.0000e-005			0.0000			0.0000
Off-Road	0.2163	4.9384	6.6686	0.0101		0.3461	0.3461		0.3461	0.3461	0.0000	966.1066	966.1066	0.1373		969.5389
Total	**0.2163**	**4.9384**	**6.6686**	**0.0101**	**2.8000e-004**	**0.3461**	**0.3463**	**4.0000e-005**	**0.3461**	**0.3461**	**0.0000**	**966.1066**	**966.1066**	**0.1373**		**969.5389**

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	lb/day										lb/day					
Hauling	2.7600e-003	0.0987	0.0293	3.9000e-004	9.1700e-003	2.6000e-004	9.4300e-003	2.5100e-003	2.5000e-004	2.7600e-003		42.3476	42.3476	2.4100e-003		42.4079
Vendor	0.0146	0.4410	0.1360	1.7100e-003	0.0481	1.0200e-003	0.0492	0.0139	9.7000e-004	0.0148		182.6801	182.6801	7.3600e-003		182.8642
Worker	0.0210	0.0155	0.1624	5.0000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		49.6926	49.6926	1.2900e-003		49.7249
Total	**0.0384**	**0.5551**	**0.3277**	**2.6000e-003**	**0.1166**	**1.6300e-003**	**0.1182**	**0.0321**	**1.5400e-003**	**0.0336**		**274.7203**	**274.7203**	**0.0111**		**274.9969**

3.10 Installation of Metered Turnouts - 2023

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	lb/day										lb/day					
Off-Road	0.1514	1.5357	2.2313	3.1200e-003		0.0758	0.0758		0.0698	0.0698		301.5765	301.5765	0.0975		304.0149
Total	**0.1514**	**1.5357**	**2.2313**	**3.1200e-003**		**0.0758**	**0.0758**		**0.0698**	**0.0698**		**301.5765**	**301.5765**	**0.0975**		**304.0149**

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	lb/day										lb/day					
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
Vendor	7.2900e-003	0.2205	0.0680	8.6000e-004	0.0241	5.1000e-004	0.0246	6.9200e-003	4.9000e-004	7.4100e-003		91.3400	91.3400	3.6800e-003		91.4321
Worker	0.0210	0.0155	0.1624	5.0000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		49.6926	49.6926	1.2900e-003		49.7249
Total	**0.0283**	**0.2360**	**0.2304**	**1.3600e-003**	**0.0834**	**8.6000e-004**	**0.0842**	**0.0227**	**8.1000e-004**	**0.0235**		**141.0327**	**141.0327**	**4.9700e-003**		**141.1569**

3.10 Installation of Metered Turnouts - 2023

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	lb/day										lb/day					
Off-Road	0.0760	1.7344	2.3421	3.1200e-003		0.1215	0.1215		0.1215	0.1215	0.0000	301.5765	301.5765	0.0975		304.0149
Total	**0.0760**	**1.7344**	**2.3421**	**3.1200e-003**		**0.1215**	**0.1215**		**0.1215**	**0.1215**	**0.0000**	**301.5765**	**301.5765**	**0.0975**		**304.0149**

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	lb/day										lb/day					
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
Vendor	7.2900e-003	0.2205	0.0680	8.6000e-004	0.0241	5.1000e-004	0.0246	6.9200e-003	4.9000e-004	7.4100e-003		91.3400	91.3400	3.6800e-003		91.4321
Worker	0.0210	0.0155	0.1624	5.0000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		49.6926	49.6926	1.2900e-003		49.7249
Total	**0.0283**	**0.2360**	**0.2304**	**1.3600e-003**	**0.0834**	**8.6000e-004**	**0.0842**	**0.0227**	**8.1000e-004**	**0.0235**		**141.0327**	**141.0327**	**4.9700e-003**		**141.1569**

3.11 Pavement Repairs - 2023

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	lb/day										lb/day					
Off-Road	0.3244	3.2130	4.4090	6.7000e-003		0.1665	0.1665		0.1532	0.1532		648.5747	648.5747	0.2098		653.8188
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3244**	**3.2130**	**4.4090**	**6.7000e-003**		**0.1665**	**0.1665**		**0.1532**	**0.1532**		**648.5747**	**648.5747**	**0.2098**		**653.8188**

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	lb/day										lb/day					
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
Vendor	0.0146	0.4410	0.1360	1.7100e-003	0.0481	1.0200e-003	0.0492	0.0139	9.7000e-004	0.0148		182.6801	182.6801	7.3600e-003		182.8642
Worker	0.0210	0.0155	0.1624	5.0000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		49.6926	49.6926	1.2900e-003		49.7249
Total	**0.0356**	**0.4565**	**0.2984**	**2.2100e-003**	**0.1075**	**1.3700e-003**	**0.1088**	**0.0296**	**1.2900e-003**	**0.0309**		**232.3727**	**232.3727**	**8.6500e-003**		**232.5890**

3.11 Pavement Repairs - 2023

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	lb/day										lb/day					
Off-Road	0.1649	3.4135	5.0848	6.7000e-003		0.1968	0.1968		0.1968	0.1968	0.0000	648.5747	648.5747	0.2098		653.8188
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.1649**	**3.4135**	**5.0848**	**6.7000e-003**		**0.1968**	**0.1968**		**0.1968**	**0.1968**	**0.0000**	**648.5747**	**648.5747**	**0.2098**		**653.8188**

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	lb/day										lb/day					
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
Vendor	0.0146	0.4410	0.1360	1.7100e-003	0.0481	1.0200e-003	0.0492	0.0139	9.7000e-004	0.0148		182.6801	182.6801	7.3600e-003		182.8642
Worker	0.0210	0.0155	0.1624	5.0000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		49.6926	49.6926	1.2900e-003		49.7249
Total	**0.0356**	**0.4565**	**0.2984**	**2.2100e-003**	**0.1075**	**1.3700e-003**	**0.1088**	**0.0296**	**1.2900e-003**	**0.0309**		**232.3727**	**232.3727**	**8.6500e-003**		**232.5890**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	lb/day										lb/day					
Mitigated	7.7300e-003	0.0323	0.1036	3.5000e-004	0.0344	3.1000e-004	0.0347	9.1800e-003	2.9000e-004	9.4700e-003		35.7822	35.7822	1.2100e-003		35.8124
Unmitigated	7.7300e-003	0.0323	0.1036	3.5000e-004	0.0344	3.1000e-004	0.0347	9.1800e-003	2.9000e-004	9.4700e-003		35.7822	35.7822	1.2100e-003		35.8124

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Research & Development	4.00	4.00	4.00	16,235	16,235
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	4.00	4.00	4.00	16,235	16,235

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
Research & Development	13.00	13.00	13.00	33.00	48.00	19.00	82	15	3
Unrefrigerated Warehouse-No	13.00	13.00	13.00	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Research & Development	0.582546	0.028575	0.198242	0.117308	0.024121	0.006096	0.012865	0.019735	0.002341	0.001188	0.004913	0.000770	0.001299
Unrefrigerated Warehouse-No Rail	0.582546	0.028575	0.198242	0.117308	0.024121	0.006096	0.012865	0.019735	0.002341	0.001188	0.004913	0.000770	0.001299

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	lb/day										lb/day					
NaturalGas Mitigated	0.0111	0.1011	0.0849	6.1000e-004		7.6800e-003	7.6800e-003		7.6800e-003	7.6800e-003		121.2635	121.2635	2.3200e-003	2.2200e-003	121.9841
NaturalGas Unmitigated	0.0111	0.1011	0.0849	6.1000e-004		7.6800e-003	7.6800e-003		7.6800e-003	7.6800e-003		121.2635	121.2635	2.3200e-003	2.2200e-003	121.9841

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	lb/day										lb/day					
Research & Development	114.356	1.2300e-003	0.0112	9.4200e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004		13.4537	13.4537	2.6000e-004	2.5000e-004	13.5336
Unrefrigerated Warehouse-No Rail	916.384	9.8800e-003	0.0898	0.0755	5.4000e-004		6.8300e-003	6.8300e-003		6.8300e-003	6.8300e-003		107.8098	107.8098	2.0700e-003	1.9800e-003	108.4505
Total		**0.0111**	**0.1011**	**0.0849**	**6.1000e-004**		**7.6800e-003**	**7.6800e-003**		**7.6800e-003**	**7.6800e-003**		**121.2635**	**121.2635**	**2.3300e-003**	**2.2300e-003**	**121.9841**

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	lb/day										lb/day					
Research & Development	0.114356	1.2300e-003	0.0112	9.4200e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004		13.4537	13.4537	2.6000e-004	2.5000e-004	13.5336
Unrefrigerated Warehouse-No Rail	0.916384	9.8800e-003	0.0898	0.0755	5.4000e-004		6.8300e-003	6.8300e-003		6.8300e-003	6.8300e-003		107.8098	107.8098	2.0700e-003	1.9800e-003	108.4505
Total		**0.0111**	**0.1011**	**0.0849**	**6.1000e-004**		**7.6800e-003**	**7.6800e-003**		**7.6800e-003**	**7.6800e-003**		**121.2635**	**121.2635**	**2.3300e-003**	**2.2300e-003**	**121.9841**

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	lb/day										lb/day					
Mitigated	0.5691	2.0000e-005	2.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Unmitigated	0.5691	2.0000e-005	2.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1302					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4387					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.9000e-004	2.0000e-005	2.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Total	**0.5691**	**2.0000e-005**	**2.0900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.4900e-003**	**4.4900e-003**	**1.0000e-005**		**4.7800e-003**

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	lb/day										lb/day					
Architectural Coating	0.1302					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4387					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.9000e-004	2.0000e-005	2.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Total	**0.5691**	**2.0000e-005**	**2.0900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.4900e-003**	**4.4900e-003**	**1.0000e-005**		**4.7800e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

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	1	100	500	0.73	CNG

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	lb/day										lb/day					
Emergency Generator - CNG (500 - 9999 HP)	4.3990	0.3388	11.4571	1.5300e-003		0.0243	0.0243		0.0243	0.0243		281.0547	281.0547	0.5877		295.7462
Total	**4.3990**	**0.3388**	**11.4571**	**1.5300e-003**		**0.0243**	**0.0243**		**0.0243**	**0.0243**		**281.0547**	**281.0547**	**0.5877**		**295.7462**

11.0 Vegetation

San Miguel WWTP Upgrade/Expansion Project BACT

San Luis Obispo County APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	2.00	1000sqft	0.05	2,000.00	0
Unrefrigerated Warehouse-No Rail	18.50	1000sqft	0.42	18,500.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	3			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	206	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

San Miguel WWTP Upgrade/Expansion Project BACT - San Luis Obispo County APCD Air District, Winter

Project Characteristics - Based on project description. CO2 rate based on PGE 2020 Sustainability Report.

Land Use - Based on project description.

Construction Phase - Based on information from SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

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Off-road Equipment - Based on information provided by SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

Off-road Equipment - Based on information provided by SMCSD.

Trips and VMT - Based on information provided by SMCSD.

On-road Fugitive Dust - CalEEMod defaults.

Grading - Based on information provided by SMCSD.

Vehicle Trips - 2 additional employees

Energy Use - CalEEMod defaults. Pump energy use added to warehouse.

Water And Wastewater - Based on information from SMCSD.

Solid Waste - CalEEMod defaults.

Construction Off-road Equipment Mitigation - In accordance with SLOCAPCD Rule 401.

Stationary Sources - Emergency Generators and Fire Pumps - Based on information provided by SMCSD.

Stationary Sources - Emergency Generators and Fire Pumps EF - CalEEMod defaults.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
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tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
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tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
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tblConstructionPhase	NumDays	100.00	53.00
tblConstructionPhase	NumDays	100.00	22.00
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tblConstructionPhase	NumDays	2.00	8.00
tblConstructionPhase	NumDays	5.00	6.00
tblConstructionPhase	NumDays	1.00	88.00
tblConstructionPhase	NumDays	1.00	14.00
tblEnergyUse	LightingElect	3.22	0.00
tblEnergyUse	NT24E	5.13	0.00
tblEnergyUse	T24E	1.04	24.11
tblGrading	MaterialExported	0.00	11.00
tblGrading	MaterialImported	0.00	27.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	206
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	21.00
tblTripsAndVMT	HaulingTripLength	20.00	21.00
tblTripsAndVMT	HaulingTripNumber	1.00	2.00
tblTripsAndVMT	HaulingTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00

tblTripsAndVMT	VendorTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	3.00	2.00
tblTripsAndVMT	WorkerTripNumber	38.00	50.00
tblTripsAndVMT	WorkerTripNumber	5.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	50.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblTripsAndVMT	WorkerTripNumber	0.00	4.00
tblTripsAndVMT	WorkerTripNumber	3.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblTripsAndVMT	WorkerTripNumber	5.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblVehicleTrips	ST_TR	1.90	2.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.11	2.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	8.11	2.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	IndoorWaterUseRate	4,278,125.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2022	8.5258	88.8179	55.5807	0.1340	8.1312	3.7335	10.5437	3.6200	3.4617	5.8983	0.0000	12,971.9197	12,971.9197	3.6819	0.0000	13,063.9660
2023	0.6438	5.0789	6.8908	0.0127	0.1172	0.2318	0.3491	0.0322	0.2257	0.2579	0.0000	1,235.2107	1,235.2107	0.3049	0.0000	1,238.9267
Maximum	**8.5258**	**88.8179**	**55.5807**	**0.1340**	**8.1312**	**3.7335**	**10.5437**	**3.6200**	**3.4617**	**5.8983**	**0.0000**	**12,971.9197**	**12,971.9197**	**3.6819**	**0.0000**	**13,063.9660**

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	lb/day										lb/day					
2022	3.3170	62.2305	73.3494	0.1340	3.9442	2.7347	6.1972	1.7049	2.7343	3.9577	0.0000	12,971.9196	12,971.9196	3.6819	0.0000	13,063.9660
2023	0.2733	5.4974	7.0016	0.0127	0.1169	0.3477	0.4646	0.0321	0.3476	0.3798	0.0000	1,235.2107	1,235.2107	0.3049	0.0000	1,238.9267
Maximum	**3.3170**	**62.2305**	**73.3494**	**0.1340**	**3.9442**	**2.7347**	**6.1972**	**1.7049**	**2.7343**	**3.9577**	**0.0000**	**12,971.9196**	**12,971.9196**	**3.6819**	**0.0000**	**13,063.9660**

	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	**60.85**	**27.87**	**-28.62**	**0.00**	**50.77**	**22.27**	**38.84**	**52.44**	**16.42**	**29.54**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
Area	0.5691	2.0000e-005	2.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Energy	0.0111	0.1011	0.0849	6.1000e-004		7.6800e-003	7.6800e-003		7.6800e-003	7.6800e-003		121.2635	121.2635	2.3200e-003	2.2200e-003	121.9841
Mobile	7.4800e-003	0.0338	0.1027	3.4000e-004	0.0344	3.1000e-004	0.0347	9.1800e-003	2.9000e-004	9.4700e-003		34.4002	34.4002	1.2100e-003		34.4303
Stationary	4.3990	0.3388	11.4571	1.5300e-003		0.0243	0.0243		0.0243	0.0243		281.0547	281.0547	0.5877		295.7462
Total	**4.9867**	**0.4736**	**11.6468**	**2.4800e-003**	**0.0344**	**0.0323**	**0.0666**	**9.1800e-003**	**0.0323**	**0.0414**		**436.7229**	**436.7229**	**0.5912**	**2.2200e-003**	**452.1654**

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	lb/day										lb/day					
Area	0.5691	2.0000e-005	2.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Energy	0.0111	0.1011	0.0849	6.1000e-004		7.6800e-003	7.6800e-003		7.6800e-003	7.6800e-003		121.2635	121.2635	2.3200e-003	2.2200e-003	121.9841
Mobile	7.4800e-003	0.0338	0.1027	3.4000e-004	0.0344	3.1000e-004	0.0347	9.1800e-003	2.9000e-004	9.4700e-003		34.4002	34.4002	1.2100e-003		34.4303
Stationary	4.3990	0.3388	11.4571	1.5300e-003		0.0243	0.0243		0.0243	0.0243		281.0547	281.0547	0.5877		295.7462
Total	**4.9867**	**0.4736**	**11.6468**	**2.4800e-003**	**0.0344**	**0.0323**	**0.0666**	**9.1800e-003**	**0.0323**	**0.0414**		**436.7229**	**436.7229**	**0.5912**	**2.2200e-003**	**452.1654**

	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

San Miguel WWTP Upgrade/Expansion Project BACT - San Luis Obispo County APCD Air District, Winter

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/3/2022	5/4/2022	5	88	
2	Trenching	Trenching	5/5/2022	8/4/2022	5	66	
3	Plant Installation	Building Construction	8/5/2022	12/22/2022	5	100	
4	Demobilization	Building Construction	12/23/2022	12/29/2022	5	5	
5	Pre-Construction Utility Locations & Potholing	Site Preparation	1/2/2023	1/19/2023	5	14	
6	Excavation of Bore/Receiving Pits	Grading	1/20/2023	1/31/2023	5	8	
7	Installation of Pipe	Building Construction	2/1/2023	4/14/2023	5	53	
8	Backfill	Grading	4/15/2023	4/26/2023	5	8	
9	Installation of Metered Turnouts	Building Construction	4/27/2023	5/26/2023	5	22	
10	Pavement Repairs	Paving	5/27/2023	6/5/2023	5	6	

Acres of Grading (Site Preparation Phase): 132

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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
Excavation of Bore/Receiving Pits	Concrete/Industrial Saws	0	8.00	81	0.73
Excavation of Bore/Receiving Pits	Rubber Tired Dozers	0	1.00	247	0.40
Excavation of Bore/Receiving Pits	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Installation of Pipe	Bore/Drill Rigs	1	8.00	221	0.50
Installation of Pipe	Cranes	0	4.00	231	0.29
Installation of Pipe	Forklifts	0	6.00	89	0.20

Installation of Pipe	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Backfill	Concrete/Industrial Saws	0	8.00	81	0.73
Backfill	Crushing/Proc. Equipment	1	8.00	85	0.78
Backfill	Rubber Tired Dozers	0	1.00	247	0.40
Backfill	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Installation of Metered Turnouts	Cranes	0	4.00	231	0.29
Installation of Metered Turnouts	Forklifts	0	6.00	89	0.20
Installation of Metered Turnouts	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pavement Repairs	Cement and Mortar Mixers	0	6.00	9	0.56
Pavement Repairs	Pavers	0	7.00	130	0.42
Pavement Repairs	Paving Equipment	1	8.00	132	0.36
Pavement Repairs	Rollers	1	8.00	80	0.38
Pavement Repairs	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Site Preparation	Forklifts	3	8.00	89	0.20
Site Preparation	Generator Sets	5	8.00	84	0.74
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rollers	1	8.00	80	0.38
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Loaders	1	8.00	203	0.36
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Trenchers	1	8.00	78	0.50
Pre-Construction Utility Locations & Potholing	Graders	0	8.00	187	0.41
Pre-Construction Utility Locations & Potholing	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Trenching	Pavers	1	8.00	130	0.42
Trenching	Rollers	1	8.00	80	0.38
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trenching	Trenchers	1	8.00	78	0.50
Plant Installation	Cranes	0	4.00	231	0.29
Plant Installation	Crushing/Proc. Equipment	1	8.00	85	0.78
Plant Installation	Forklifts	0	6.00	89	0.20
Plant Installation	Graders	3	8.00	187	0.41
Plant Installation	Pumps	1	8.00	84	0.74
Plant Installation	Rollers	3	8.00	80	0.38
Plant Installation	Rubber Tired Dozers	3	8.00	247	0.40
Plant Installation	Rubber Tired Loaders	2	8.00	203	0.36
Plant Installation	Scrapers	3	8.00	367	0.48
Plant Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Demobilization	Cranes	0	4.00	231	0.29
Demobilization	Forklifts	0	6.00	89	0.20
Demobilization	Tractors/Loaders/Backhoes	0	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
Excavation of Bore/Receiving Pits	1	6.00	2.00	2.00	13.00	13.00	21.00	LD_Mix	HDT_Mix	HHDT
Installation of Pipe	1	6.00	4.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Backfill	2	6.00	4.00	4.00	13.00	13.00	21.00	LD_Mix	HDT_Mix	HHDT
Installation of Metered Turnouts	1	6.00	2.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Pavement Repairs	2	6.00	4.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	15	50.00	2.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Pre-Construction Utility Locations & Pot	0	4.00	0.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	4	10.00	2.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Plant Installation	17	50.00	4.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Demobilization	0	20.00	4.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2022

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	lb/day										lb/day					
Fugitive Dust					7.6128	0.0000	7.6128	3.4820	0.0000	3.4820			0.0000			0.0000
Off-Road	5.0483	50.6069	41.7490	0.0832		2.4084	2.4084		2.2745	2.2745		7,985.8300	7,985.8300	1.7233		8,028.9118
Total	**5.0483**	**50.6069**	**41.7490**	**0.0832**	**7.6128**	**2.4084**	**10.0212**	**3.4820**	**2.2745**	**5.7565**		**7,985.8300**	**7,985.8300**	**1.7233**		**8,028.9118**

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	lb/day										lb/day					
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
Vendor	0.0101	0.2869	0.0830	8.6000e-004	0.0241	1.1100e-003	0.0252	6.9200e-003	1.0600e-003	7.9800e-003		91.7728	91.7728	4.1300e-003		91.8761
Worker	0.2139	0.1628	1.4316	4.1200e-003	0.4943	2.9700e-003	0.4973	0.1311	2.7400e-003	0.1338		410.1057	410.1057	0.0116		410.3951
Total	**0.2241**	**0.4497**	**1.5145**	**4.9800e-003**	**0.5184**	**4.0800e-003**	**0.5225**	**0.1380**	**3.8000e-003**	**0.1418**		**501.8786**	**501.8786**	**0.0157**		**502.2712**

3.2 Site Preparation - 2022

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	lb/day										lb/day					
Fugitive Dust					3.4258	0.0000	3.4258	1.5669	0.0000	1.5669			0.0000			0.0000
Off-Road	1.8925	40.0665	50.1130	0.0832		2.2490	2.2490		2.2490	2.2490	0.0000	7,985.8300	7,985.8300	1.7233		8,028.9118
Total	**1.8925**	**40.0665**	**50.1130**	**0.0832**	**3.4258**	**2.2490**	**5.6748**	**1.5669**	**2.2490**	**3.8159**	**0.0000**	**7,985.8300**	**7,985.8300**	**1.7233**		**8,028.9118**

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	lb/day										lb/day					
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
Vendor	0.0101	0.2869	0.0830	8.6000e-004	0.0241	1.1100e-003	0.0252	6.9200e-003	1.0600e-003	7.9800e-003		91.7728	91.7728	4.1300e-003		91.8761
Worker	0.2139	0.1628	1.4316	4.1200e-003	0.4943	2.9700e-003	0.4973	0.1311	2.7400e-003	0.1338		410.1057	410.1057	0.0116		410.3951
Total	**0.2241**	**0.4497**	**1.5145**	**4.9800e-003**	**0.5184**	**4.0800e-003**	**0.5225**	**0.1380**	**3.8000e-003**	**0.1418**		**501.8786**	**501.8786**	**0.0157**		**502.2712**

3.3 Trenching - 2022

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	lb/day										lb/day					
Off-Road	0.9017	8.8801	9.5812	0.0138		0.5288	0.5288		0.4865	0.4865		1,337.5501	1,337.5501	0.4326		1,348.3649
Total	**0.9017**	**8.8801**	**9.5812**	**0.0138**		**0.5288**	**0.5288**		**0.4865**	**0.4865**		**1,337.5501**	**1,337.5501**	**0.4326**		**1,348.3649**

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	lb/day										lb/day					
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
Vendor	0.0101	0.2869	0.0830	8.6000e-004	0.0241	1.1100e-003	0.0252	6.9200e-003	1.0600e-003	7.9800e-003		91.7728	91.7728	4.1300e-003		91.8761
Worker	0.0428	0.0326	0.2863	8.2000e-004	0.0989	5.9000e-004	0.0995	0.0262	5.5000e-004	0.0268		82.0212	82.0212	2.3200e-003		82.0790
Total	**0.0529**	**0.3195**	**0.3693**	**1.6800e-003**	**0.1229**	**1.7000e-003**	**0.1246**	**0.0331**	**1.6100e-003**	**0.0348**		**173.7940**	**173.7940**	**6.4500e-003**		**173.9551**

3.3 Trenching - 2022

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	lb/day										lb/day					
Off-Road	0.3384	7.3223	10.4339	0.0138		0.4644	0.4644		0.4644	0.4644	0.0000	1,337.5501	1,337.5501	0.4326		1,348.3649
Total	**0.3384**	**7.3223**	**10.4339**	**0.0138**		**0.4644**	**0.4644**		**0.4644**	**0.4644**	**0.0000**	**1,337.5501**	**1,337.5501**	**0.4326**		**1,348.3649**

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	lb/day										lb/day					
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
Vendor	0.0101	0.2869	0.0830	8.6000e-004	0.0241	1.1100e-003	0.0252	6.9200e-003	1.0600e-003	7.9800e-003		91.7728	91.7728	4.1300e-003		91.8761
Worker	0.0428	0.0326	0.2863	8.2000e-004	0.0989	5.9000e-004	0.0995	0.0262	5.5000e-004	0.0268		82.0212	82.0212	2.3200e-003		82.0790
Total	**0.0529**	**0.3195**	**0.3693**	**1.6800e-003**	**0.1229**	**1.7000e-003**	**0.1246**	**0.0331**	**1.6100e-003**	**0.0348**		**173.7940**	**173.7940**	**6.4500e-003**		**173.9551**

3.4 Plant Installation - 2022

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	lb/day										lb/day					
Off-Road	8.2917	88.0814	53.9831	0.1281		3.7283	3.7283		3.4569	3.4569		12,378.2683	12,378.2683	3.6620		12,469.8187
Total	**8.2917**	**88.0814**	**53.9831**	**0.1281**		**3.7283**	**3.7283**		**3.4569**	**3.4569**		**12,378.2683**	**12,378.2683**	**3.6620**		**12,469.8187**

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	lb/day										lb/day					
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
Vendor	0.0203	0.5738	0.1660	1.7200e-003	0.0481	2.2100e-003	0.0503	0.0138	2.1200e-003	0.0160		183.5456	183.5456	8.2600e-003		183.7522
Worker	0.2139	0.1628	1.4316	4.1200e-003	0.4943	2.9700e-003	0.4973	0.1311	2.7400e-003	0.1338		410.1057	410.1057	0.0116		410.3951
Total	**0.2342**	**0.7366**	**1.5975**	**5.8400e-003**	**0.5424**	**5.1800e-003**	**0.5476**	**0.1449**	**4.8600e-003**	**0.1498**		**593.6514**	**593.6514**	**0.0198**		**594.1473**

3.4 Plant Installation - 2022

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	lb/day										lb/day					
Off-Road	3.0828	61.4939	71.7519	0.1281		2.7295	2.7295		2.7295	2.7295	0.0000	12,378.2683	12,378.2683	3.6620		12,469.8187
Total	**3.0828**	**61.4939**	**71.7519**	**0.1281**		**2.7295**	**2.7295**		**2.7295**	**2.7295**	**0.0000**	**12,378.2683**	**12,378.2683**	**3.6620**		**12,469.8187**

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	lb/day										lb/day					
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
Vendor	0.0203	0.5738	0.1660	1.7200e-003	0.0481	2.2100e-003	0.0503	0.0138	2.1200e-003	0.0160		183.5456	183.5456	8.2600e-003		183.7522
Worker	0.2139	0.1628	1.4316	4.1200e-003	0.4943	2.9700e-003	0.4973	0.1311	2.7400e-003	0.1338		410.1057	410.1057	0.0116		410.3951
Total	**0.2342**	**0.7366**	**1.5975**	**5.8400e-003**	**0.5424**	**5.1800e-003**	**0.5476**	**0.1449**	**4.8600e-003**	**0.1498**		**593.6514**	**593.6514**	**0.0198**		**594.1473**

3.5 Demobilization - 2022

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	lb/day										lb/day					
Off-Road	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**

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	lb/day										lb/day					
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
Vendor	0.0203	0.5738	0.1660	1.7200e-003	0.0481	2.2100e-003	0.0503	0.0138	2.1200e-003	0.0160		183.5456	183.5456	8.2600e-003		183.7522
Worker	0.0856	0.0651	0.5726	1.6500e-003	0.1977	1.1900e-003	0.1989	0.0524	1.1000e-003	0.0535		164.0423	164.0423	4.6300e-003		164.1581
Total	**0.1058**	**0.6389**	**0.7386**	**3.3700e-003**	**0.2459**	**3.4000e-003**	**0.2493**	**0.0663**	**3.2200e-003**	**0.0695**		**347.5879**	**347.5879**	**0.0129**		**347.9103**

3.5 Demobilization - 2022

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	lb/day										lb/day					
Off-Road	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**

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	lb/day										lb/day					
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
Vendor	0.0203	0.5738	0.1660	1.7200e-003	0.0481	2.2100e-003	0.0503	0.0138	2.1200e-003	0.0160		183.5456	183.5456	8.2600e-003		183.7522
Worker	0.0856	0.0651	0.5726	1.6500e-003	0.1977	1.1900e-003	0.1989	0.0524	1.1000e-003	0.0535		164.0423	164.0423	4.6300e-003		164.1581
Total	**0.1058**	**0.6389**	**0.7386**	**3.3700e-003**	**0.2459**	**3.4000e-003**	**0.2493**	**0.0663**	**3.2200e-003**	**0.0695**		**347.5879**	**347.5879**	**0.0129**		**347.9103**

3.6 Pre-Construction Utility Locations & Potholing - 2023

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	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	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**

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	lb/day										lb/day					
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
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
Worker	0.0161	0.0117	0.1045	3.2000e-004	0.0395	2.3000e-004	0.0398	0.0105	2.1000e-004	0.0107		31.5781	31.5781	8.3000e-004		31.5987
Total	**0.0161**	**0.0117**	**0.1045**	**3.2000e-004**	**0.0395**	**2.3000e-004**	**0.0398**	**0.0105**	**2.1000e-004**	**0.0107**		**31.5781**	**31.5781**	**8.3000e-004**		**31.5987**

3.6 Pre-Construction Utility Locations & Potholing - 2023

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	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	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**		**0.0000**

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	lb/day										lb/day					
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
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
Worker	0.0161	0.0117	0.1045	3.2000e-004	0.0395	2.3000e-004	0.0398	0.0105	2.1000e-004	0.0107		31.5781	31.5781	8.3000e-004		31.5987
Total	**0.0161**	**0.0117**	**0.1045**	**3.2000e-004**	**0.0395**	**2.3000e-004**	**0.0398**	**0.0105**	**2.1000e-004**	**0.0107**		**31.5781**	**31.5781**	**8.3000e-004**		**31.5987**

3.7 Excavation of Bore/Receiving Pits - 2023

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	lb/day										lb/day					
Fugitive Dust					2.5000e-004	0.0000	2.5000e-004	4.0000e-005	0.0000	4.0000e-005			0.0000			0.0000
Off-Road	0.1514	1.5357	2.2313	3.1200e-003		0.0758	0.0758		0.0698	0.0698		301.5765	301.5765	0.0975		304.0149
Total	**0.1514**	**1.5357**	**2.2313**	**3.1200e-003**	**2.5000e-004**	**0.0758**	**0.0761**	**4.0000e-005**	**0.0698**	**0.0698**		**301.5765**	**301.5765**	**0.0975**		**304.0149**

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	lb/day										lb/day					
Hauling	1.4200e-003	0.0495	0.0153	1.9000e-004	4.5900e-003	1.3000e-004	4.7200e-003	1.2600e-003	1.3000e-004	1.3800e-003		20.8536	20.8536	1.2400e-003		20.8845
Vendor	7.6500e-003	0.2213	0.0728	8.4000e-004	0.0241	5.2000e-004	0.0246	6.9200e-003	5.0000e-004	7.4200e-003		90.0149	90.0149	3.8200e-003		90.1103
Worker	0.0242	0.0176	0.1567	4.8000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		47.3671	47.3671	1.2400e-003		47.3981
Total	**0.0332**	**0.2883**	**0.2449**	**1.5100e-003**	**0.0880**	**1.0000e-003**	**0.0890**	**0.0239**	**9.5000e-004**	**0.0249**		**158.2356**	**158.2356**	**6.3000e-003**		**158.3929**

3.7 Excavation of Bore/Receiving Pits - 2023

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	lb/day										lb/day					
Fugitive Dust					1.1000e-004	0.0000	1.1000e-004	2.0000e-005	0.0000	2.0000e-005			0.0000			0.0000
Off-Road	0.0760	1.7344	2.3421	3.1200e-003		0.1215	0.1215		0.1215	0.1215	0.0000	301.5765	301.5765	0.0975		304.0149
Total	**0.0760**	**1.7344**	**2.3421**	**3.1200e-003**	**1.1000e-004**	**0.1215**	**0.1216**	**2.0000e-005**	**0.1215**	**0.1216**	**0.0000**	**301.5765**	**301.5765**	**0.0975**		**304.0149**

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	lb/day										lb/day					
Hauling	1.4200e-003	0.0495	0.0153	1.9000e-004	4.5900e-003	1.3000e-004	4.7200e-003	1.2600e-003	1.3000e-004	1.3800e-003		20.8536	20.8536	1.2400e-003		20.8845
Vendor	7.6500e-003	0.2213	0.0728	8.4000e-004	0.0241	5.2000e-004	0.0246	6.9200e-003	5.0000e-004	7.4200e-003		90.0149	90.0149	3.8200e-003		90.1103
Worker	0.0242	0.0176	0.1567	4.8000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		47.3671	47.3671	1.2400e-003		47.3981
Total	**0.0332**	**0.2883**	**0.2449**	**1.5100e-003**	**0.0880**	**1.0000e-003**	**0.0890**	**0.0239**	**9.5000e-004**	**0.0249**		**158.2356**	**158.2356**	**6.3000e-003**		**158.3929**

3.8 Installation of Pipe - 2023

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	lb/day										lb/day					
Off-Road	0.2151	2.0396	2.0329	9.4600e-003		0.0660	0.0660		0.0608	0.0608		915.4033	915.4033	0.2961		922.8048
Total	**0.2151**	**2.0396**	**2.0329**	**9.4600e-003**		**0.0660**	**0.0660**		**0.0608**	**0.0608**		**915.4033**	**915.4033**	**0.2961**		**922.8048**

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	lb/day										lb/day					
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
Vendor	0.0153	0.4425	0.1456	1.6900e-003	0.0481	1.0400e-003	0.0492	0.0139	1.0000e-003	0.0148		180.0298	180.0298	7.6300e-003		180.2206
Worker	0.0242	0.0176	0.1567	4.8000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		47.3671	47.3671	1.2400e-003		47.3981
Total	**0.0395**	**0.4601**	**0.3023**	**2.1700e-003**	**0.1075**	**1.3900e-003**	**0.1088**	**0.0296**	**1.3200e-003**	**0.0309**		**227.3968**	**227.3968**	**8.8700e-003**		**227.6187**

3.8 Installation of Pipe - 2023

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	lb/day										lb/day					
Off-Road	0.2339	4.5214	5.0671	9.4600e-003		0.1715	0.1715		0.1715	0.1715	0.0000	915.4033	915.4033	0.2961		922.8048
Total	**0.2339**	**4.5214**	**5.0671**	**9.4600e-003**		**0.1715**	**0.1715**		**0.1715**	**0.1715**	**0.0000**	**915.4033**	**915.4033**	**0.2961**		**922.8048**

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	lb/day										lb/day					
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
Vendor	0.0153	0.4425	0.1456	1.6900e-003	0.0481	1.0400e-003	0.0492	0.0139	1.0000e-003	0.0148		180.0298	180.0298	7.6300e-003		180.2206
Worker	0.0242	0.0176	0.1567	4.8000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		47.3671	47.3671	1.2400e-003		47.3981
Total	**0.0395**	**0.4601**	**0.3023**	**2.1700e-003**	**0.1075**	**1.3900e-003**	**0.1088**	**0.0296**	**1.3200e-003**	**0.0309**		**227.3968**	**227.3968**	**8.8700e-003**		**227.6187**

3.9 Backfill - 2023

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	lb/day										lb/day					
Fugitive Dust					6.2000e-004	0.0000	6.2000e-004	9.0000e-005	0.0000	9.0000e-005			0.0000			0.0000
Off-Road	0.6016	4.5198	6.5579	0.0101		0.2302	0.2302		0.2241	0.2241		966.1066	966.1066	0.1373		969.5389
Total	**0.6016**	**4.5198**	**6.5579**	**0.0101**	**6.2000e-004**	**0.2302**	**0.2308**	**9.0000e-005**	**0.2241**	**0.2242**		**966.1066**	**966.1066**	**0.1373**		**969.5389**

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	lb/day										lb/day					
Hauling	2.8300e-003	0.0990	0.0307	3.8000e-004	9.1700e-003	2.7000e-004	9.4400e-003	2.5100e-003	2.6000e-004	2.7700e-003		41.7072	41.7072	2.4700e-003		41.7691
Vendor	0.0153	0.4425	0.1456	1.6900e-003	0.0481	1.0400e-003	0.0492	0.0139	1.0000e-003	0.0148		180.0298	180.0298	7.6300e-003		180.2206
Worker	0.0242	0.0176	0.1567	4.8000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		47.3671	47.3671	1.2400e-003		47.3981
Total	**0.0423**	**0.5590**	**0.3330**	**2.5500e-003**	**0.1166**	**1.6600e-003**	**0.1183**	**0.0321**	**1.5800e-003**	**0.0337**		**269.1041**	**269.1041**	**0.0113**		**269.3877**

3.9 Backfill - 2023

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	lb/day										lb/day					
Fugitive Dust					2.8000e-004	0.0000	2.8000e-004	4.0000e-005	0.0000	4.0000e-005			0.0000			0.0000
Off-Road	0.2163	4.9384	6.6686	0.0101		0.3461	0.3461		0.3461	0.3461	0.0000	966.1066	966.1066	0.1373		969.5389
Total	**0.2163**	**4.9384**	**6.6686**	**0.0101**	**2.8000e-004**	**0.3461**	**0.3463**	**4.0000e-005**	**0.3461**	**0.3461**	**0.0000**	**966.1066**	**966.1066**	**0.1373**		**969.5389**

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	lb/day										lb/day					
Hauling	2.8300e-003	0.0990	0.0307	3.8000e-004	9.1700e-003	2.7000e-004	9.4400e-003	2.5100e-003	2.6000e-004	2.7700e-003		41.7072	41.7072	2.4700e-003		41.7691
Vendor	0.0153	0.4425	0.1456	1.6900e-003	0.0481	1.0400e-003	0.0492	0.0139	1.0000e-003	0.0148		180.0298	180.0298	7.6300e-003		180.2206
Worker	0.0242	0.0176	0.1567	4.8000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		47.3671	47.3671	1.2400e-003		47.3981
Total	**0.0423**	**0.5590**	**0.3330**	**2.5500e-003**	**0.1166**	**1.6600e-003**	**0.1183**	**0.0321**	**1.5800e-003**	**0.0337**		**269.1041**	**269.1041**	**0.0113**		**269.3877**

3.10 Installation of Metered Turnouts - 2023

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	lb/day										lb/day					
Off-Road	0.1514	1.5357	2.2313	3.1200e-003		0.0758	0.0758		0.0698	0.0698		301.5765	301.5765	0.0975		304.0149
Total	**0.1514**	**1.5357**	**2.2313**	**3.1200e-003**		**0.0758**	**0.0758**		**0.0698**	**0.0698**		**301.5765**	**301.5765**	**0.0975**		**304.0149**

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	lb/day										lb/day					
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
Vendor	7.6500e-003	0.2213	0.0728	8.4000e-004	0.0241	5.2000e-004	0.0246	6.9200e-003	5.0000e-004	7.4200e-003		90.0149	90.0149	3.8200e-003		90.1103
Worker	0.0242	0.0176	0.1567	4.8000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		47.3671	47.3671	1.2400e-003		47.3981
Total	**0.0318**	**0.2388**	**0.2295**	**1.3200e-003**	**0.0834**	**8.7000e-004**	**0.0843**	**0.0227**	**8.2000e-004**	**0.0235**		**137.3820**	**137.3820**	**5.0600e-003**		**137.5084**

3.10 Installation of Metered Turnouts - 2023

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	lb/day										lb/day					
Off-Road	0.0760	1.7344	2.3421	3.1200e-003		0.1215	0.1215		0.1215	0.1215	0.0000	301.5765	301.5765	0.0975		304.0149
Total	**0.0760**	**1.7344**	**2.3421**	**3.1200e-003**		**0.1215**	**0.1215**		**0.1215**	**0.1215**	**0.0000**	**301.5765**	**301.5765**	**0.0975**		**304.0149**

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	lb/day										lb/day					
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
Vendor	7.6500e-003	0.2213	0.0728	8.4000e-004	0.0241	5.2000e-004	0.0246	6.9200e-003	5.0000e-004	7.4200e-003		90.0149	90.0149	3.8200e-003		90.1103
Worker	0.0242	0.0176	0.1567	4.8000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		47.3671	47.3671	1.2400e-003		47.3981
Total	**0.0318**	**0.2388**	**0.2295**	**1.3200e-003**	**0.0834**	**8.7000e-004**	**0.0843**	**0.0227**	**8.2000e-004**	**0.0235**		**137.3820**	**137.3820**	**5.0600e-003**		**137.5084**

3.11 Pavement Repairs - 2023

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	lb/day										lb/day					
Off-Road	0.3244	3.2130	4.4090	6.7000e-003		0.1665	0.1665		0.1532	0.1532		648.5747	648.5747	0.2098		653.8188
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3244**	**3.2130**	**4.4090**	**6.7000e-003**		**0.1665**	**0.1665**		**0.1532**	**0.1532**		**648.5747**	**648.5747**	**0.2098**		**653.8188**

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	lb/day										lb/day					
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
Vendor	0.0153	0.4425	0.1456	1.6900e-003	0.0481	1.0400e-003	0.0492	0.0139	1.0000e-003	0.0148		180.0298	180.0298	7.6300e-003		180.2206
Worker	0.0242	0.0176	0.1567	4.8000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		47.3671	47.3671	1.2400e-003		47.3981
Total	**0.0395**	**0.4601**	**0.3023**	**2.1700e-003**	**0.1075**	**1.3900e-003**	**0.1088**	**0.0296**	**1.3200e-003**	**0.0309**		**227.3968**	**227.3968**	**8.8700e-003**		**227.6187**

3.11 Pavement Repairs - 2023

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	lb/day										lb/day					
Off-Road	0.1649	3.4135	5.0848	6.7000e-003		0.1968	0.1968		0.1968	0.1968	0.0000	648.5747	648.5747	0.2098		653.8188
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.1649**	**3.4135**	**5.0848**	**6.7000e-003**		**0.1968**	**0.1968**		**0.1968**	**0.1968**	**0.0000**	**648.5747**	**648.5747**	**0.2098**		**653.8188**

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	lb/day										lb/day					
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
Vendor	0.0153	0.4425	0.1456	1.6900e-003	0.0481	1.0400e-003	0.0492	0.0139	1.0000e-003	0.0148		180.0298	180.0298	7.6300e-003		180.2206
Worker	0.0242	0.0176	0.1567	4.8000e-004	0.0593	3.5000e-004	0.0597	0.0157	3.2000e-004	0.0161		47.3671	47.3671	1.2400e-003		47.3981
Total	**0.0395**	**0.4601**	**0.3023**	**2.1700e-003**	**0.1075**	**1.3900e-003**	**0.1088**	**0.0296**	**1.3200e-003**	**0.0309**		**227.3968**	**227.3968**	**8.8700e-003**		**227.6187**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	lb/day										lb/day					
Mitigated	7.4800e-003	0.0338	0.1027	3.4000e-004	0.0344	3.1000e-004	0.0347	9.1800e-003	2.9000e-004	9.4700e-003		34.4002	34.4002	1.2100e-003		34.4303
Unmitigated	7.4800e-003	0.0338	0.1027	3.4000e-004	0.0344	3.1000e-004	0.0347	9.1800e-003	2.9000e-004	9.4700e-003		34.4002	34.4002	1.2100e-003		34.4303

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Research & Development	4.00	4.00	4.00	16,235	16,235
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	4.00	4.00	4.00	16,235	16,235

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
Research & Development	13.00	13.00	13.00	33.00	48.00	19.00	82	15	3
Unrefrigerated Warehouse-No	13.00	13.00	13.00	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Research & Development	0.582546	0.028575	0.198242	0.117308	0.024121	0.006096	0.012865	0.019735	0.002341	0.001188	0.004913	0.000770	0.001299
Unrefrigerated Warehouse-No Rail	0.582546	0.028575	0.198242	0.117308	0.024121	0.006096	0.012865	0.019735	0.002341	0.001188	0.004913	0.000770	0.001299

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	lb/day										lb/day					
NaturalGas Mitigated	0.0111	0.1011	0.0849	6.1000e-004		7.6800e-003	7.6800e-003		7.6800e-003	7.6800e-003		121.2635	121.2635	2.3200e-003	2.2200e-003	121.9841
NaturalGas Unmitigated	0.0111	0.1011	0.0849	6.1000e-004		7.6800e-003	7.6800e-003		7.6800e-003	7.6800e-003		121.2635	121.2635	2.3200e-003	2.2200e-003	121.9841

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	lb/day										lb/day					
Research & Development	114.356	1.2300e-003	0.0112	9.4200e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004		13.4537	13.4537	2.6000e-004	2.5000e-004	13.5336
Unrefrigerated Warehouse-No Rail	916.384	9.8800e-003	0.0898	0.0755	5.4000e-004		6.8300e-003	6.8300e-003		6.8300e-003	6.8300e-003		107.8098	107.8098	2.0700e-003	1.9800e-003	108.4505
Total		**0.0111**	**0.1011**	**0.0849**	**6.1000e-004**		**7.6800e-003**	**7.6800e-003**		**7.6800e-003**	**7.6800e-003**		**121.2635**	**121.2635**	**2.3300e-003**	**2.2300e-003**	**121.9841**

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	lb/day										lb/day					
Research & Development	0.114356	1.2300e-003	0.0112	9.4200e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004		13.4537	13.4537	2.6000e-004	2.5000e-004	13.5336
Unrefrigerated Warehouse-No Rail	0.916384	9.8800e-003	0.0898	0.0755	5.4000e-004		6.8300e-003	6.8300e-003		6.8300e-003	6.8300e-003		107.8098	107.8098	2.0700e-003	1.9800e-003	108.4505
Total		**0.0111**	**0.1011**	**0.0849**	**6.1000e-004**		**7.6800e-003**	**7.6800e-003**		**7.6800e-003**	**7.6800e-003**		**121.2635**	**121.2635**	**2.3300e-003**	**2.2300e-003**	**121.9841**

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	lb/day										lb/day					
Mitigated	0.5691	2.0000e-005	2.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Unmitigated	0.5691	2.0000e-005	2.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1302					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4387					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.9000e-004	2.0000e-005	2.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Total	**0.5691**	**2.0000e-005**	**2.0900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.4900e-003**	**4.4900e-003**	**1.0000e-005**		**4.7800e-003**

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	lb/day										lb/day					
Architectural Coating	0.1302					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4387					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.9000e-004	2.0000e-005	2.0900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7800e-003
Total	**0.5691**	**2.0000e-005**	**2.0900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.4900e-003**	**4.4900e-003**	**1.0000e-005**		**4.7800e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

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	1	100	500	0.73	CNG

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	lb/day										lb/day					
Emergency Generator - CNG (500 - 9999 HP)	4.3990	0.3388	11.4571	1.5300e-003		0.0243	0.0243		0.0243	0.0243		281.0547	281.0547	0.5877		295.7462
Total	**4.3990**	**0.3388**	**11.4571**	**1.5300e-003**		**0.0243**	**0.0243**		**0.0243**	**0.0243**		**281.0547**	**281.0547**	**0.5877**		**295.7462**

11.0 Vegetation

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

The San Miguel Community Services District, acting as the Lead Agency under the California Environmental Quality Act (CEQA), intends to adopt a Mitigated Negative Declaration at its regular meeting on July 28, 2022 for the San Miguel Wastewater Treatment Plan Upgrade/ Expansion Project (Project). The District owns and operates the WWTF, located in the community of San Miguel, County of San Luis Obispo, California. The WWTF occupies approximately 38.4 acres comprising four separate parcels, including Assessor's Parcel Numbers (APNs) 021-051-013, -015, -016 and -017. The main plant occupies approximately 17.8 acres, while the remaining 20.6 acres are located within the channel of the Salinas River to the east of the plant and mapped as Federal Emergency Management Agency (FEMA) Special Flood Hazard Zone A. The WWTF underwent the most recent significant upgrades in the 1990's and these were completed in 2001 bringing its current and permitted capacity up to 200,000 gallons per day (0.2 million gallons per day). The District currently treats an average of approximately 170,000 gallons per day. As noted in the Final EIR, San Miguel is expected to grow to a population of 3,658 in the year 2035 (County of San Luis Obispo 2016a). The District acknowledges that the existing WWTF is nearing capacity and has therefore proposed the WWTF expansion and upgrade (proposed project) to meet population projections and to comply with regulatory requirements. Physical improvements that would occur as part of the proposed project include improvements to the collection system/reclaimed water system, pumping station, septic receiving station, office and laboratory facilities, and additional maintenance and equipment storage/shop facilities; upgrading and modernizing the electrical controls and supervisory control and data acquisition (SCADA) system; and upgrading the backup power generation facilities. With the exception of a new treatment processing pad and all-weather access road and associated grading as well as solar panels, all project components would be located within the main WWTF. The new treatment processing pad and grading would be located to the north of the main WWTF on land owned by the District that is routinely maintained and cleared.

Printed copies of the Negative Declaration will be available at the San Miguel Community Services District Office located at 1150 Mission St, San Miguel, CA 93451. Written comments should be submitted to the San Miguel Community Services District by 5:00 p.m. on July 11, 2022. Submit comments to the following: San Miguel Community Services District Office, 1150 Mission St, San Miguel, CA 93451 Attention: Kelly Dodds, Director of Utilities or by email at Kelly Dodds kelly.dodds@sanmiguelcsd.org.